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UNITED STATES DEPARTMENT OF LABOR
WOMEN'S BUREAU

Bulletin No. 176

Application of Labor Legislation
to the Fruit and Vegetable Canning
and Preserving Industries

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No. 176

UNITED STATES DEPARTMENT OF LABOR

FRANCES PERKINS, Secretary

WOMEN'S BUREAU

MARY ANDERSON, Director



**Application of Labor Legislation
to the Fruit and Vegetable Canning
and Preserving Industries**



BULLETIN OF THE WOMEN'S BUREAU

No. 176

UNITED STATES

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LETTER OF TRANSMITTAL

UNITED STATES DEPARTMENT OF LABOR,
WOMEN'S BUREAU,
Washington, May 21, 1940.

MADAM: I have the honor to transmit herewith a study of the application of labor and social legislation to the canning and preserving of fruits and vegetables. This study was made in order that current facts would be available to guide Federal and State administrators in the application of specific laws to these industries. So urgent was the demand for this information that 1938 data were issued in preliminary form in December. This report combines the earlier survey with the survey of 1939.

Women's Bureau funds were supplemented in part by funds from the Division of Public Contracts and from the Wage and Hour Division. The report was made possible by the courteous cooperation of the National Cannery Association and almost 700 employers.

The survey was directed by Bertha M. Nienburg, chief economist of the Bureau. The field work in the Middle West was supervised by Caroline Manning and on the Pacific coast and in Hawaii by Ethel Erickson. Isadore Spring supervised the statistical compilations.

Respectfully submitted.

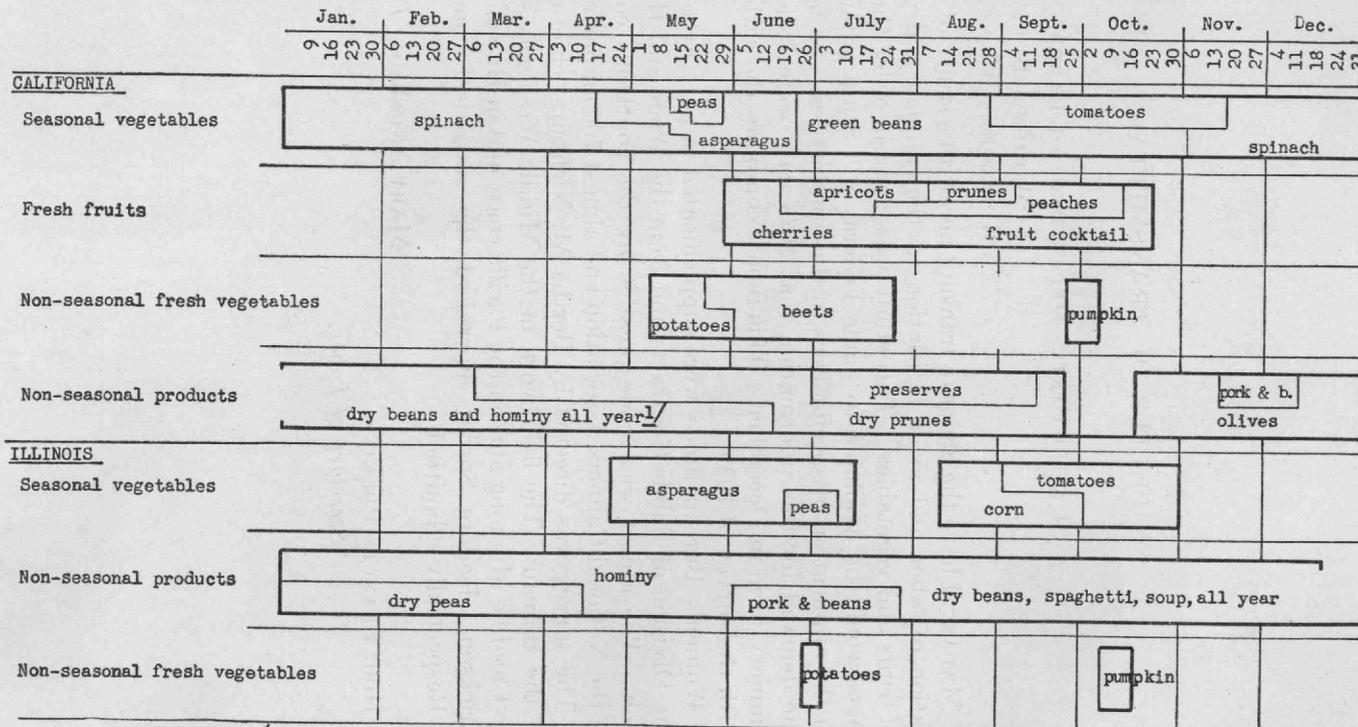
MARY ANDERSON, *Director.*

HON. FRANCES PERKINS,
Secretary of Labor.

Chart I-G.—Period Over Which Specified Products Were Canned in Principal Canning States, 1937

[Each bar indicates dates on which canning began and ended in a State; as different canneries began and ended on different dates, the over-all period is longer than that during which any individual plant canned.]

Canneries packing SEASONAL AND NON-SEASONAL PRODUCTS OF ALL KINDS



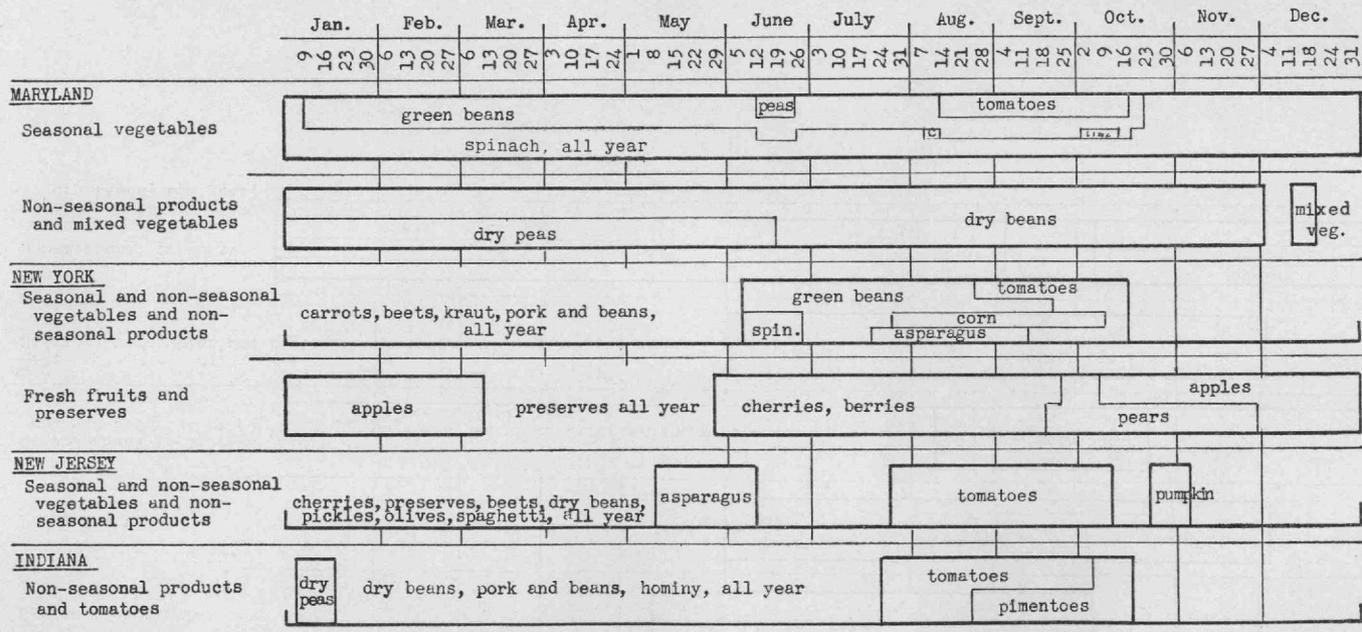
^{1/} As used on these charts "all year" signifies canning at convenient times during the year.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
	9 16 23 30	6 13 20 27	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27	4 11 18 24 31	
<u>WASHINGTON</u>													
Seasonal vegetables					asparagus	peas		lima beans gr. beans					
Fresh fruits						cherries berries	apri. pears grapes	peaches		apples			
Non-seasonal fresh vegetables and non-seasonal products		pork and beans, kraut, pickles, preserves, mince meat all year						beet	carrots	pump.			
<u>OHIO</u>													
Seasonal vegetables and beets						peas		tomatoes beets					
Non-seasonal products		hominy			spaghetti			hominy		kraut	hominy spaghetti		
(pork and beans, pickles, dry beans, all year)													

Chart I-G.—Period Over Which Specified Products Were Canned in Principal Canning States, 1937

[Each bar indicates dates on which canning began and ended in a State; as different canneries began and ended on different dates, the over-all period is longer than that during which any individual plant canned.]

Canneries packing SEASONAL AND NON-SEASONAL PRODUCTS OF ALL KINDS—Continued



As used on these charts "all year" signifies canning at convenient times during the year.

APPLICATION OF LABOR LEGISLATION TO THE FRUIT AND VEGETABLE CANNING AND PRESERVING INDUSTRIES

SALIENT FACTS

Labor legislation must be framed in general terms to insure the inclusion of all contemplated groups. In its application to specific industries, however, differences in industrial operations require consideration if the protection or benefits the law is intended to bestow on workers are to be achieved generally. It is well known that the industries of canning and preserving fresh fruits and vegetables have distinctive problems due to the uncertainty of weather conditions that affect the periods of crop maturity and the size and quality of the crop. The more than 300,000 wage earners who find some employment during the year in these industries can be benefited by labor legislation only as such legislation takes into consideration the industries' peculiar and recurrent daily and seasonal uncertainties.

While surveys of canning and preserving have been made in specific States from time to time, no current facts have been available in this period of enactment of new National labor legislation and additional State minimum-wage legislation to guide Federal and State administrators in the application of specific laws to these industries. Maximum-hour and minimum-wage laws for women and minors applicable to canning and preserving have been in effect in some States for more than 20 years. In the last 7 years, however, other States with canning and preserving plants have enacted such legislation. These food industries are included under the old age insurance and unemployment compensation provisions of the Social Security Act of 1935. The Public Contracts Act of 1936 calls for the establishment of a minimum in rates of pay and a maximum in hours of work on Government contracts, many of which include canned and preserved foods. The Fair Labor Standards Act of 1938, regulating wages and hours in industries engaged in interstate commerce, has special provisions relating to these industries.

The Women's Bureau has secured information essential to the application of these several Federal and the various State laws to canning and preserving. This was made possible by the cooperation

of members of the industry and their State and National associations, who gave access to all available essential records. The study, inaugurated in 1938 prior to the enactment of the Fair Labor Standards Act, was supplemented by a follow-up survey in 1939 to secure additional facts pertinent to the interpretation of that act. The survey covered 693 plants, in 19 States, that employed in a maximum month 153,328 persons. These plants canned, preserved, cold-packed, frosted, or dried 40 percent or more of the principal products so preserved in Continental United States. In addition 4 Hawaiian pineapple canneries, employing 12,650 persons, were visited. The detailed presentation of facts concerning the location of canning and preserving plants, the products handled, length of season, numbers employed, peak loads, hours worked, hourly earnings, annual earnings, and labor costs will be found in the body of the report. There is here presented a brief summary of the application of the several Federal and State laws to these industries as revealed by the detailed study of each industry.

THE CANNING OF VEGETABLES AND DECIDUOUS FRUITS

HOOR REGULATIONS

Effect of State Regulation.

State regulation of hours has applied to women and minors in canning plants for a longer time than other wage and hour legislation. While women comprise from about 30 percent to 70 percent of the production staff, depending on the kind of product canned, they are engaged in occupations essential to the continuous performance of canning. Their presence on the canning line is necessary for the operation of the other sections of the line; their hours affect the hours of many men employees.

Canners usually have requested special privileges or complete exemption from State hour laws. Their requests have been based on the perishability of vegetables and fruits and their inability to control crop congestion at the cannery when weather conditions bring the crop suddenly to the perfect canning stage. Though some canners have done much to prevent congestion by staggering the planting time and scattering the fields to avail themselves of different weather conditions, and, when two or more plants are operated by one firm, by distributing produce from the maturing fields to their several plants, all believe that some crop congestion is inevitable.

The survey of employment conditions in 1937, the best canning year for some time, revealed that all seasonal-product canneries have peak loads; that is, weeks in which crops reach the cannery in far greater volume than at other times. As it is the practice to can crops when

perfect, to attain the best quality and to avoid spoilage, heavy deliveries of fruits or vegetables at the cannery bring about the period of peak activity. During 1937 peak operations lasted not more than 4 weeks in the majority of plants, and on the larger number of products they lasted but 2 or 3 weeks.

In the past, States have modified their hour laws for women in several ways to meet this condition. California, Wisconsin, and Arkansas laws have the same basic hours for canning as for other manufacturing industries, but canneries are permitted to employ women longer if they pay overtime for the additional hours. In California the daily hours are 8; over 8 up to 12 hours must be paid for at time and a quarter, and over 12 hours at double time. Wisconsin permits 8 emergency days of 11 hours with a 60-hour week in pea canneries and a day of 10 hours in other canneries, if time and a half is paid for daily hours in excess of 9. In Arkansas overtime may be worked by women if hours of more than 9 a day and 54 a week are paid for at time and a half, the period of overtime being limited to 90 days.

Other States extend the hours that canneries may employ women during specified periods beyond the maximum for other manufacture and do not require overtime rates. In Illinois, with an 8-hour day and a 48-hour week, canneries may operate for 10 hours a day and 60 a week from June 1 to October 15. New York also has an 8-48 hour law, but in canneries a 10-hour day and 60-hour week applies from June 15 to October 15, and permits may be secured to work women 12 hours a day and 66 a week from June 25 to August 5.

Minnesota exempts canneries from the 54-hour law if employment lasts not more than 75 days. Maryland, New Jersey, Ohio, Virginia, and Washington exempt canneries entirely from the State hour laws.

These State hour laws and regulations were in effect before and during the 1938 canning season. The only Federal law affecting hours of employment was the Public Contracts Act, which was confined to firms having Government contracts in excess of \$10,000. Canneries with such contracts may employ people more than 8 hours a day or 40 hours a week on Government contracts only if overtime at not less than one and a half times the regular rate is paid.

While crop and market conditions and certain other influences are factors in determining actual hours of work, the hours of operation in an active week in 1938 reflect to some extent the effects of many years under such laws. The California plan of overtime payment for hours in excess of 48 a week has not limited hours for women to 48, though the largest proportion work less than that; rather it has tended to limit the overtime to within 8 hours a week for all but a proportionately few women. Men's hours are not covered by State

regulation, but the shortening of women's hours has a tendency to lower the proportion of men who work long hours as compared with conditions in States without such regulation.

Wisconsin too requires overtime pay for hours beyond the legal maximum (9 a day and 54 a week), to eliminate over-long hours in canneries. Very few women worked overtime on the State's most important crops in 1938. The hours of many men employees were excessive when the pea crop was canned, due unquestionably to the much larger proportion of men than of women employed in pea canning. In Arkansas, which also regulates hours by extra payments, comparatively few women or men were employed beyond the time at which overtime rates for women begin.

New York and Illinois have extended operating hours for women in canneries to 10 a day and 60 a week, New York allowing 12 hours a day and 66 a week on permit. One result of this type of hour regulation is that New York State vegetable canneries hold the record for the longest hours of employment of women in 1938 among all States reporting. Illinois canneries, however, seldom employed women as long as 60 hours during the season. In States that entirely exempt canneries or are without hour regulations, there was a marked tendency to employ a considerable proportion of women over 48 but under 56 hours and a smaller proportion beyond 56 hours.

The many tables on hours worked in the body of the report and the appendix¹ indicate clearly that State regulations requiring overtime pay for women after 48 or 54 hours are more effective in reducing hours of work for women and for men than is a definite restriction of hours to 60.

Effect of Public Contracts Act.

The payment of overtime rates after 8 hours daily or 40 hours weekly is a provision of the Public Contracts Act for Government contracts of over \$10,000. Because California canners were accustomed to pay higher rates for hours in excess of 8, as were Washington canners through union agreements, and Wisconsin canners for hours in excess of 9, canneries in these three States continued to bid on Government contracts, either directly or through brokers, after the passage of the Public Contracts Act. Reports from other States are that an unwillingness exists among canners to bid for contracts that would bring them under the overtime provisions of the act. Unstandardized Government purchasing practices for subsistence items render it a simple matter to supply canned food to Government agencies and remain outside the present provisions of the Public Contracts Act.

¹ Appendix tables available in the Women's Bureau.

Effect of Fair Labor Standards Act.^a

The Fair Labor Standards Act was in effect during the 1939 canning season but did not apply to canneries in rural communities that were within 10 miles of the fields from which produce was received. While location within an unincorporated community of under 2,500 population (according to the 1930 Census) is definite, relationship to fields from which produce is procured is a variable. The yield in different fields from year to year because of variable weather conditions, differences in market demands, and cannery requirements may cause the distance from cannery to producing fields to change from year to year. This situation, coupled with the belief of canners in incorporated towns adjacent to other canneries in unincorporated areas that the 1939 definition of "area of production" was unfair, threw a cloud of doubt over opinion as to what canneries were covered by the act. According to the data supplied in the 1939 study, about three-fifths were in communities of under 2,500 population, but only one-third were so situated and obtained all produce within 10 miles.

As already stated, the Fair Labor Standards Act permits canneries engaged on perishable or seasonal fresh fruits or vegetables to work 14 weeks of unlimited hours without the payment of overtime rates. As a matter of fact, periods of peak operation are of short duration and seldom exceed 4 weeks, so the period in which long hours are permitted by the act is far beyond the real needs of the canning industry. On the other hand, the peak period of operation results in very long hours for a considerable proportion of the workers on every perishable product in many States. When peas were canned in 1939, hours exceeded 56 for from 7 percent of the workers in Iowa to about 50 percent of those in Minnesota. In tomato and tomato-products canning in 1939 the proportion of workers employed in excess of 56 hours ranged from 5 percent in Arkansas to 47 percent in New York; on corn canning, from 31 percent in Indiana and Minnesota to 56 percent in New York. These figures include canneries within and outside of the areas of production. Division by location of canneries in rural areas or in towns of 2,500 population or more shows little difference in the proportion of workers employed in excess of 56 hours in an active week. In tomato canneries in rural areas, 29 percent of all with hours reported, as compared with 32 percent of those in towns of 2,500 or more, worked in excess of 56 hours. In rural corn canneries 38 percent of the employees, as compared with 35 percent of those in town canneries, worked over 56 hours, whereas in rural pea canneries the proportion with such hours was 43 percent as contrasted with 37 percent in town pea canneries.

^a See note, p. 17.

While prevailing hours in an active week were longer in 1939 than in 1938, the picture of near-peak operations leads to the conclusion that little success has been attained by canneries in keeping operating hours of all workers within 56, in spite of attempts at planting control and present cold-storage facilities.

Long hours of work are sometimes required by a shortage of labor, but in the canneries of every State, on every product, there were many employees who worked under 40 hours in the same week that others worked over 56 hours. The heavy load was carried by only a part of the operating staff. It is a canning practice in almost all plants to hire workers before the crop load arrives and employ them part time, thus insuring an adequate supply of workers for the peak period. There was no indication of any shortage of workers, even for very irregular weeks of employment, though the survey took no accounting of skills required and the availability of skilled workers.

WAGE REGULATIONS

Rates of pay and earnings of cannery employees were influenced by State minimum-wage orders for women in 1938 and by such orders and the Fair Labor Standards Act during the 1939 season. Ten of the States included in the survey have minimum-wage laws, but only States in which the statute has been on the books many years have issued wage orders covering women employed in canneries. These States are Wisconsin, Minnesota, California, Washington, and Arkansas.

Effect of State Minimum-Wage Orders.

Wisconsin and Minnesota minimum-wage commissions provide a fixed minimum rate for experienced women but vary the rate with the size of the community. Other State commissions fix the same rate for all canneries. Both Wisconsin and California orders make provision for piece-rate payments providing such rates yield to half the experienced women the specified minimum time rate in California, and 3 cents more than the time-rate minimum in Wisconsin. In California, canners must elect to operate under the piece-rate system, whereupon their pay rolls are audited each week to insure compliance with the order.

The influence of these State wage orders that have been in effect many years is reflected in hourly earnings for the 1938 season. Though most Wisconsin pea canneries were in the smaller communities, where a minimum wage of 20 cents an hour is required for canneries, relatively few women were paid so little, the prevailing rates in 1938 being 22½ cents and 25 cents. The rate of 22½ cents was the minimum for canneries in larger communities. Nor did Minnesota pea canneries take advantage of lower minimum rates for their rural communities.

Though most of the pea canneries were in communities of under 3,000 population or 3,000 and under 5,000, where the minimum rates fixed were 24 cents and 27 cents an hour, respectively, the larger numbers of women received 25 cents, 30 cents, $32\frac{1}{2}$ cents, or 35 cents an hour. In contrast, pea canneries in New York, a State with a minimum-wage law but with no rates set for canneries in 1938, paid 20 cents or less to 17 percent of the women employed. In Maryland, without a State minimum-wage law, over three-fourths (78 percent) of the women workers on peas had hourly earnings of 20 cents or less.

In California, two-thirds of the canneries elected to operate on the piece-rate system that guarantees that at least 50 percent of the experienced women workers will earn the time-rate minimum of 33 $\frac{1}{3}$ cents or the difference will be divided among all women workers. Many California canneries were union plants in 1938, and their basic minimum rates for women were $42\frac{1}{2}$ cents for time workers and 44 cents for 50 percent of all piece workers. These rates unquestionably raised the level of earnings of California women cannery workers. The effects of the State method of operating a minimum-wage law can be seen clearly in the 1938 earnings distribution. The basic piece-rate system in operation brought about a wide spread in earnings with no concentration at the minimum time or basic piece rate. Ten percent of the women employed on large fruits and 12 percent of those on tomatoes earned less than the minimum rate of 33 $\frac{1}{3}$ cents an hour. Some of these women were especially licensed handicapped workers and learners, but others were women who could not make the State minimum at prevailing piece rates. At the other end of the earnings scale, over 25 percent of the women earned $42\frac{1}{2}$ cents to 44 cents in preparing large fruits, and 30 percent earned such amounts on tomatoes. As many as 20 percent earned at least 53 cents an hour on large fruits.

All wage data assembled in the detailed report reveal that State minimum-wage orders for women workers have raised materially the level of earnings of women cannery employees above that in States without such orders.

When orders fix a flat minimum time rate for all experienced women workers in canneries, such orders set a bottom below which wages do not fall and above which wages rise for large occupational groups rather than individuals, as conditions warrant. The piece-rate system with a guarantee of a basic rate to at least 50 percent of the workers permits a higher basic rate than can be secured on the flat-rate basis but does not operate to set a bottom below which earnings cannot fall. Rather it serves to protect all women from piece rates too low to yield fair amounts to the woman of average speed, and it continues the wide spread in earnings that differences in operating abilities of workers bring about. The relative expenditure for the labor of women and

men in California canneries exceeds that in canneries putting up the same products in other States.

Effect of Fair Labor Standards Act.^a

The Fair Labor Standards Act was in effect in the case of all canneries outside the "area of production" in the season of 1939. According to its provisions all workers, regardless of sex, were to be paid at least 25 cents an hour if the cannery was in a community of 2,500 or more population and was more than 10 miles from the fields where the produce was secured.

The immediate effect of this act was to decrease the numbers of workers earning under 25 cents an hour and to raise slightly the total amount paid out to workers.

In the same tomato-canning firms in Indiana the wage bill for 1939 was greater by about 4 percent than that for 1938 and the number of workers earning under 25 cents decreased from 14 percent to 5 percent. In Maryland tomato canneries the proportion earning under 25 cents was reduced from 51 percent to 29 percent and the wage bill was raised by 5 percent. In Illinois the change was from 17 percent to 12 percent earning under 25 cents on tomatoes. In both New York and Wisconsin, while 19 percent and 43 percent, respectively, earned less than 25 cents on tomatoes in 1938, in 1939 almost no one earned less than 25 cents. Corresponding decreases occurred on other products and in various States.

Unaffected by the act were canneries in communities of under 2,500 that stated they secured all their produce from a distance of not more than 10 miles. Over 90 percent of all employees in Arkansas and Virginia tomato canneries earned less than the minimum, and almost three-fourths of those in Texas did so, though most Texas canneries were outside the area of production as defined by the Administrator. Forty-seven percent of Maryland tomato workers in towns of under 2,500 earned less than 25 cents, though in this State, too, not all canneries secured their tomatoes solely within a 10-mile radius.

Canneries paying more than the minimum rate set by the Fair Labor Standards Act did not reduce rates whether or not they came under the wage provisions of the act. As a result, wide variations still occur in the amount paid to workers canning the same product in different States.

On tomatoes and tomato products processed inside the area of production the range in average earnings of the workers in 1939 was from 15.5 cents an hour in Arkansas to 30.3 cents in Illinois. In plants outside the production area the range was from 21.2 cents in Texas

^a See note, p. 17.

tomato canneries to 47.3 cents in California tomato canneries. On corn canning the range of earnings as between States and between canneries included and excluded by the act was narrow. But on peas, in canneries outside the provisions of the act, average hourly earnings ranged from about 14 cents in Virginia to about 50 cents in Washington. In pea canneries within the coverage of the act the rates varied from nearly 26 cents in Arkansas and Virginia, and 27 cents in Maryland, to more than 44 cents in Washington. On green and wax beans, canneries that come under the act paid rates yielding average earnings of 20 cents in Texas, approximately 25 cents in Arkansas, Illinois, and Maryland, and over 46 cents in California and Washington.

Competition is possible under such variations in wages partly because of differences in plant efficiency and in product quality, but also because labor costs are only a small part of total operating costs in vegetable canning. The relation of labor costs to total costs varies not with size of community nor with the low- or high-wage levels of States but between canneries in the same State. In spite of variations there is a marked tendency for this cost relation on the same product to mass at about similar proportions in many canneries. For example, on tomatoes and tomato products, labor costs frequently were between 9 percent and 12 percent of total costs; in Wisconsin pea canneries the labor costs usually were from 8 percent to 12 percent of the total; on corn, concentration was at 10 percent but under 12 percent of total costs. Labor costs on canning small fruits usually were low, but California labor costs on large fruits often approximated 25 percent of total costs.

While data on 1939 labor costs were limited, as books had not been closed at the time the plants were visited, the indications are that there was no general increase over 1938 in the proportion labor costs were of total costs.

For the 1940 canning season there is required by the Fair Labor Standards Act an advance in the minimum rate for all workers outside the area of production from 25 cents to 30 cents an hour. This advance will increase the rates for a material proportion of cannery workers in all States but California, Oregon, and Washington, in which State wage orders have set minimums of respectively 33½ cents, 35 cents, and 37½ cents an hour.

UNEMPLOYMENT COMPENSATION LAWS

Unemployment compensation laws in the 13 canning States included in the 1938 survey vary widely as to employer coverage, employee-eligibility requirements, and methods of determining the amounts of benefit payments. Five States included have special provisions for seasonal employment that affect the canning industry. In addition,

Wisconsin disqualifies individuals employed solely within the active canning season by an employer engaged in canning fresh perishable fruits and vegetables.

Employer coverage is based either on the number of weeks in which a specific number of workers are employed or on the numbers employed. As of December 1939, nine States based employer coverage on employment varying from one or more to eight or more persons in each of 20 weeks. Wisconsin employers were covered when they employed six or more workers in each of 18 weeks, Iowa employers eight or more workers in each of 15 weeks, while the New York law includes all employers of four or more persons on each of 15 days. The Ohio law covers any employer giving work to three or more persons for any length of time. Under these laws, 32 percent of Iowa canners reporting in the survey, 33 percent of those in Virginia, 55 percent in Maryland, 56 percent in Indiana, 70 percent in Wisconsin, 83 percent in Illinois, 92 percent in California, and 100 percent in the six other States were included under existing State unemployment compensation laws.

Minnesota, New York, Ohio, Virginia, and Washington make special provisions for seasonal workers, but they define such workers variously. These provisions usually limit unemployment benefits to the seasonal period of operation.

Employee eligibility for unemployment benefits is determined in all 13 States on one of two bases: Either the wages received in some specified past period, as a multiple of the weekly benefit amount or a flat amount, or the duration of employment. According to records made available in the survey the proportion of workers covered is as varied as the proportion of canners. For example, only 7 percent of the workers employed during the year in Illinois canneries were eligible, though 83 percent of the firms had been covered, as compared with 25 percent of the employees in Washington.

The fact that almost two-thirds of the more than 161,000 cannery workers reporting weeks worked in 1937 were employed less than 8 weeks makes very difficult the application of unemployment compensation laws to cannery workers as such. While many men employees had work elsewhere during the year, their chief employment was on farms or at odd jobs in the towns. As the principal source of the woman labor supply was the town, village, or farm housewife and her daughter, employment opportunities in other fields for these women necessarily were limited.

COLD-PACKED AND FROSTED FRUITS AND VEGETABLES

Cold-packed fruits for use of jam and preserve manufacturers, pie bakers, ice-cream makers, and soda-fountain supply houses com-

prised less than 1 percent of the total value of all canned and preserved fruits and vegetables, according to the 1937 Census. While some firms engage solely in this type of preserving for wholesale consumption, other firms do cold preserving with other canning operations or as a part of fresh-fruit packing or apple evaporating.

Frosted fruits and vegetables, that is, produce frozen quickly at temperatures from zero to 50 degrees below to preserve their original fresh condition and packaged for the retail market, constituted less than 1 percent of the total value of all canned and preserved products in 1937 but have increased materially in volume and value in the last few years. Today canners perform all preparation and freezing operations, so these products have become a part of the canning industry, though in many cases they are marketed by firms holding the quick-freeze patents.

The processes of preparing a fruit or vegetable for preserving by cold are the same as those used in preparing the specific product for canning. Canners today prepare all the frosted fruits and vegetables and part of those that are cold packed. Just as the States of Washington and Oregon, the most important producers of cold-packed and frosted fruits and vegetables, include plants making these products with canneries under their respective State minimum-wage laws, so Federal labor legislation may be considered as having the same general application to plants engaging in preserving fruits and vegetables by cold as to canneries preserving foods by means of heat. Attention need only be called to the fact that every effort is exerted to quick-freeze berries, peas, and other perishable foods as soon as possible after packing, and this has a tendency to increase the numbers working long hours for the brief freezing period.

The two leading Northwestern States were not affected by the 25-cent minimum of the Fair Labor Standards Act in 1939, and will be unaffected by the 30-cent minimum in 1940, as their State minimum-wage rates are higher than these amounts. With one exception, in other States the concentration of earnings at 25 cents an hour in 1939 would appear indicative of Fair Labor Standards Act influence.

THE CITRUS-CANNING INDUSTRY

Conditions surrounding the citrus-canning industry are markedly different from those affecting deciduous-fruit canning. Citrus fruit and juice canning is highly centralized; by far the largest volume is done in limited areas in Florida, Texas, and California. Its operations cover an extended period of each year. In Florida the canning period runs from December to July, with possibly a month's variation at either end in different years; in 1939 the average period of canning

was 30 weeks. The season is shorter in Texas, generally from January to April or May; in 1939 it averaged 16 weeks in the canneries reporting. California, whose canned citrus production is but 10 percent of the total, operates on citrus juices the year around.

Oranges and grapefruit may be stored on the trees, weather permitting. As culls are largely used for canning, their arrival at the cannery may be regulated in relation to plant capacity. Though a seasonal industry, citrus canning can be operated without peak loads under normal weather conditions.

State hour or minimum-wage regulations have had little part in determining labor conditions in the citrus-canning industry. Florida, the most important citrus-canning State, has no State hour or wage law. Texas has a 54-hour law applicable to women, with provision for longer hours, at double the rate, in "extraordinary emergencies"; however, as Texas canneries put up juices primarily, on which men only are employed as productive workers, the women in Texas citrus plants are few. California has had wage and hour laws for women for many years, but her canned citrus production is largely lemon and orange juice, and women are employed, in small numbers only, on packaging by-products.

In the main, therefore, the Fair Labor Standards Act was the first wage and hour regulatory measure applicable to the citrus-canning industry.

EFFECTS OF THE FAIR LABOR STANDARDS ACT^a

Citrus canneries in Florida and Texas included in the survey were situated almost equally in rural communities and in incorporated towns of 2,500 population and over, while all California plants were in incorporated areas. However, only a fourth of the canneries in rural areas secured all their citrus fruit in the "immediate locality"; that is, not more than 10 miles from the cannery. Consequently, most of the citrus plants surveyed were subject to the Fair Labor Standards Act in their 1939 season.

Hour Regulations.

According to the act, canneries outside the area of production are exempt from the hours restriction for a period of 14 weeks, during which they need not pay overtime rates. In a sample period of active operation in citrus-juice plants, almost two-fifths of the employees worked in excess of 56 hours. The overtime was most general in Texas, where almost half the workers were employed over 56 hours. In Florida the proportion was two-fifths, and in California it was but one-sixth of the total. While overtime was being worked by some employees, as many as 31 percent worked less than 40 hours. Men

^a See note, p. 17.

are used almost entirely in these plants to handle large quantities of fruit, tend the juicing machines, truck the cars, and dispose of the peel.

In plants canning only citrus-fruit sections, large numbers of women are employed to do the hand operations of cutting segments apart and placing them in cans. In these plants the proportion employed over 56 hours was 14 percent in Florida and 36 percent in Texas. Where firms in Florida canned both sections and juice, 24 percent of all employees worked over 56 hours in an active canning week, though about a fourth of the employees worked under 40 hours in the same week.

Hours worked did not depend on the size of the community in which the plant was situated. In Florida a far larger proportion of workers were employed over 56 hours in rural citrus-juice plants than in plants in towns of 2,500 or more. There was little difference in the hours worked in rural areas and in towns in Florida plants canning citrus-fruit sections.

In the 45 citrus plants included in the survey there were only 3, all in Texas, that employed no one over 56 hours in the 1939 season. Two California plants paid on a semimonthly basis, making it impossible to determine weekly overtime. In the 36 citrus canneries covered by the Fair Labor Standards Act and in which people were employed over 56 hours in the active week surveyed, 2 Florida and 2 California firms paid time and a half for work in excess of 44 hours, 4 Texas firms paid time and a half for work in excess of 56 hours, and 28 firms paid no higher rate for overtime work.

Wage Regulations.

The Fair Labor Standards Act brought about a marked concentration of earnings at the 25-cent minimum in citrus-fruit plants, juice plants, and plants canning both products. However, a sixth of the workers on citrus fruit and one-fifth of those on citrus fruit and juice in Florida canneries in towns of 2,500 and over did not earn the minimum, and three-tenths of the workers in rural Texas juice canneries subject to the act earned less than the 25-cent rate. Most of the workers earning under 25 cents in Florida canneries were women, whereas in Texas practically all paid such amounts were men. In California earnings began at 25 cents; the few women employees earned 35 cents or more, whereas the larger number of men employed earned at least 40 cents.

The proportion of workers in the plants reporting whose earnings would be raised in the 1940 season to the 30-cent minimum of the Fair Labor Standards Act would be about 55 percent in citrus-juice plants, 63 percent in fruit canneries, and 70 percent in canneries putting up both juice and fruit.

THE DRIED-FRUIT INDUSTRY

The dried-fruit industry is concerned with the recleaning, processing, and packaging of sun-dried fruit delivered to the packing house and with the preparing and evaporating of fresh apples at the packing house. While its raw materials are seasonal and must be cleaned before spoilage takes place, the urgency that controls the canning and freezing of fruit is not a factor in packaging products already dried or in preparing apples for evaporation. Without peak load there is no short period of peak operation as in canning, though there is a busy fall period with pay-roll increases for from 5 to 8 weeks.

California plants that pack many kinds of dried fruit operate the greater part of the year; others pack a few varieties for a short period only. In New York the apple-evaporating season runs from August into December, in Washington from the middle of October to April. No plant reporting operated less than 10 weeks, and the majority in California packed for three-fourths of the year or longer.

HOUR REGULATIONS

Effect of State Hour Laws.

State hour regulations for women and minors have been applicable to California dried-fruit packing for many years. In Washington employees are exempt from the State maximum-hour law, but a wage regulation requires the payment of overtime after 10 hours of work. New York evaporated-apple plants are believed subject to the State's 8-48 hour law, as no special exemption is granted them in the law.

The effect of these State regulations is seen clearly in the dried-fruit industry. During an active week in the fall of 1938 nearly 70 percent of the women employees in reporting plants in California worked less than 48 hours, and 2 percent worked over 48 hours. In New York the hours for most women fell between 44 and 48. However, in Washington 39 percent of the women employees worked in excess of 48 hours, but under 56, in an active packing week.

Effect of Fair Labor Standards Act.

The Administrator of the Fair Labor Standards Act defines as seasonal industries those "handling, extracting, or processing of materials during a season or seasons occurring in regularly, annually recurring part or parts of the year" and producing "50 percent or more of their annual output in a period or periods amounting in the aggregate to not more than 14 workweeks."² Such industries may employ workers 12 hours a day and 56 hours a week, after which over-

² Since this report went to press, this amendment was revised to read "receives for packing or storing 50 percent or more of the annual volume in a period or periods amounting in the aggregate to not more than 14 workweeks."

time rates must be paid. While weekly production records were not available for all plants, California's dried-fruit-plant pay rolls indicate that 20 of the 27 plants reporting paid out half their labor bill in 14 weeks, the remaining 7 paying from 40 percent to 48 percent in such period. It would appear, then, that the majority of California dried-fruit plants would be considered seasonal under the definition just cited. All plants receiving fresh apples for evaporation would be subject to the same provisions as canning plants, that is, by total exemption from the Wage and Hour Law if within the "area of production" or by exemption during 14 weeks from the maximum-hours and overtime-pay provisions of the act.

A comparison of the number of employees who worked specific hours in 1938 and 1939 was made for dried-fruit plants. The proportion working over 56 hours in California houses was reduced from 12 percent in 1938 to 3 percent in 1939; the number of employees in California plants working over 44 hours was reduced from 64 percent in 1938 to 12 percent in 1939. In Washington apple-evaporating plants, 8 percent worked over 56 hours in 1939 as against 15 percent in 1938. New York firms employed 11 percent in 1939, in contrast to 20 percent in 1938, more than 56 hours a week.

WAGE REGULATIONS

Effect of State Minimum-Wage Regulations.

The California minimum-wage rate is 33½ cents an hour for experienced women and minors; 4 weeks are allowed in which to become experienced. The Washington minimum-wage rate is 27½ cents. New York's Industrial Commission has not as yet set a rate for dried-fruit plants.

About one-eighth of the women in California dried-fruit plants earned exactly the State minimum of 33½ cents an hour. Only 2 percent earned smaller amounts and three-fourths earned 40 cents and over. In Washington there was no concentration at the State minimum; women employees earned from under 10 cents to 50 cents an hour. Practically all women whose earnings were reported in New York evaporated-apple plants earned 25 cents an hour in 1938.

Effect of Fair Labor Standards Act.

The State minimum-wage rate and union agreements in effect in California called for higher wage rates in 1939 than those required by the Fair Labor Standards Act. Practically all employees in California packing houses continued to earn more than 30 cents an hour, almost three-fifths receiving 50 cents or more. In Washington's rural apple plants more than one-fourth of the workers earned less than 30 cents, and 8 percent earned even less than 25 cents. Plants

in towns of 2,500 population and over in Washington paid more than three-fifths of their workers 30 to 35 cents an hour; no one in town plants received under 30 cents. Practically all New York plants were in rural communities. About one-eighth of their employees earned under 25 cents an hour, and more than seven-tenths earned exactly 25 cents, in the 1939 season.

UNEMPLOYMENT COMPENSATION

The widely differing employer-coverage provisions in the unemployment compensation laws of California, New York, and Washington result in complete coverage of the evaporated-fruit plants in New York, almost complete coverage of all in California, and two-thirds coverage of those in Washington. New York and Washington have special provisions for seasonal industries and workers. In New York a seasonal worker, defined as one ordinarily engaged in a seasonal industry and not engaged in any other work, is entitled to unemployment compensation during only the longest seasonal periods of operation, and duration of benefits is modified in proportion to the longest seasonal periods. In Washington a seasonal worker, defined as one who has a base year credit of which at least 80 percent has been earned in seasonal employment, is entitled to benefits only during the seasonal period of operation.

Employee eligibility is determined in California and Washington on a flat amount that must have been earned during the four quarters preceding the benefit period; in New York, on 25 times the weekly benefit earned in the calendar year. If all California dried-fruit plants were included under the law, only 31 percent of their employees had sufficient year's earnings to entitle them to coverage. Had there been complete coverage of employers in Washington, there would have been but 38 percent coverage of employees. Available data do not permit determination of the New York employee coverage.

THE HAWAIIAN PINEAPPLE-CANNING INDUSTRY

Hawaii has seven pineapple canneries, three of which pack about 80 percent of the output. A recent survey covered conditions in two large and two small plants, respectively in a city and in a small rural community. All were operating under the terms of the Fair Labor Standards Act.

From the end of June to the middle of August, Hawaiian pineapple canneries operate with two and three shifts a day. While peak and near-peak employment occurred in 8 weeks in 1938, the pay rolls were below 50 percent of the maximum in 42 weeks, in practically all of these less than 25 percent of the maximum.

The work plan of all canneries is based on an 8-hour day for 5 days a week, with 4 hours on Saturday, or 44 hours a week in conformity with the Fair Labor Standards Act. During a week in the heaviest canning period of the 1939 season, 24 percent of the women and 57 percent of the men in the cannery departments worked more than scheduled hours; in the warehouse about 20 percent of the men and 3 percent of the women worked more than 44 hours. Even in this peak week, however, a material proportion of the employees worked under 40 hours.

In the Honolulu canneries the minimum hourly rate for women was 30 cents, for men 37.5 cents; in the Maui canneries it was 26 cents for women, 32.5 cents for men. As an actual condition, one-seventh of all the women whose earnings were reported were paid less than 30 cents an hour, though very few men earned such amounts in the 1939 season. Women's earnings were concentrated at 30 and under 35 cents, while over 70 percent of the men earned 35 and under 45 cents. Time over 44 hours usually was paid for at time and a half and double time.

NOTE.—The statistical data contained in this report were transmitted to the Wage and Hour Division of the Department of Labor in January 1940. The Division held public hearings on its regulation concerning "area of production" as stated in section 536, 2 (d) of part 536 of the Administrator's regulations and as described in the text of this report. On July 24 the Administrator of the Wage and Hour Division withdrew this regulation and redefined "area of production" for fresh fruit and vegetable handling and first processing. Under the new definition, effective October 1, 1940, "establishments having 10 or fewer employees and obtaining their fruits and vegetables from farms in the vicinity" are within the area of production and thereby exempt from the wage and hour provisions of the Fair Labor Standards Act.

APPLICATION OF LABOR LEGISLATION TO THE FRUIT AND VEGETABLE CANNING AND PRESERVING INDUSTRIES

SCOPE OF SURVEY

In order that the 1938 survey of the canning and dried-fruit packing industries might serve the several purposes for which it was intended, the study was planned to secure data from a representative proportion of plants producing the major food products purchased by the United States Government, which are also the major canned or dried vegetables, deciduous fruits, or other preserved food products purchased by the public at large. Because plants producing major products also canned or dried other fruits or vegetables, the list of products included in the survey is long.

The first survey, made in 1938, was confined to the 13 States whose canned or dried product comprised two-thirds or more of the same major product for the entire country. These States are California, Illinois, Indiana, Iowa, Maryland, Minnesota, New Jersey, New York, Ohio, Pennsylvania, Virginia, Washington, and Wisconsin.

The supplemental survey of 1939 added Arkansas, Florida, and Texas to the State coverage of canned vegetables. Also included in this survey were citrus fruit and juice canneries in Florida, Texas, and California, and plants engaged primarily in the cold-packing or freezing of fruits and vegetables. Hawaiian pineapple canneries were covered in a survey of Hawaiian industries in general.

PRODUCT COVERAGE

Not all plants in the States chosen for study were included. The surveys covered 693 plants in Continental United States and 4 plants in Hawaii.¹ The 1938 survey was so planned that field investigators visited each State at the maturity of the State's most important canning crop. As a consequence, 1938 data were secured from a larger proportion of plants canning the major product in each State than from plants canning the State's minor products either earlier or later in the year. The supplemental survey, in October, November, and December 1939, was made after most of the seasonal vegetable and deciduous fruit plants had ceased canning; consequently,

¹ The 4 Hawaiian canneries are considered separately (see p. 149) and are not included in the body of this report.

the season's data were available for all plants included in the 1938 survey that operated in 1939. Because a material number did not operate in 1939, or operated on fewer products than in 1938, some new firms were added in order to make the 1939 sample adequate.

The canneries included produced, in number of cases, 46½ percent of the canned-tomato pack of the entire country in 1937, 42 percent of the corn pack, and 40 percent of the pea pack. These were the three principal fresh vegetables canned in the United States. In addition, the survey included plants canning 43 percent of all the beets, 39 percent of the kraut and juice, and large proportions of other seasonal and nonseasonal vegetables. Plants canning in the aggregate 50 percent or more of the peach, apricot, and grape-juice pack of the country in 1937 were surveyed, and the 1939 coverage of citrus juices was almost three-fourths, the coverage of citrus fruits about one-fourth, of the 1937 census-recorded pack.

The coverage of dried prunes, peaches, apricots, and raisins, in number of pounds, exceeded 40 percent of the country's production in 1937. Evaporated apple coverage was less, 30 percent, in 1938; but it was almost 50 percent in 1939. As the census gives figures for cold-pack and frozen vegetables and fruits in money value only, the survey's coverage of these cannot be stated, but 55 plants were included in 1939.

The products canned or dried by the plants included in the survey are listed in table I.² All these products were prepared in canneries or dried-fruit plants; none were produced primarily in plants engaged solely in the manufacture of spaghetti or other nonseasonal vegetables.

PLANT AND EMPLOYEE COVERAGE

Of the 693 canneries and dried-fruit-packing plants covered in the surveys, 394 were the sole plants operated by their respective firms, the remaining 299 were operated by only 99 firms. The latter were so selected as to provide a representative sample of the canneries operated by each of these firms.

Because of the wide variation from month to month in the numbers employed in canneries, averages have little or no significance. The maximum number of wage earners in any one month, as shown by the census of 1937, was 317,326; the maximum number employed by the firms scheduled was 153,328, or 48 percent of the number reported by the census. A small number of office workers and of employees solely in maintenance jobs were not included in the 1938 study but were included in that of 1939.

² Table does not include the following products, because the census did not give them by cases packed: Pickles, vinegar, mustard, horseradish, mayonnaise, sauces, salad dressing, sandwich spread, Sicilian and Greek and unripe olives, olive oil, relish, tamales, mincemeat, pudding, maraschino cherries, preserves, jams, jellies, apple butter, and peanut butter.

TABLE I.—Amount of products canned or preserved in 1937 and amount produced by plants included in 1938 and 1939 surveys

Product	Total pack in 1937 ¹	Total pack in plants included in surveys ²	
		Amount produced	Percent of total
Vegetables and soups.....	Cases 200,092,153	Cases § 75,632,640	37.8
Tomatoes and tomato products.....	55,097,095	25,630,169	46.5
Corn.....	26,052,452	10,940,734	42.0
Peas.....	24,412,350	9,692,279	39.7
Beans:			
Green and wax pod.....	9,791,734	3,275,102	33.4
Lima, fresh.....	2,248,407	479,671	21.3
Kidney and other.....	4,276,060	1,185,062	27.7
Pork and beans; baked beans.....	18,352,047	4,791,623	26.1
Spinach.....	5,433,876	2,518,188	46.3
Asparagus.....	2,753,876	1,368,931	49.7
Beets.....	3,386,362	1,467,362	43.3
Carrots.....	1,505,273	481,314	32.0
Hominy.....	1,645,852	362,627	22.0
Kraut and juice.....	4,816,559	4 1,872,082	38.9
Pimento.....	626,205	186,614	29.8
Pumpkin and squash.....	1,726,562	462,985	26.8
Spaghetti.....	5,453,692	1,719,523	31.5
Other vegetables.....	11,815,083	2,007,681	17.0
Canned soups.....	20,698,668	7,190,793	34.7
Fruits and fruit juices.....	63,764,485	§ 29,203,522	45.8
Peaches.....	13,596,062	6,757,532	49.7
Pears.....	5,166,106	1,669,678	32.3
Apricots.....	5,806,377	3,142,452	54.1
Apples.....	2,772,427	892,540	32.2
Cherries.....	2,839,635	590,009	20.8
Berries.....	3,369,265	541,363	16.1
Prunes.....	1,825,759	202,930	11.1
Plums.....	292,720	100,019	34.1
Applesauce.....	3,348,405	1,071,929	32.0
Grape juice.....	1,669,419	847,821	50.8
Citrus juice ⁶	11,018,957	8,245,564	74.8
Citrus fruits.....	4,927,970	1,286,736	26.1
Olives.....	1,152,132	846,943	73.5
Other products.....	5,979,251	3,008,006	50.3
Dried fruits.....	Pounds 1,160,489,002	Pounds 7 723,005,697	62.3
Apples.....	63,934,564	19,289,753	30.2
Apricots.....	70,643,022	36,713,174	52.0
Figs.....	53,517,429	8,695,753	16.2
Peaches.....	57,929,527	25,775,173	44.5
Pears.....	10,771,060	3,415,287	31.7
Prunes.....	441,777,393	8 185,039,057	41.8
Raisins.....	449,203,309	292,171,988	65.0
Other.....	12,712,698	18,264,565	143.6
Dried fruits not specified.....		9 133,640,947	

¹ U. S. Census of Manufactures, 1937.² Excludes cold-packed and frozen vegetables and fruit plants. See p. 125.³ 14 canneries packing 1 or more vegetables did not report amount of pack. Nor are there included cases of products for which the census gives money value only.⁴ Bulk kraut not included.⁵ 7 firms did not report pack.⁶ Includes small amount of other juices.⁷ 4 firms did not report pack.⁸ Excludes 23,318 cases, number of pounds not reported.⁹ 10 firms reported amount of all types of dried fruit combined.

Table II shows the number of plants and of employees in the month of maximum employment, in each State covered by the surveys, compared with the 1937 census report on these States. While the proportion of employees covered in California is larger than that shown by the census, this is due to the larger proportion of dried-fruit pack covered in the State, California's representation in each canned product being closely related to the census proportion. Indiana, however, has a larger proportionate representation than the census, due to a large coverage on the tomato pack.

TABLE II.—*Number of plants and of employees in vegetable and fruit canning and preserving in 1937 and number included in 1938 and 1939 surveys, by State*

State	Total in United States ¹				Total included in surveys			
	Plants		Employees in maximum month		Plants		Employees in maximum month	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total.....	2,772	100.0	² 317,326	100.0	³ 4,693	100.0	⁴ 153,328	100.0
Arkansas.....	82	3.0	5,733	1.8	33	4.8	2,841	1.9
California.....	406	14.6	81,029	25.5	112	16.1	45,633	30.4
Florida.....	62	2.2	9,529	3.0	25	3.6	5,190	3.5
Illinois.....	107	3.9	17,488	5.5	41	5.9	7,662	5.1
Indiana.....	189	6.8	30,514	9.6	74	10.6	18,306	12.2
Iowa.....	60	2.2	9,009	2.8	28	4.0	4,275	2.8
Maryland.....	221	8.0	25,646	8.1	77	11.1	9,909	6.6
Michigan.....	74	2.7	9,214	2.9	8	1.2	1,334	.9
Minnesota.....	44	1.6	11,022	3.5	17	2.5	6,885	4.6
New Jersey and Pennsylvania.....	141	5.1	19,525	6.2	8	1.2	9,299	4.2
New York.....	234	8.4	20,631	6.5	88	12.7	12,467	8.3
Ohio.....	115	4.1	10,032	3.2	15	2.2	2,613	1.7
Oregon.....	69	2.5	14,397	4.5	6	.9	1,743	1.2
Texas.....	75	2.7	5,412	1.7	25	3.6	3,553	2.4
Virginia.....	120	4.3	9,320	2.9	35	5.1	3,491	2.3
Washington.....	87	3.1	11,158	3.5	31	4.5	7,545	5.0
Wisconsin.....	169	6.1	23,664	7.5	69	9.9	10,307	6.9
All other.....	517	18.7	47,865	15.1				

¹ U. S. Census of Manufactures, 1937.

² Month of maximum employment varied in different States; maximum for United States is not the total of numbers shown for States.

³ Includes 10 not reporting number of employees.

⁴ Tennessee included in total; not shown separately.

INFORMATION SECURED

The information presented in this study is from plant records of the years 1937, 1938, and 1939. When agents of the Women's Bureau visited several hundred canneries in 13 States in 1938—their visits so planned as to coincide in each case with the maturity of the State's most important canning crop—they copied, with the courteous cooperation of the management, the pay-roll record for a recent active week of hours worked and earnings received by each employee, by sex and occupation. In addition they secured from the previous year's records the numbers of employees and the total amounts paid in wages, week by week; and for the year as a whole the total output of each product, the period over which each product was canned, and the number of days on which actual canning was done. It had been planned to get, for each week, the total pack and the man-hours, but this was found too time-consuming. Also supplied by the

management were the 1937 data compiled for social-security purposes, showing the weeks worked and the total earnings in the year of each person employed in 1937, by sex and occupation.

In the follow-up visits made in 1939 to the same plants, an active week's pay roll from recent records was copied. There were requested, also, the total output, canning period, and number of canning days, by product, in 1938; and for all 3 years—1937, 1938, and 1939—the total labor costs and total operating costs. To compensate for plants not canning in 1939, a few plants not visited before were scheduled and a week's pay-roll record was copied. Further, in 1939 Florida, Arkansas, and Texas were added to the State coverage of canned vegetables,³ as already mentioned; and citrus fruit and juice canning and cold-packing and freezing were added to the branches of industry covered.

In all plants the source of seasonal labor supply was inquired into, as were facts concerning any other businesses of independent canners and the amount of trade-union organization in the plants. In the 1938 survey, questions were asked concerning Government contracts secured since January 1936. In 1939 particular stress was laid on the plant location; that is, whether the physical plant was within a town of specified size or an unincorporated area. Inquiry was made also concerning the distance of the canning plant from sources of supply of fruits and vegetables.⁴

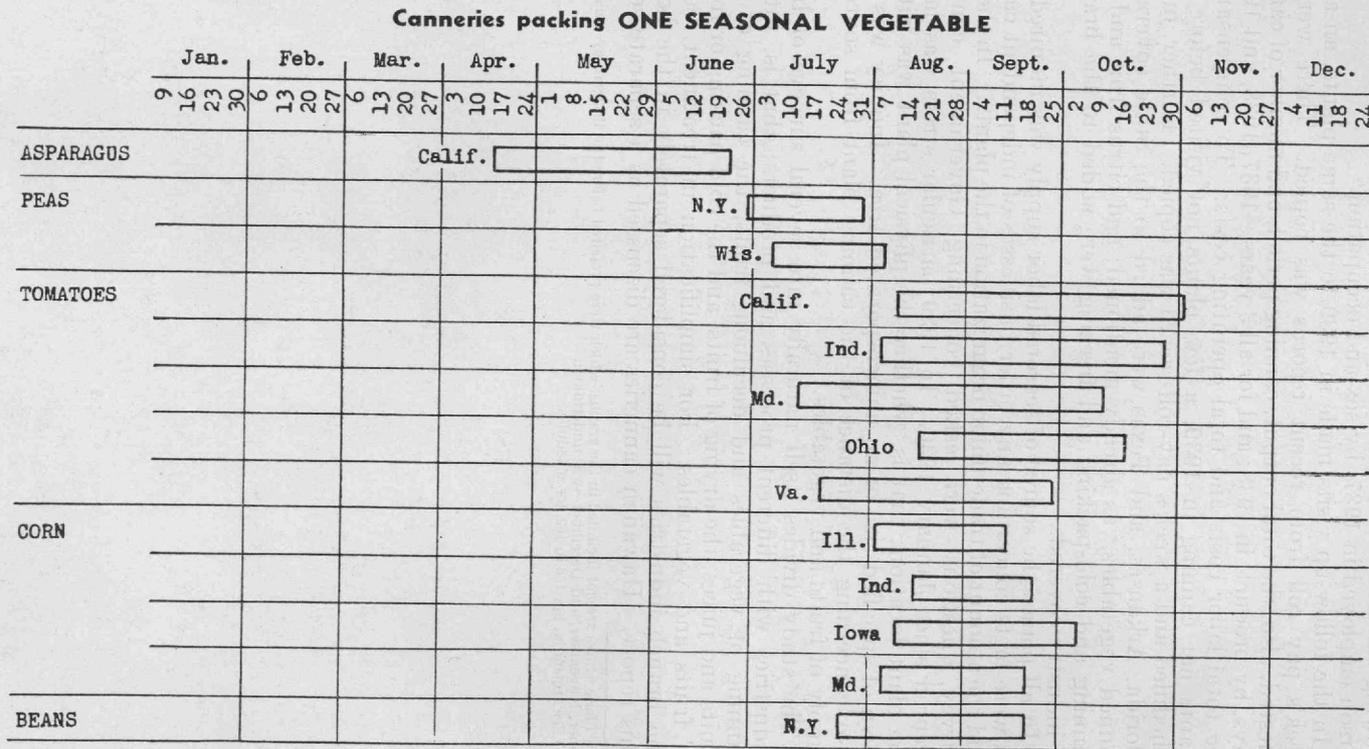
The study divides itself naturally into several surveys of branch industries with different processes and products; that is, into the canning of vegetables and deciduous fruits, the canning of citrus fruits and juices, the drying of fruits, and the cold packing or freezing of fruits and vegetables. For simplification in treatment, each of the branch industries will be considered separately in the body of this report. Hawaiian canneries are discussed as a separate section.

³ These States are not included in the graphs, which were prepared before the 1939 survey—made in October, November, and December—was undertaken.

⁴ See appendix, pp. 156 to 162, for schedules.

Chart I-A.—Period Over Which Specified Products Were Canned in Principal Canning States, 1937

[Each bar indicates dates on which canning began and ended in a State; as different canneries began and ended on different dates, the over-all period is longer than that during which any individual plant canned.]



THE CANNING OF VEGETABLES AND DECIDUOUS FRUITS

PRODUCTS CANNED

Of the 580 plants canning vegetables and deciduous fruits, about 3 in 10 (32 percent) canned one seasonal vegetable only. Tomatoes and seasonal tomato products were not only canned in largest volume but were the product canned by the most plants among those canning only one vegetable. This is due to the wide area in which tomatoes for canning are grown, as well as to the extensive consumer demand for canned-tomato products. Relatively few canners operated solely on corn, or on peas, beans, or asparagus.

More than 10 percent of the plants extended the period of operation by canning two seasonal vegetables, the most usual combinations being peas and corn, peas and beans, peas and tomatoes, corn and tomatoes; or asparagus and corn, asparagus and tomatoes; or beans with corn or with tomatoes. Relatively few canners put up three or more seasonal vegetables. In Illinois and Maryland, peas, beans, tomatoes, and corn formed a usual combination in the three-or-more-vegetable canning plants. In New York, broccoli and asparagus were added to these, and in California spinach was substituted for broccoli.

Only 3 percent of the plants surveyed canned seasonal fruits only. Fruit cocktail and fruit salad are considered seasonal-fruit combinations, primarily because they are more generally put up in the peach-pear season than later, though they can be put up at any time in the year. Seasonal fruits and seasonal vegetables were canned by only 6 percent of the plants scheduled.

For the purposes of this study the Bureau adopted the definition of "seasonal products" appearing in the N. R. A. code for the canning industry. This definition is as follows: "The term 'seasonal product' means and includes all fruits and vegetables which are required in a fresh condition for packing, and which after reaching proper canning maturity or being harvested or taken would not deteriorate in quality, grade, or suitability for packing in such required fresh condition within 48 hours."⁵

Beets, carrots, pumpkins, sweet potatoes, kraut, and pickles are considered nonseasonal fresh vegetables in this study. Seven percent of the plants included packed nonseasonal vegetables only. Other nonseasonal products packed by canning plants were dried beans of many varieties, hominy, spaghetti, and similar products. Plants packing only nonseasonal products of such types were not included in this survey. Jams, jellies, preserves, and grape juices, considered nonseasonal fruit products, were made by about 5 percent of the plants scheduled. Olives were canned or bottled by 13 plants covered.

The second largest number of canneries in the survey put up both seasonal and nonseasonal fruit and vegetables of many kinds. The 32

⁵ National Recovery Administration. Code of Fair Competition for the Canning Industry. Sec. 7, p. 33. 1934.

percent just reported as canning one seasonal vegetable only are followed closely by the almost 30 percent canning many products of a seasonal and nonseasonal nature.

To summarize: When all canneries putting up seasonal products only are combined, they comprise 57 percent of all the plants scheduled; canneries putting up seasonal and nonseasonal products comprise nearly 30 percent of the total; and plants putting up jams, jellies, juices, nonseasonal vegetables, or olives, 14 percent. These differences in products bring about such wide variations in operating conditions in canneries that the data hereinafter presented will be reviewed by the type of pack.

EXTENT OF SEASON, PEAK LOAD, AND PERIOD CANNERIES ARE OPEN

The period over which produce is canned in the different areas depends primarily on the kind of product or the combination of products and the length of the growing season. But the length of the period is modified by marketing factors such as the size of the inventory, the abundance of the crop, the prices in the fresh-produce markets. Like other industries, canned goods are sold today largely on a hand-to-mouth basis. If there is a large carry-over of any particular canned product, many plants will not can that product the next season and others will can only if the farmers' prices become advantageous. If the preceding year was good as to price and demand, much canning will be done even on a relatively high-priced produce market; or bumper crops may cause such low fresh-produce prices as to bring many canneries into production. What is canned, as well as the amount canned, depends on the judgment of each canner as to whether the combination of existing factors will yield him a reasonable profit.

Many small canners are farmers who become canners when the fresh market is oversupplied, in order to preserve their own and their neighbors' surplus crop. Canners desiring to develop a reputation for a standard grade of product may own their farms or orchards, but more often they contract with farmers for their crop at planting season. Sometimes such canners own greenhouses and supply the small plants to farmers, but more often they distribute the variety and quality of seed desired and control the planting period. This is done not only to maintain standards of product but to exercise some control over yield and maturing period to assure the widest spread of crop maturity. On fruits there may be fixed contracts between canner and grower providing for the entire crop at a minimum price, with surplusage if the market price is higher than anticipated. But term contracts are more frequent. The fruit buyer visits the fruit farm in the spring and quotes a price 3 or 4 weeks before the crop is ripe. When the canner has signed up the grower, the grower takes the canner's orders as to how much fruit should be picked each day.

Before and after canning, the plants employ some workers to overhaul equipment, ship goods, or maintain the plant. The period over which such employment is given depends on the size of the cannery,

the amount of equipment to be overhauled, and the method of disposal of canned goods. All canneries that stop canning operations for part of the year must employ men to close up the plant and, when canning is to be resumed, to get the machinery and plant into condition for operation. Under present marketing conditions, many firms have to warehouse their canned product, which may mean labeling goods and shipping them throughout the year. In rural Maryland and Virginia small canners sell through a "field broker," who takes over their products so that no stock is held.

Nineteen thirty-seven is considered the best canning year in some time.⁶ Figures available to date indicate that it was better than 1938 on most important products. Reports from Women's Bureau field agents show fewer plants canning in 1939 than in 1938, which indicates that 1939 also will show lower amounts canned than in 1937. Consequently, the season of 1937 would seem to show the industry at its 1930-40 high level of operation and the length of the season and the demand for time and personnel may be considered representative of a good canning year.

Charts I-A to I-G show the duration of canning in each State, on each product or combination of products. Not all plants in a State begin canning in the same week or end in the same week; the over-all spread shown on the charts is greater, therefore, than the average number of weeks of packing given in table III. (For chart I-G see frontispiece.)

Because weather conditions may cause crops to mature quickly in spite of efforts at planting and harvesting control, and because mature crops usually must be canned when perfect if best-quality product is to be attained and loss is to be at a minimum, most canneries have a period when the crop to be canned is at its height. This is known as peak load and the period as that of peak operation. As amount of pack week by week, and hours worked by each employee for each week in the year, could not be compiled, the best measure of peak load is the total amount paid out to workers in a week. On charts II-A to II-G, 100 is the point at which the combined pay rolls were at their peak in 1937, and the dotted curved line marks the rise and fall in outlay for services as related to the peak. Similarly, the unbroken line marks the numbers employed, 100 representing the maximum employment in the year.⁷

ONE-SEASONAL-VEGETABLE CANNERIES

No plant canning one vegetable only canned so long as 14 weeks in 1937; in fact, the average number of weeks over which tomato and tomato products were canned was but 8 weeks; the average period of pea or corn canning was but 5 weeks. Asparagus and beans had an average period of 8 weeks. These facts are shown in table III.

⁶ For amount of pack, 1932 to 1938, see table I in mimeographed appendix to this report, available from Women's Bureau on request.

⁷ Attention is called to the fact that the scale (ratio) is unevenly spaced so as to give the *same slant* to the curve where increases or decreases amount to the *same percent of change*. This scale gives a truer picture of the change from week to week than is possible with the more familiar arithmetic scale, the latter showing progression by equal differences, the former by equal ratios.

TABLE III.—Number of weeks over which canneries operated in 1937 and number of days on which canning was done, by type of pack

Type of pack	Total number of plants	Weeks over which plant canned		Days on which canning was done		Weeks of canning									
		Number of plants reporting	Average number of weeks	Number of plants reporting	Average number of days	Under 6 weeks			6, under 10 weeks			10, under 14 weeks			
						Total number of plants	Average days worked		Total number of plants	Average days worked		Total number of plants	Average days worked		
							Number of plants	Days		Number of plants	Days		Number of plants	Days	
Total.....	580	501	409	54	106	89									
1 seasonal vegetable only.....	183	157	8	147	29	53	52	19	75	68	31	29	27	43	
Tomatoes and tomato products.....	124	102	8	92	30	17	16	17	59	52	31	26	24	40	
Corn.....	35	35	5	35	24	23	23	21	12	12	29				
Peas.....	18	15	5	15	22	12	12	21	3	3	30				
Other.....	6	5	8	5	49	1	1	6	1	1	37	3	3	67	
2 seasonal vegetables only.....	62	59	11	49	49				22	18	39	27	24	48	
3 or more seasonal vegetables only.....	37	33	17	31	67				3	3	37	12	11	52	
Fruits only.....	16	13	20	11	94				1	1	34	4	3	67	
Seasonal fruits and seasonal vegetables.....	33	33	20	26	102				2	1	44	3	3	63	
Seasonal and nonseasonal products of all kinds.....	170	151	32	113	130	1	1	20				14	10	48	
Nonseasonal vegetables.....	39	24	37	13	115				3	3	30				
Jams, jellies, preserves, and fruit juices.....	27	20	49	11	278										
Olives.....	13	11	27	8	100										

Weeks of canning—Continued												
Type of pack	14 weeks			15, under 26 weeks			26, under 39 weeks			39 to 52 weeks		
	Total number of plants	Average days worked		Total number of plants	Average days worked		Total number of plants	Average days worked		Total number of plants	Average days worked	
		Number of plants	Days									
Total.....	10			108			41			93		
1 seasonal vegetable only.....												
Tomatoes and tomato products.....												
Corn.....												
Peas.....												
Other.....												
2 seasonal vegetables only.....	2	1	69	8	6	83						
3 or more seasonal vegetables only.....	1	1	49	13	12	78	4	4	102			
Fruits only.....	1	1	51	4	4	111	2	2	154	1		
Seasonal fruits and seasonal vegetables.....				20	15	95	8	7	143			
Seasonal and nonseasonal products of all kinds.....	3	3	66	53	43	89	23	20	136	57	36	206
Nonseasonal vegetables.....	1	1	64	3	3	55	3			14	6	196
Jams, jellies, preserves, and fruit juices.....				2						18	11	278
Olives.....	2	2	51	5	3	58	1	1	140	3	2	194

Chart I-B.—Period Over Which Specified Products Were Canned in Principal Canning States, 1937

[Each bar indicates dates on which canning began and ended in a State; as different canneries began and ended on different dates, the over-all period is longer than that during which any individual plant canned.]

Canneries packing TWO SEASONAL VEGETABLES

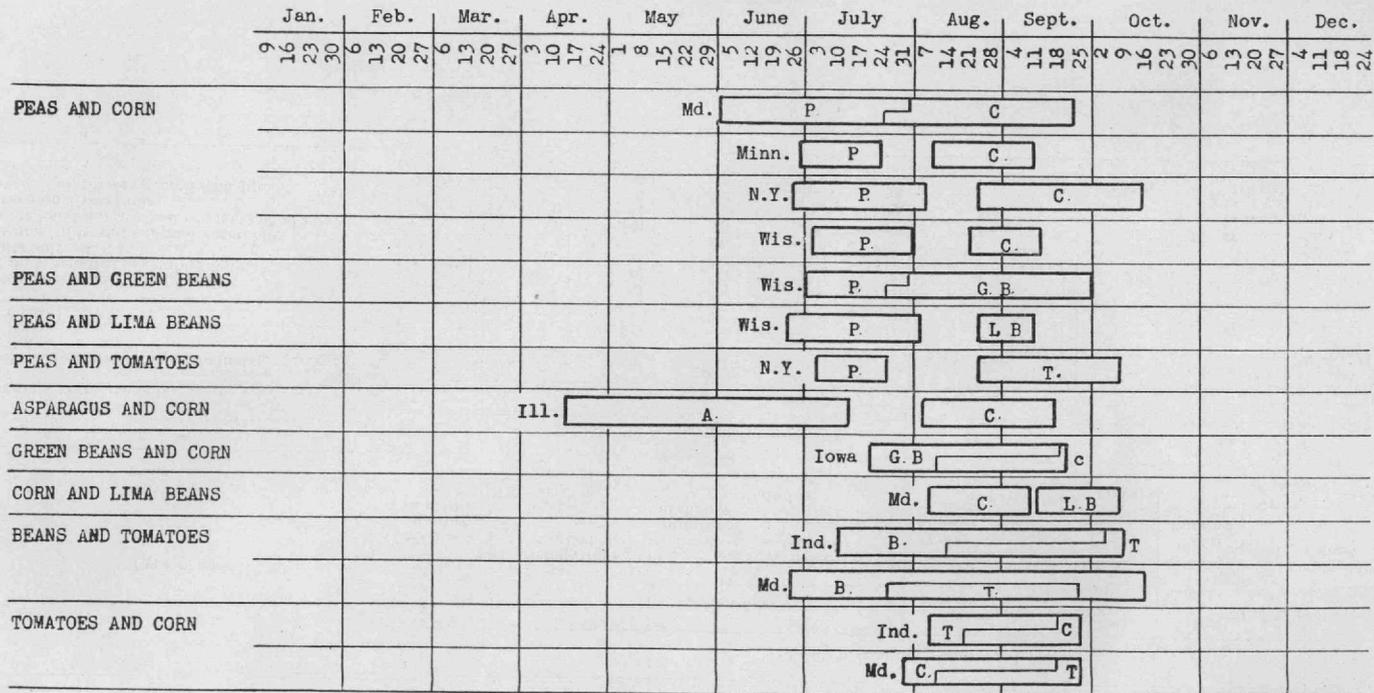


Chart I-C.—Period Over Which Specified Products Were Canned in Principal Canning States, 1937

[Each bar indicates dates on which canning began and ended in a State; as different canneries began and ended on different dates, the over-all period is longer than that during which any individual plant canned.]

Canneries packing THREE OR MORE SEASONAL VEGETABLES

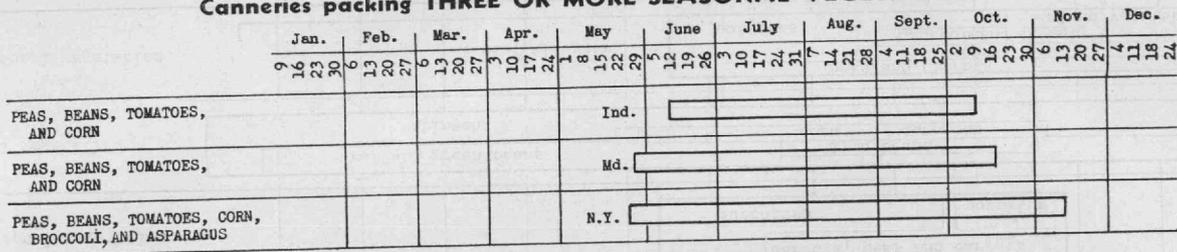


Chart I-D.—Canneries packing FRESH FRUITS ONLY

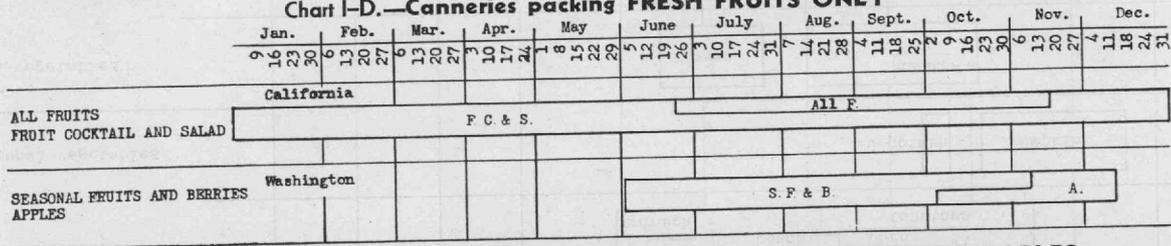


Chart I-E.—Canneries packing SEASONAL FRUITS AND SEASONAL VEGETABLES

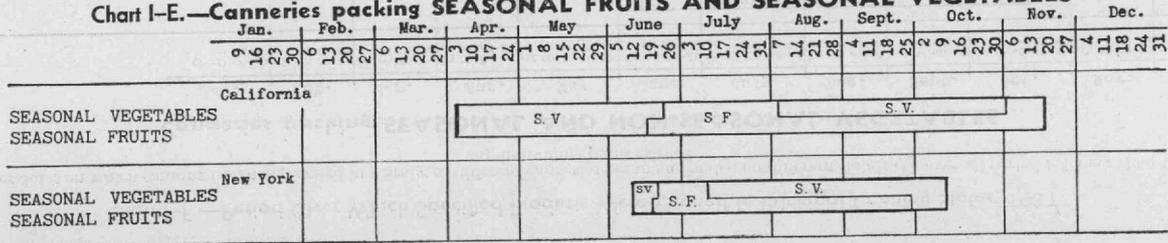
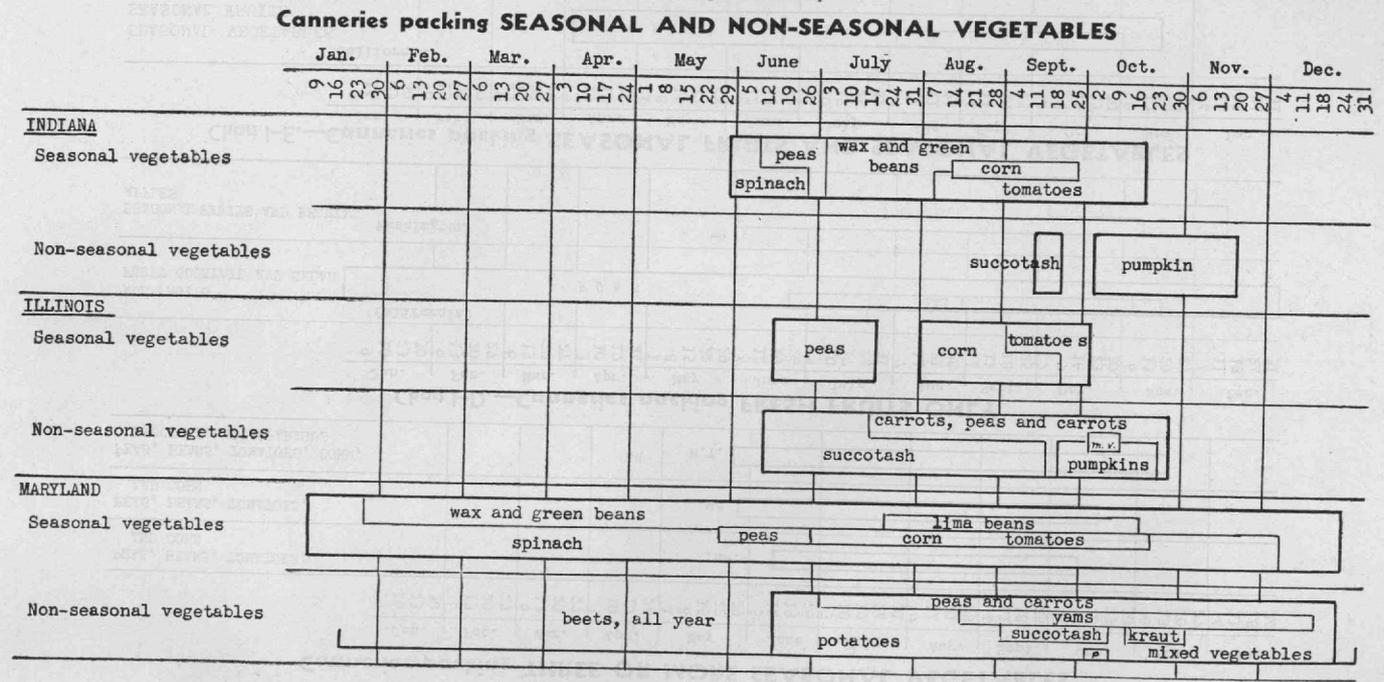


Chart I-F.—Period Over Which Specified Products Were Canned in Principal Canning States, 1937

Each bar indicates dates on which canning began and ended in a State; as different canneries began and ended on different dates, the over-all period is longer than that during which any individual plant canned.]



	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	9 16 23 30	6 13 20 27	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27	4 11 18 24 31
NEW YORK												
Seasonal vegetables						spin. peas lima, green, and wax beans		corn tomatoes				
Non-seasonal vegetables	kraut						carrots				beets	
WISCONSIN												
Seasonal vegetables						peas		corn, lima beans tomatoes wax and green beans				
Non-seasonal vegetables	kraut						peas	mixed vegetables beets			carrots	
VIRGINIA												
Seasonal vegetables and succotash						peas	corn lima beans		tomatoes			

Tomatoes and Tomato Products.

Tomato products, that is, canned tomatoes, tomato pulp, puree, paste, and juice, were canned for 6 and under 10 weeks by 58 percent of the firms reporting the 1937 season, and on an average of 31 days during the period reported. Twenty-five percent canned 10 and under 14 weeks, and on an average of 40 days, while 17 percent canned for a period of less than 6 weeks. The shortest period of canning in any plant was 3 weeks. Within one State some plants canned tomatoes for but 3 weeks while others canned for 10 weeks; in another State some canned for 5 weeks and others for 12; in still another the spread was from 6 to 13 weeks. Except in canneries packing for the shortest period, the average number of days of tomato canning was 4 and a fraction a week, whether the number of weeks of pack was 5 or 13.

Though the average number of weeks in which these plants canned tomatoes was 8, the average number of weeks in which they gave employment to one or more persons was 27.

Peak period.—On tomato products the peak week of canning in 1937, according to the amount of the pay rolls, was the second week in September in Indiana and Ohio. In Maryland it was the third week in August and in Virginia it was the second week in August, whereas in California it was as late as the second week in October.

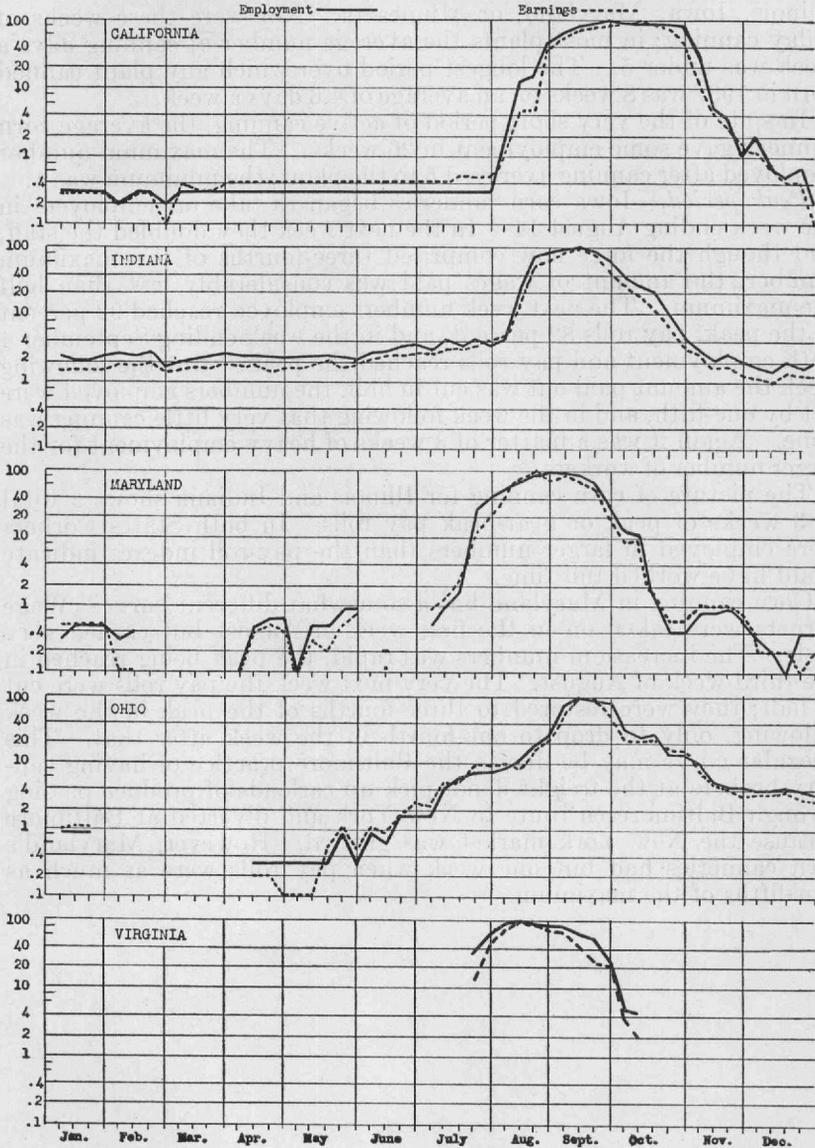
In Indiana the number of employees jumped from one-fourth of the maximum to three-fourths of the maximum between August 14 and August 21, though the pay rolls increased to only one-half, indicating short time for many employees in this week. In the following week employment reached 85 percent, but the amount of wages was but 63 percent of the peak. The next week employment almost reached its peak, but the pay rolls were 87 percent. The week ending September 11 was the peak in numbers and in wage payments. An immediate drop followed, to 89 in employment and 80 in pay rolls. From this week on pay rolls decreased rapidly and numbers employed less rapidly until only the clean-up and warehouse crews were left. At most the period of heavy tomato pack was not more than 3 weeks in Indiana in 1937.

Analysis of chart II-A shows that Maryland and Virginia could not claim more than 2 weeks of heavy load and that California's load was concentrated in 4 weeks. Ohio had but 2 weeks of load when pay rolls were at peak or near the peak.

When canning of tomato products ended, many plants closed down at once and entirely. Others employed a few persons during at least half of the year, the minimum number in any plant being two.

Chart II-A.—Fluctuation of Employment and Amount Paid to Cannery Workers Each Week in 1937 in Principal Canning States

1. Canneries packing ONE SEASONAL VEGETABLE—TOMATOES



Corn Canneries.

Table III shows clearly that corn was canned in the majority of plants in 6 weeks or less. This was true whether the cannery was in Illinois, Iowa, Maryland, or Minnesota. Nor were these weeks of 6-day canning; in most plants the average number of canning days a week was under 5. The longest period over which any plant canned corn in 1937 was 8 weeks on an average of 4.6 days a week.

In spite of the very short period of active canning, the average corn cannery gave some employment in 26 weeks. The maximum number employed after canning averaged 5 to the plant; the minimum was 1.

Peak period.—Iowa corn canneries began to take on employees in the week ending August 14. In the next week they doubled the staff, and though the force now comprised three-fourths of the maximum number, the amount of wages paid was considerably less than half the maximum. The next week numbers employed reached 92 percent of the peak, pay rolls 82 percent, and in the week ending September 4 both employment and pay rolls reached the peak. But the following week the amount paid out was cut in half, the numbers employed were cut by one-fifth, and in the week following that very little canning was done. Again it was a matter of 3 weeks of heavy employment for the larger number of workers.

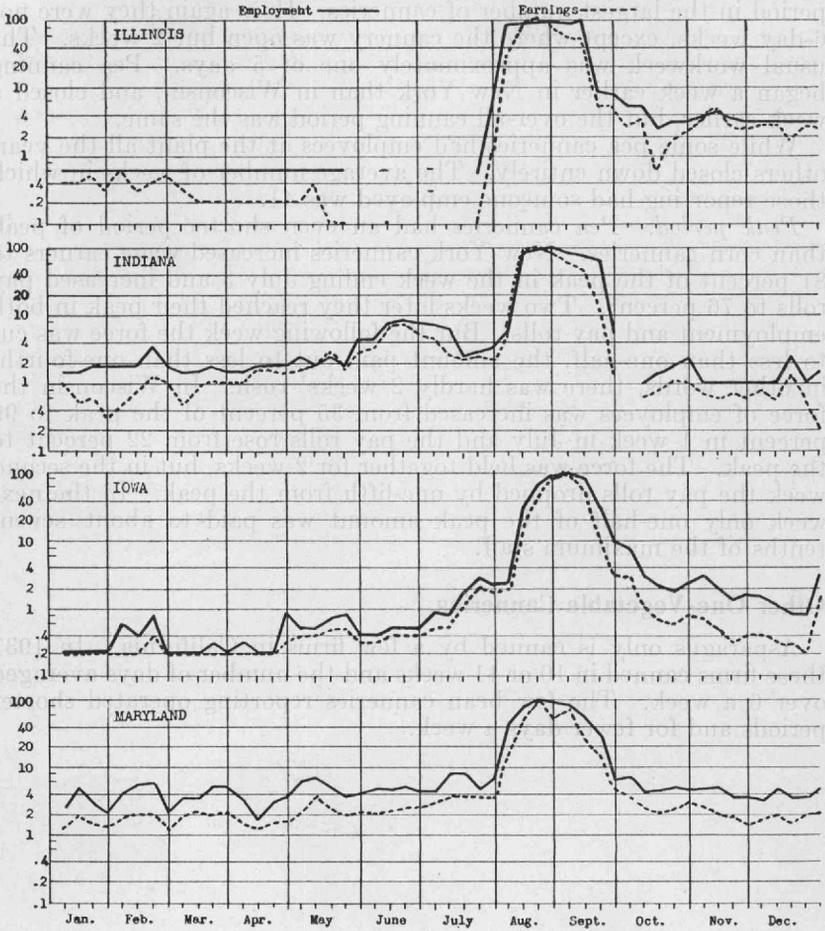
The picture of corn canning for Illinois and Indiana shows a total of 3 weeks of peak or near-peak pay rolls. In both States workers were employed in larger numbers than the pay-roll indexes indicate could have worked full time.

Corn canning in Maryland has a somewhat different curve. Wage earners were taken on in the first week of August but earned very little. The increase in numbers was rapid, the peak being reached in the third week of August. The very next week the pay rolls were cut in half; they were restored to three-fourths of the peak in the week following, only to drop to one-fourth in the week after that. This irregular curve may be due to the Baltimore practice of having cannery brokers at the freight depot pick up carloads of produce passing through Baltimore en route to New York and diverted at Baltimore because the New York market was glutted. However, Maryland's corn canneries had but one week when pay rolls were as much as four-fifths of the maximum.



Chart II-A.—Fluctuation of Employment and Amount Paid to Cannery Workers Each Week in 1937 in Principal Canning States

2. Canneries packing ONE SEASONAL VEGETABLE—CORN



Pea Canneries.

Pea canneries also had very short periods of pack. Almost all the plants reporting canned peas for less than 6 weeks, 5 weeks being the period in the largest number of canneries. Here again they were not 6-day weeks, except where the cannery was open but 2 weeks. The usual workweek was approximately one of 5 days. Pea canning began a week earlier in New York than in Wisconsin, and closed a week earlier, but the over-all canning period was the same.

While some pea canneries had employees at the plant all the year, others closed down entirely. The average number of weeks in which those reporting had someone employed was 41.

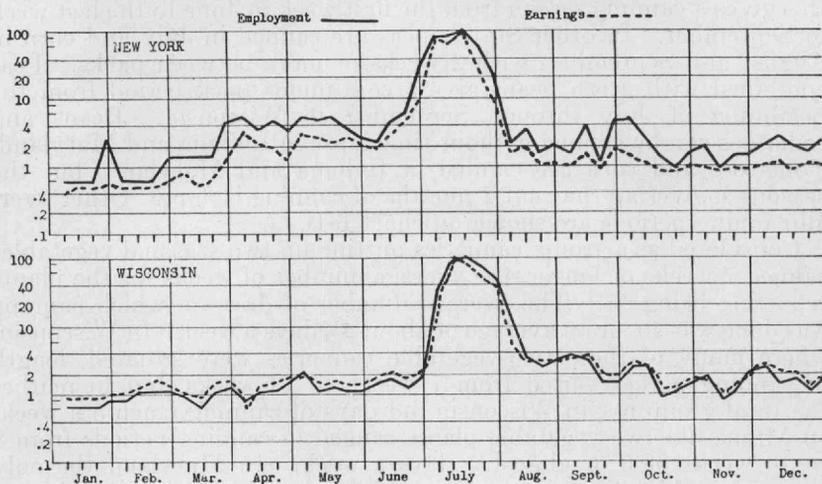
Peak period.—Pea canneries had an even shorter period of peak than corn canneries. New York canneries increased wage earners to 81 percent of the peak in the week ending July 3 and increased pay rolls to 76 percent. Two weeks later they reached their peak in both employment and pay rolls. But the following week the force was cut to less than one-half, the amount paid out to less than one-fourth; in other words, there was hardly 2 weeks' rush. In Wisconsin the force of employees was increased from 35 percent of the peak to 99 percent in 1 week in July and the pay rolls rose from 22 percent to the peak. The force was held together for 2 weeks, but in the second week the pay rolls dropped by one-fifth from the peak. In the next week only one-half of the peak amount was paid to about seven-tenths of the maximum staff.

Other One-Vegetable Canneries.

Asparagus only is canned by a few firms in California. In 1937 these firms canned in 10 or 11 weeks and the number of days averaged over 6 a week. The few bean canneries reporting operated shorter periods and for fewer days a week.

Chart II-A.—Fluctuation of Employment and Amount Paid to Cannery Workers Each Week in 1937 in Principal Canning States

3. Canneries packing ONE SEASONAL VEGETABLE—PEAS



TWO-SEASONAL-VEGETABLE CANNERIES

The vegetables canned by many plants that extend their canning season by putting up two vegetables are peas and corn. In Maryland this gives a canning season from the first week in June to the last week in September. In other States, peas are canned in July and corn in August and September, with 2 weeks or more between packs. Peas combined with green beans give a continuous pack period from the beginning of July through September in Wisconsin. Beans and tomatoes can be canned without time lapse in Indiana and Maryland. Tomatoes and corn are canned in Indiana and Maryland, but the seasons so overlap that not 2 months of canning is done. Other over-all canning periods are shown on chart I-B.

Considered as a group, canneries putting up two seasonal vegetables canned 7 weeks or longer, the average number of weeks for the plants reporting being 11. The average number of days on which canning was done was 49, or an average of about $4\frac{1}{2}$ days a week. In Wisconsin, where many of these two-vegetable canneries were situated, length of canning period varied from 7 weeks to 13 weeks, but in neither the total group nor in Wisconsin did days of canning reach 5 a week. In Minnesota two-vegetable plants ranged in canning periods from 8 to 10 weeks of 5 or almost 5 days a week. In Maryland the only cannery working 7 weeks canned on 6 days of the week; other Maryland plants canned for 10, 11, and 12 weeks, but for not more than $4\frac{1}{2}$ days a week.

Peak period.—The peak week in Maryland was the first week in September, that of September 4; the numbers of employees were close to the peak for 2 weeks before and 1 week following this. The amount paid out, however, was seven-eighths of the peak in the third week of August, dropped to less than two-thirds the following week, reached the peak, and dropped to 78 percent of maximum the second week of September. There was no noticeable rush in the June and July canning period of peas or beans.

In Wisconsin, however, peas were the rush-period crop and the canning of green beans, limas, or corn was secondary. The peak for the two-vegetable pack in Wisconsin occurred in the second week of July, the pay roll increasing by about 100 percent in 1 week. While most of the employees were kept another week, the pay roll dropped by a third. Extending the canning period by the addition of another vegetable obviously does not increase the number of weeks of peak operation.

As in the one-vegetable canneries, some of the two-vegetable canneries closed down soon after operations were completed and others gave employment to at least one person the entire year. The average number of weeks those reporting had anyone employed was 43, as compared with an 11-week canning period.

Chart II-B.—Fluctuation of Employment and Amount Paid to Cannery Workers Each Week in 1937 in Principal Canning States

Canneries packing TWO SEASONAL VEGETABLES

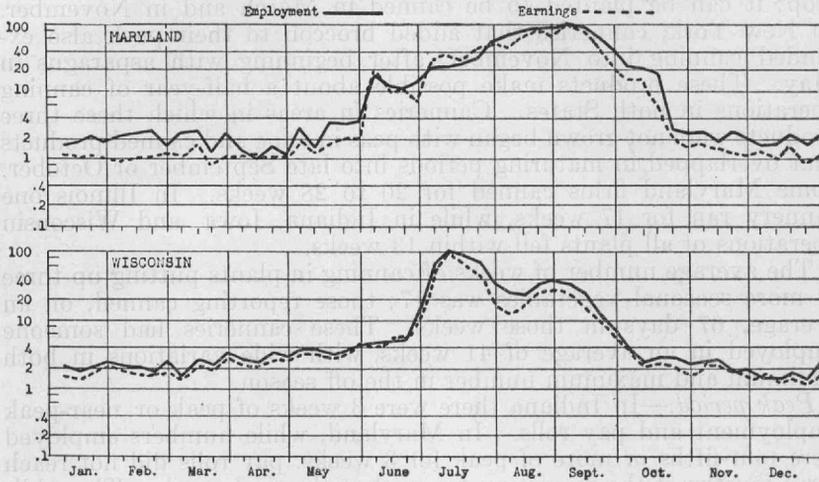
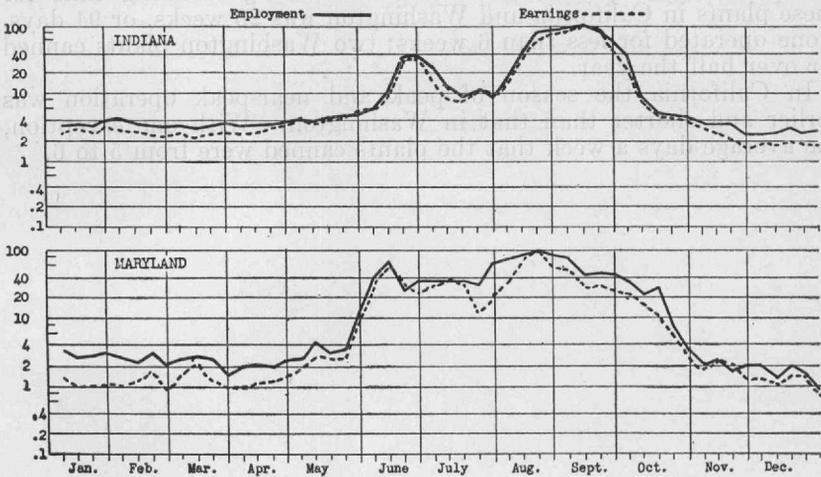


Chart II-C.—Fluctuation of Employment and Amount Paid to Cannery Workers Each Week in 1937 in Principal Canning States

Canneries packing THREE OR MORE SEASONAL VEGETABLES



THREE-OR-MORE-SEASONAL-VEGETABLE CANNERIES

The three-or-more-seasonal-vegetable cannery had a long canning season in California, for spinach is used as both an early and a late crop; it can be planted to be canned in March and in November. In New York, canneries that added broccoli to their pack also extended canning into November, after beginning with asparagus in May. These products make possible about a half-year of canning operations in both States. Canneries in areas in which these three products were not grown began with peas in June and canned products that overlapped in maturing periods into late September or October. Some Maryland firms canned for 20 to 28 weeks. In Illinois one cannery ran for 17 weeks, while in Indiana, Iowa, and Wisconsin operations of all plants fell within 13 weeks.

The average number of weeks of canning in plants putting up three or more seasonal vegetables was 17; those reporting canned, on an average, 67 days in those weeks. These canneries had someone employed in an average of 41 weeks, with wide variations in both minimum and maximum number in the off season.

Peak period.—In Indiana there were 3 weeks of peak or near-peak employment and pay rolls. In Maryland, while numbers employed were four-fifths or more of peak for 3 weeks, pay rolls did not reach three-fourths of the maximum in any but the peak week. The addition of more vegetables tends to spread employment rather than to increase the periods of congestion.

FRUIT CANNERIES

Only a few of the canneries surveyed, 16 in all, canned fruits only; these were large plants, however. The average canning time for these plants in California and Washington was 20 weeks, or 94 days. None operated for less than 6 weeks; two Washington plants canned for over half the year.

In California the season of peak and near-peak operation was earlier and shorter than that in Washington. With one exception, the average days a week that the plants canned were from 5 to 6.

Chart II-D.—Fluctuation of Employment and Amount Paid to Cannery Workers Each Week in 1937 in Principal Canning States

Canneries packing FRESH FRUITS ONLY

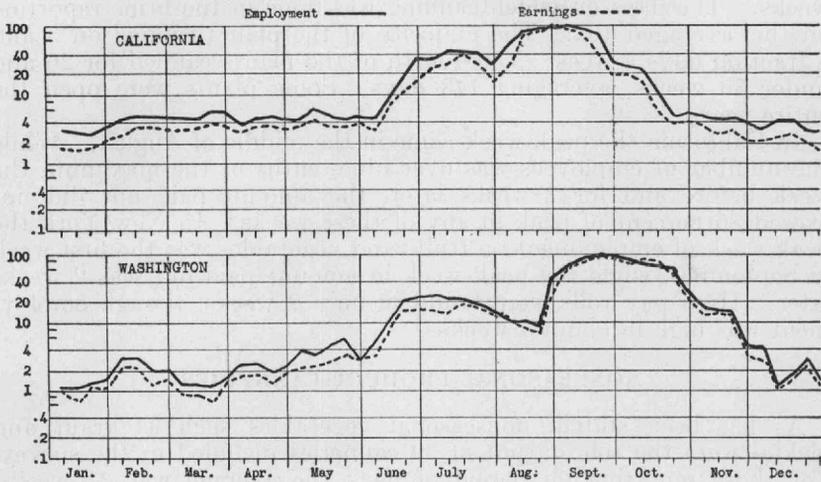
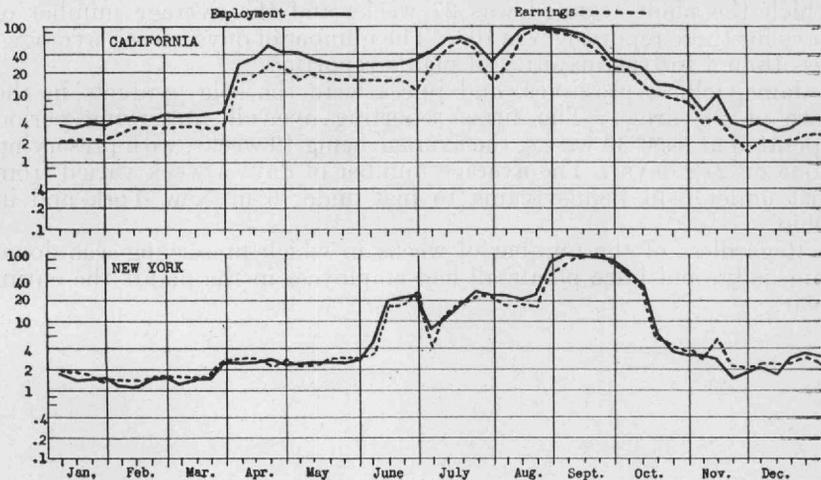


Chart II-E.—Fluctuation of Employment and Amount Paid to Cannery Workers Each Week in 1937 in Principal Canning States

Canneries packing SEASONAL FRUITS AND SEASONAL VEGETABLES



SEASONAL-VEGETABLE-AND-FRUIT CANNERIES

When seasonal vegetables and fruits both were canned in Arkansas, California, New York, and Texas, the average canning period was 20 weeks. The days on which canning was done in the firms reporting on this averaged 102. The majority of the plants canned on 5 and a fraction days a week. One-fourth of the plants canned for 26 and under 39 weeks, averaging 143 days. Some plants were open the entire year.

In California the peak week came in the middle of August. While the number of employees was over nine-tenths of the maximum the week before and for 2 weeks later, the amount paid out did not exceed 86 percent of peak in any of these weeks. In New York the peak week of employment on fruits and vegetables was the first week in September, while the peak week in amount paid out was 2 weeks later. High pay rolls were found in only 2 weeks, though employment was high in about 4 weeks.

NONSEASONAL-PRODUCT CANNERIES

As has been stated, nonseasonal vegetables such as kraut and pickles were the sole output of 39 canneries included in the survey. For those reporting on period of pack the average was 37 weeks. As is clear from table III, there is a wide difference between plants in the period of canning, which ranged from 7 weeks to 52 weeks. Even the average days a week on which canning was done varied from less than 3 to 5½.

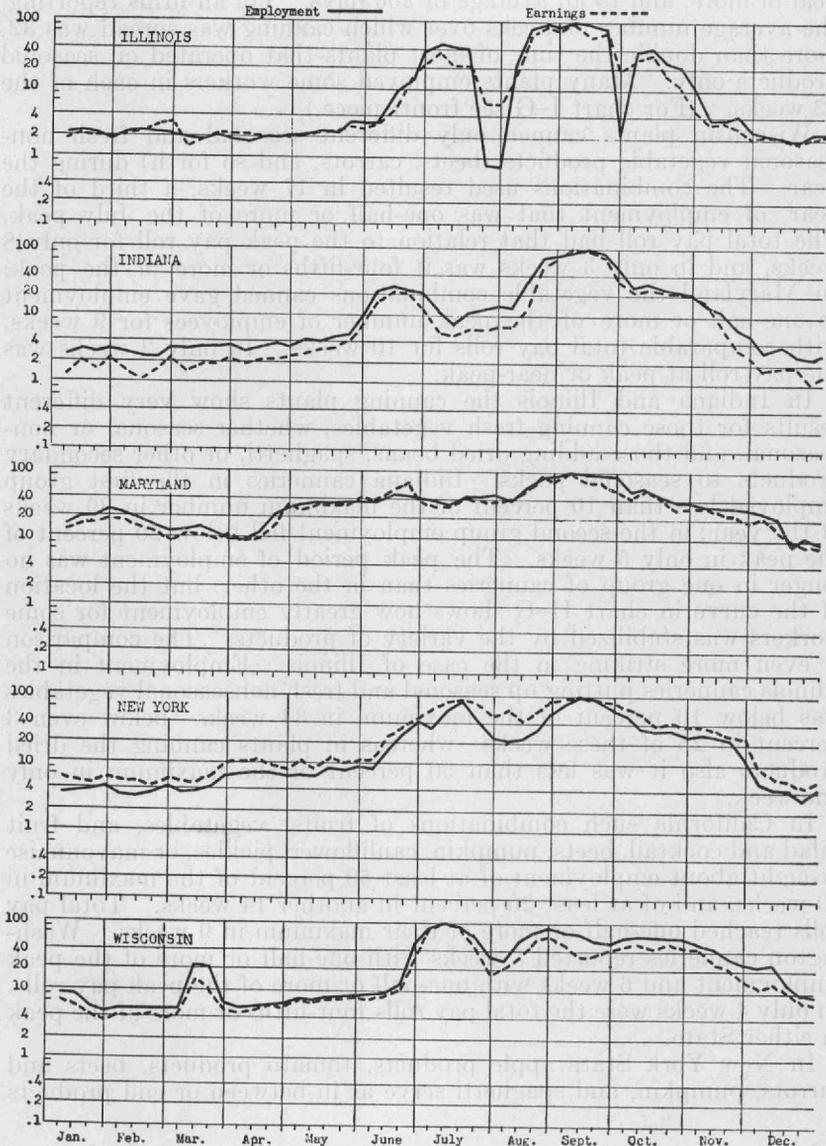
Olives, like kraut and pickles, are held in a briny solution a number of weeks before being canned. Consequently, the canning may extend over a considerable period, though the average time over which the plants canned was 27 weeks and the average number of days for those reporting was 100. The number of days a week averaged less than 4 for the majority of plants reporting.

Jams, jellies, preserves, and juices were the sole products in the case of 27 firms. The firms reporting over-all preserving period operated at least 39 weeks, the average being 49 weeks, with preserving done on 278 days. The average number of days a week varied from just under 5 in Pennsylvania to just under 6 in New York and in Ohio.

Regardless of the number of weeks in which preserving was done, jam, jelly, and juice plants all had employees in the plants the entire year.

Chart II-F.—Fluctuation of Employment and Amount Paid to Cannery Workers Each Week in 1937 in Principal Canning States

Canneries packing SEASONAL AND NON-SEASONAL VEGETABLES



SEASONAL-AND-NONSEASONAL-PRODUCT CANNERIES

Plants falling in this group (charts II-F and I-F and G) range from canneries that add to seasonal tomato products such manufactures as catsup, chili sauce, tomato sauce, or soup of which tomatoes are the essential base, to canneries that put up a variety of seasonal products and use dry-bean products, fruit cocktail, jams, jellies and preserves, beets and carrots, and other nonseasonal vegetables, or other products to fill in the periods between seasonal-product canning. By such efforts the period of plant operation was extended, by 34 percent of the firms reporting, to three-fourths of the year or more, and to an average of 206 days. For all firms reporting, the average number of weeks over which canning was spread was 32, more than double the time of most plants that operated on seasonal products only. Many plants employed some workers in each of the 52 weeks. (For chart I-G see frontispiece.)

Wisconsin plants canned only different seasonal and fresh non-seasonal vegetable products (beets, carrots, and so forth) during the year. The combinations used resulted in 17 weeks, a third of the year, of employment that was one-half or more of the July peak. The total pay roll had that relation to the peak pay roll for only 8 weeks, and in only 3 weeks was it four-fifths or more of the peak. In Maryland the vegetable combinations canned gave employment to one-half or more of the peak number of employees for 9 weeks, with comparable total pay rolls for 10 weeks. In only 2 weeks was the pay roll at peak or near-peak.

In Indiana and Illinois the canning plants show very different results for those canning fresh vegetables, whether seasonal or non-seasonal, and those adding dried beans, spaghetti, or other secondary products to seasonal packs. Indiana canneries in the first group employed less than 10 percent of the maximum number in 29 weeks of the year; in the second group employment fell below 20 percent of the peak in only 5 weeks. The peak period of employment was no longer in one group of canneries than in the other, but the location of the curve in chart II-G shows how greatly employment for some workers was stabilized by the variety of products. The comparison is even more striking in the case of Illinois. Employment in the Illinois canneries putting up seasonal and fresh nonseasonal vegetables was below 10 percent of the maximum in 34 weeks—below even 3 percent in 25 of these weeks—whereas in plants canning the dried products also it was less than 50 percent of the maximum in only one week.

In California such combinations of fruits, vegetables, and fruit salad and cocktail, beets, pumpkin, cauliflower, pickles, or mayonnaise brought about employment of at least 50 percent of the maximum in 10 weeks, and of at least 20 percent in another 14 weeks. Total pay rolls reached one-half or more of their maximum in 9 weeks. Washington canneries reported 8 weeks with one-half or more of the peak employment and 6 weeks with one-half or more of the peak pay rolls. In only 4 weeks were the total pay rolls four-fifths or more of the peak in either State.

In New York State apple products, tomato products, beets and carrots, pumpkin, and spaghetti serve as in-between or end products

in the plants surveyed. In these plants there were 11 weeks in which employment reached one-half or more of the peak, but the amounts paid out in wages were one-half or more of the peak pay rolls in only 6 weeks.

In New Jersey and Pennsylvania, though the plants reported a decided peak in employment in only 1 week, the number of employees was 40 percent or more of that peak in all but 7 weeks. In many weeks the pay rolls were between 35 percent and 37½ percent of their peak.

The addition of nonseasonal products did not lengthen the work-week. In no plant did the week average 6 days, and in the majority of the plants the average for the season was less than 5 days.

Nor did such additional products increase the period of peak or near peak load. Four-fifths or more of the peak pay rolls in the various States extended over 2, 3, or 4 weeks. The exceptions were New York, where the peak for all plants extended over 7 weeks when fresh vegetables of seasonal and nonseasonal varieties were canned, and Illinois, where plants canning all types of products had a peak or near-peak load for 6 weeks.

Chart II-G.—Fluctuation of Employment and Amount Paid to Cannery Workers Each Week in 1937 in Principal Canning States

Canneries packing SEASONAL AND NON-SEASONAL PRODUCTS OF ALL KINDS

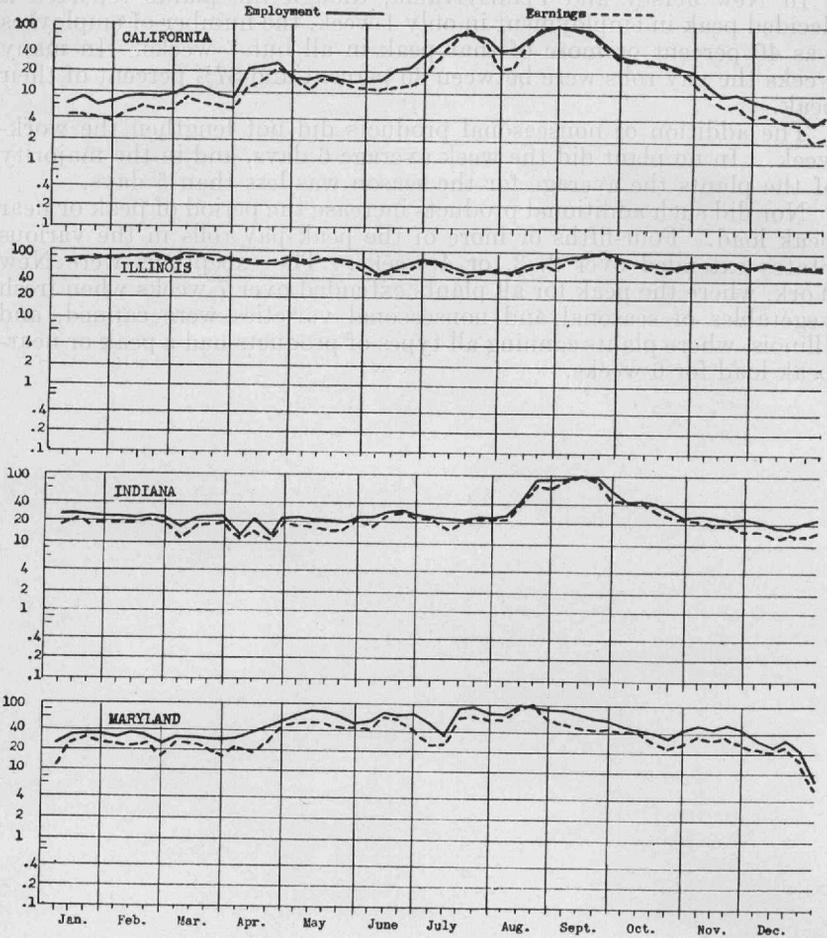
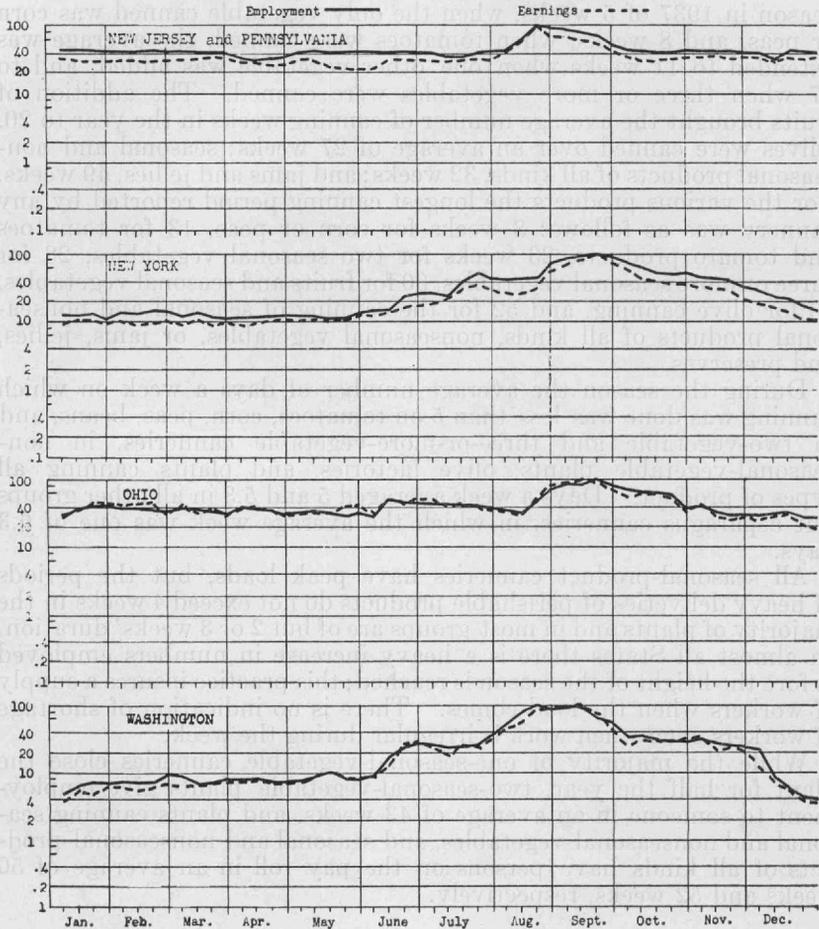


Chart II-G.—Fluctuation of Employment and Amount Paid to Cannery Workers Each Week in 1937 in Principal Canning States

Canneries packing SEASONAL AND NON-SEASONAL PRODUCTS OF ALL KINDS—Continued



OTHER BUSINESSES OPERATED BY CANNERS

The shortness of the canning season, especially when only one product is canned, naturally brings up the question as to what these canners do the remainder of the year. The question was asked the independent canner operating his own cannery and did not refer to members of canning corporations who may have devoted little time to the actual canning business.

One hundred and forty-four canners stated that they operated one or more other businesses during the year. The larger proportion of these were among Maryland and Virginia tomato canners. In Maryland 23 canners considered their farming, oyster packing, or general-store keeping of as much importance to their income as canning. Four canners and other crops for canning, and 11 regarded

IN SUMMARY

The number of weeks in which canning is done increases with the number of seasonal products canned and is materially increased by the addition of nonseasonal products. From an average canning season in 1937 of 5 weeks, when the only vegetable canned was corn or peas, and 8 weeks, when tomatoes were canned, the average was extended to 11 weeks when one other vegetable was added, and to 17 when three or more vegetables were canned. The addition of fruits brought the average number of canning weeks in the year to 20. Olives were canned over an average of 27 weeks; seasonal and nonseasonal products of all kinds, 32 weeks; and jams and jellies, 49 weeks. For the various products the longest canning period reported by any cannery was as follows: 8 weeks for corn or peas, 13 for tomatoes and tomato products, 23 weeks for two seasonal vegetables, 28 for three or more seasonal vegetables, 30 for fruits and seasonal vegetables, 40 for olive canning, and 52 for the canning of seasonal and nonseasonal products of all kinds, nonseasonal vegetables, or jams, jellies, and preserves.

During the season the average number of days a week on which canning was done was less than 5 on tomatoes, corn, peas, beans, and in two-vegetable and three-or-more-vegetable canneries, in nonseasonal-vegetable plants, olive factories, and plants canning all types of product. Days a week averaged 5 and 5.3 in all other groups but asparagus canneries, in which the average week was one of 6.3 days.

All seasonal-product canneries have peak loads, but the periods of heavy deliveries of perishable products do not exceed 4 weeks in the majority of plants and in most groups are of but 2 or 3 weeks' duration. In almost all States there is a heavy increase in numbers employed before the height of the season is reached; this practice insures a supply of workers when the load comes. There is no indication of shortage of workers even when work is irregular during the week.

While the majority of one-seasonal-vegetable canneries close the plant for half the year, two-seasonal-vegetable plants give employment to someone in an average of 43 weeks, and plants canning seasonal and nonseasonal vegetables, and seasonal and nonseasonal products of all kinds have persons on the pay roll in an average of 50 weeks and 52 weeks, respectively.

OTHER BUSINESSES OPERATED BY CANNERS

The shortness of the canning season, especially when only one product is canned, naturally brings up the question as to what these canners do the remainder of the year. The question was asked the independent canner operating his own cannery and did not refer to members of canning corporations who may have devoted little time to the actual canning business.

One hundred and twenty-four canners stated that they operated one or more other businesses during the year. The larger proportion of these were among Maryland and Virginia tomato canners. In Maryland 23 canners considered their farming, oyster packing, or general-store keeping of as much importance to their income as canning; 4 grew tomatoes and other crops for canning; and 11 regarded

sawmill operation, an insurance agency, store keeping, or farming as incidental to their canning operations. Among Virginia canners there were few who did not farm, keep a store, operate fish canneries or saw mills, conduct legal practice, act as station master, or conduct other local businesses apart from canning.

In New York State about three-tenths of the canners reporting operated farms in connection with their canneries, and a few also operated cold-storage warehouses or wholesale-distribution services. In Indiana about 14 percent reported a second business; wholesale and retail groceries, trucking, retailing of coal, and farming were some of the businesses conducted.

In California, Illinois, Iowa, Minnesota, Wisconsin, and other States there was little secondary business carried on except the operation of greenhouses for canning crops, farming, and fruit growing.

EMPLOYER COVERAGE IN STATE UNEMPLOYMENT COMPENSATION LAWS

In the 13 States included in the 1938 survey an employer is covered by the State unemployment compensation law if he employs—

1. Eight or more workers within each of 20 weeks in Indiana, New Jersey, Virginia, and Washington.
2. Six or more workers within each of 20 weeks in Illinois. (This provision became effective January 1, 1940. Prior to that date employers were covered who employed eight or more workers within each of 20 weeks.)
3. Four or more workers within each of 20 weeks in California and Maryland.
4. One or more workers within each of 20 weeks in Minnesota and Pennsylvania.
5. Six or more workers within each of 18 weeks in Wisconsin. (If employer's records do not permit an accurate count, employer will be covered if his total annual pay roll is \$6,000 or more.)
6. Eight or more workers within each of 15 weeks in Iowa.
7. Four or more workers on each of 15 days in New York.
8. Three or more workers at any one time in Ohio.

Table IV shows the number of plants in the survey reporting the minimum number of employees for the weeks here specified, by type of product canned.

All canneries scheduled would be covered if the New York provision of four persons employed for 15 days or more were applicable universally. The Minnesota and Pennsylvania provision of one or more persons for 20 weeks would cover 85 percent of all canneries combined and of the total for each type of product but seasonal vegetables, where the percent is less. The provisions of other States would reduce the coverage to about three-fourths of the canneries reporting.

The provisions of the unemployment compensation laws in effect today in the various States in which firms were surveyed cover the following proportions of the canneries included in the study: California, 92 percent; Illinois, 83 percent; Indiana, 56 percent; Iowa, 32 percent; Maryland, 55 percent; Wisconsin, 70 percent; Virginia, 33 percent; and in the remaining 6 States, 100 percent.

Unemployment compensation laws in the several States vary not only as to employer coverage but as to employee-eligibility requirements. As the latter are based on wages received in one specific period, this application to the canning industry will be considered after earnings in canneries have been discussed.

TABLE IV.—Number of plants employing a specified minimum number of workers in a specified number of weeks as provided in State unemployment compensation laws, by type of pack

Type of pack	Total number of plants reporting	Number of plants employing specified number of workers 1 or more days in—												
		20 weeks or more				18 weeks or more				15 weeks or more				15 days or more
		1 or more persons	4 or more persons	6 or more persons	8 or more persons	1 or more persons	4 or more persons	6 or more persons	8 or more persons	1 or more persons	4 or more persons	6 or more persons	8 or more persons	4 or more persons
Total.....	316	269	244	228	205	271	250	236	212	278	262	247	227	316
Seasonal vegetables only.....	140	96	75	63	47	98	80	68	51	104	90	77	60	140
1 vegetable.....	89	53	35	27	17	55	40	30	19	58	47	37	25	89
2 vegetables.....	29	23	22	19	14	23	22	21	15	25	23	21	17	29
3 or more vegetables.....	22	20	18	17	16	20	18	17	17	21	20	19	18	22
Fruits only.....	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Seasonal fruits and seasonal vegetables.....	21	20	20	20	17	20	20	20	17	20	20	20	19	21
Seasonal and nonseasonal products of all kinds.....	104	103	101	99	96	103	102	100	98	104	104	102	100	104
Nonseasonal vegetables.....	17	16	15	14	13	16	15	15	14	16	15	15	15	17
Jams, jellies, preserves, and fruit juices.....	13	13	12	12	12	13	12	12	12	13	12	12	12	13
Olives.....	8	8	8	7	7	8	8	8	7	8	8	8	8	8

TABLE V.—Number of plants employing a specified minimum number of workers in a specified number of weeks as provided in State unemployment compensation laws, by State

State	Total number of plants reporting	Number of plants employing specified number of workers 1 or more days in—												15 days or more
		20 weeks or more				18 weeks or more				15 weeks or more				
		1 or more persons	4 or more persons	6 or more persons	8 or more persons	1 or more persons	4 or more persons	6 or more persons	8 or more persons	1 or more persons	4 or more persons	6 or more persons	8 or more persons		4 or more persons
Total.....	316	269	244	228	205	271	250	236	212	278	262	247	227	316
California.....	64	63	59	58	56	63	59	59	57	64	61	60	59	64
Illinois.....	12	12	12	10	9	12	12	10	9	12	12	10	10	12
Indiana.....	52	47	39	35	29	47	40	38	30	48	43	38	33	52
Iowa.....	19	10	3	2	1	12	6	4	2	14	10	8	6	19
Maryland.....	60	35	33	32	28	35	33	32	30	36	35	33	31	60
Minnesota.....	2	2	2	2	2	2	2	2	2	2	2	2	2	2
New Jersey and Pennsylvania.....	5	5	5	5	5	5	5	5	5	5	5	5	5	5
New York.....	59	56	55	51	47	56	55	52	48	57	55	54	51	59
Ohio.....	9	9	9	9	7	9	9	9	7	9	9	9	7	9
Virginia.....	3	1	1	1	1	1	1	1	1	1	1	1	1	3
Washington.....	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Wisconsin.....	23	21	18	15	12	21	20	16	13	22	21	19	14	23

LOCATION OF CANNERIES

Canneries are situated in widely different places. They may be large brick structures on the waterfront or near the railway freight terminal of a metropolis, or the thin black stem of a smokestack on a typical low gray shed may be sited in a field several miles from a town.

SIZE OF COMMUNITY

Of 594 plants with location reported, well over half were in rural areas. A rural area is one with a population of under 2,500. The cannery may be in a town of under 2,500, on the unincorporated edge of a town or city, or in the midst of farms. In Virginia all but 3 of the canneries visited were strictly rural; in Arkansas almost four-fifths and in Maryland two-thirds were rural. In Wisconsin and in New York roughly three-fifths were so reported, while in Indiana the proportion was seven-tenths. In California, Ohio, Washington, and Pennsylvania, the proportion of plants in rural areas was one-fourth or less of all surveyed.

Table VI shows number of canneries that reported pack as well as locality. Of the 537 plants reporting, 14 percent were in towns of 2,500 and under 5,000 population, 10 percent in towns of 5,000 and under 10,000, 8 percent in towns of 10,000 and under 50,000, and 11 percent in cities of 50,000 and over. The largest proportion of canneries in cities of 50,000 and over was in California. The 306 canneries in rural areas, while 57 percent of the plants reporting, canned but 28 percent of the pack. The 58 plants in cities of 50,000 or more, only 11 percent of all reporting, canned 31 percent of the pack.

States in which the rural canneries reporting packed half or more of the State's total pack in 1937 were Arkansas, Iowa, and Virginia. States in which a third but not half was packed in rural canneries were Illinois, Indiana, Minnesota, New York, and Wisconsin. Forty percent or more of the pack of California, Florida, Indiana, and New Jersey and Pennsylvania canneries was put up by plants in cities of 50,000 and over. Forty percent or more of Washington's and Virginia's production was by canneries in towns of 10,000 and under 50,000.

Three-fourths of the plants reporting that canned one vegetable only, and almost as large a proportion of those canning two vegetables, were in rural communities. Only five of the canneries putting up nothing but tomatoes were in cities of 50,000 and over. No cannery producing corn or peas only, and no two-seasonal-vegetable cannery, was in a community with 50,000 or more population.

The fruit canneries scheduled were in communities of all sizes, the largest proportion being in towns of 10,000 and under 50,000. When seasonal fruits and vegetables both were canned, 33 percent in the 1938 survey were in rural communities and the remainder in cities or towns of various sizes. The proportion of such canneries in rural areas in New York exceeded the proportion in California.

Nonseasonal vegetables such as kraut and pickles were canned both in rural areas and in cities of 100,000 and over, as well as in communities between these extremes.

TABLE VI.—Distribution of plants and of total pack in 1937 according to size of community, by State—Canned vegetables and fruits

State	All plants reporting		Plants in areas with population of—											
			Under 2,500		2,500, under 5,000		5,000, under 10,000		10,000, under 50,000		50,000, under 100,000		100,000 and over	
	Number of plants	Amount of pack (cases)	Number of plants	Amount of pack (cases)	Number of plants	Amount of pack (cases)	Number of plants	Amount of pack (cases)	Number of plants	Amount of pack (cases)	Number of plants	Amount of pack (cases)	Number of plants	Amount of pack (cases)
Total—Number	1 537	98, 104, 905	306	27, 533, 875	73	14, 187, 880	55	15, 167, 334	45	10, 829, 244	14	7, 150, 715	44	23, 235, 857
Percent	100.0	100.0	57.1	28.1	13.6	14.5	10.3	15.5	8.4	11.0	2.6	7.3	8.2	23.6
Arkansas—Number	33	1, 581, 561	26	909, 236	3	340, 148	3	147, 235	1	184, 942				
Percent	100.0	100.0	78.8	57.5	9.1	21.5	9.1	9.3	3.0	11.7				
California—Number	72	24, 208, 004	20	3, 715, 710	9	2, 370, 480	9	4, 178, 196	10	2, 752, 598	11	6, 069, 543	13	5, 121, 477
Percent	100.0	100.0	27.8	15.3	12.5	9.8	12.5	17.3	13.9	11.4	15.3	25.1	18.1	21.2
Florida—Number	5	329, 706	1	3, 513	2	93, 875	1	13, 000					1	213, 318
Percent	(?)	100.0		1.1		28.5		3.9						66.5
Illinois—Number	24	5, 529, 005	11	2, 333, 764	6	1, 304, 073	4	978, 635	2	349, 949			1	562, 584
Percent	(?)	100.0		42.2		23.6		17.7		6.3				10.2
Indiana—Number	67	14, 156, 657	47	4, 730, 789	5	796, 531	3	850, 666	8	2, 029, 180	1	984, 289	3	4, 765, 202
Percent	100.0	100.0	70.1	33.4	7.5	5.6	4.5	6.0	11.9	14.3	1.5	7.0	4.5	33.7
Iowa—Number	28	2, 155, 893	16	1, 084, 373	6	677, 475	2	81, 540	3	244, 413	1	68, 092		
Percent	100.0	100.0	57.1	50.3	21.4	31.4	7.1	3.8	10.7	11.3	3.6	3.2		
Maryland—Number	70	9, 513, 206	45	2, 986, 379	7	706, 707	8	3, 963, 627	2	169, 604			8	1, 686, 889
Percent	100.0	100.0	64.3	31.4	10.0	7.8	11.4	41.7	2.9	1.8			11.4	17.2
Minnesota—Number	16	4, 125, 720	9	1, 992, 841	3	1, 249, 802	2	590, 939	2	292, 138				
Percent	(?)	100.0		48.3		30.3		14.3		7.1				
New Jersey and Pennsylvania—Number	5	10, 075, 296	1	100, 885	1	521, 059	1	462, 771					2	8, 990, 581
Percent	(?)	100.0		1.0		5.2		4.6						89.2
New York—Number	62	10, 958, 813	37	4, 537, 272	11	3, 226, 648	8	1, 323, 147	3	488, 122			3	1, 383, 624
Percent	100.0	100.0	59.7	41.4	17.7	29.4	12.9	12.1	4.8	4.5			4.8	12.6
Ohio—Number	13	1, 742, 915	2	106, 784	4	472, 525	1	882, 209					6	281, 397
Percent	(?)	100.0		6.1		27.1		50.6						16.1
Texas—Number	16	2, 124, 433	7	551, 837	3	525, 161	5	740, 935	1	306, 500				
Percent	(?)	100.0		26.0		24.7		34.9		14.4				
Virginia—Number	3 45	1, 529, 664	42	796, 664	1	7, 000			2	726, 000				
Percent	100.0	100.0	93.3	52.1	2.2	0.5			4.4	47.5				
Washington—Number	19	3, 754, 044	3	723, 224	2	546, 831	2	448, 694	5	1, 810, 510			7	224, 785
Percent	(?)	100.0		19.3		14.6		12.0		48.2				6.0
Wisconsin—Number	62	6, 319, 988	39	2, 960, 604	10	1, 349, 565	6	505, 740	6	1, 475, 288	1	28, 791		
Percent	100.0	100.0	62.9	46.8	16.1	21.4	9.7	8.0	9.7	23.3	1.6	0.5		

¹ 594 canneries reported plant location; of these, 537 reported also complete pack figures for 1937. ² Percent distribution not computed; base too small.

³ 14 firms included in Virginia that did not report other pertinent data were excluded from tables I and II.

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VEGETABLES AND DECIDUOUS FRUITS

55

FAIR LABOR STANDARDS ACT COVERAGE OF CANNERIES *

Section 13 of the Fair Labor Standards Act of 1938 exempts from both minimum-wage and maximum-hours sections of the act "any individual employed within the area of production (as defined by the Administrator) engaged in * * * canning of agricultural or horticultural commodities for market," and in canneries outside such area neither hour provisions nor overtime-pay provisions shall apply during seasonal operations during a period or periods of not more than 14 workweeks in the aggregate in any calendar year.

On April 19, 1939, the Administrator of the act redefined the term "area of production." Under this, an individual is to be regarded as employed in the area of production if he works in an establishment situated in the open country or in a rural community and which obtains all its products from farms in its immediate locality. Further definition of "open country" or "rural community" is that it shall not include any city or town of 2,500 or greater population, according to the United States census of 1930, and "immediate locality" shall not include any distance of more than 10 miles (sec. 536.2 (e)).

This definition makes it essential to know not only that a cannery is in a rural community but that the distance from the cannery to its source of raw-materials supply is not over 10 miles, before it can be stated that the employees are exempt from the minimum-wage and maximum-hours provisions of the act.

DISTANCE BETWEEN CANNERIES AND PRODUCING FARMS

As has been stated, canners may secure part of their produce from their own farms or orchards, contract with farmers for their crop at planting or fruit-growing season, or purchase from a number of farmers when the season of crop maturity arrives. The importance of each source of supply varies with yield in the different fields and with market conditions. Weather conditions may spoil produce on owned or contracted farms in one area and force purchase from distant areas. Then again, a good market for canned goods may bring about more extensive canning and purchasing of crops from a larger number of fields; a poor market may lessen the area from which produce is secured. Firms with several factories try to balance the canneries' loads by distributing crops that mature abundantly in any one area over the several canneries, giving a wider spread of source material than is possible where a cannery is separately owned. These factors make the relation between canneries and farms not a fixed one for any two periods.

In the 1939 survey each canner was asked the usual or most common distance, and the longest distance, to farms producing the important canning produce for his cannery. Time did not permit any check-up on these statements by visits to all contributing farms. Only canneries packing seasonal products in whole or in part were visited. Of 487 plants reporting, 300 were in communities of under 2,500, a slightly larger proportion than when nonseasonal canneries were included in the total. Twenty-three of these canners in the rural districts declined to make any statement concerning the distance between field and cannery. Of those reporting longest distance, 55

* See note, p. 17.

percent secured all produce from farms not over 10 miles away, 18 percent from farms some of which were from 11 to 25 miles distant. The proportion securing raw materials from farms at a greater distance decreased with the distance, 10 percent having their farthest source from 26 to 50 miles away, 6 percent from 50 to 100 miles away, and 3 percent at a distance of over 100 miles.

According to this 1939 survey of seasonal-vegetable and deciduous-fruit plants, therefore, about one-third of the seasonal canneries would be exempt from both the minimum-wage and the maximum-hours provisions of the Fair Labor Standards Act. Almost three-fifths of the plants canning one vegetable only would be exempt. About one-half of the two-vegetable canneries and one-fourth of the three-or-more-vegetable canneries come within the Administrator's definition of area of production, while the exempt group drops to 18 percent when fruits as well as vegetables are canned.

THE CANNERY WORKER

CHARACTER OF WORK AND NUMBER AND SEX OF WORKERS

Though the detailed technical aspects of canning the several products vary, the general processes to which fruits and vegetables are subjected in canning are the same. The fresh fruits and vegetables are weighed, inspected, washed, and prepared for canning. They are put into cans with or without sirup or brine. Some are blanched before canning or are passed through an exhaust box to preheat the contents in order that a partial vacuum may be created after cooking and cooling. The filled cans go to a closing or double-seaming machine where the edge of the cover and the can are crimped together and rolled. This machine is the key machine in a canning establishment, for its speed determines the amount of produce that can be handled in a given time. The cans are then processed in a process retort, if cooking at temperatures higher than boiling point is required, or they may be put into open kettles at boiling temperatures. Immediately after sterilization the cans are cooled by passing through cold water or being sprayed with it. Later they are labeled by an automatic machine, packed in boxes, and shipped. Or they may be stored, and labeled later when sold.

In the best-equipped canneries there is a minimum of hand labor. All machines are set up in a line leading to the double-seaming machine, and the product and waste are carried forward on conveyer belts. Empty cans come to canning tables by conveyers from a loft above or may come from the railroad car directly to the tables.

In canneries with a minimum of equipment, hand trucking becomes of major importance, for produce and cans must be trucked from one process to the next.

PREPARATION OF VEGETABLES

The major differences in the work to be done on any product occur in the preparation department. As these differences affect the numbers of men and women employed, the preparation processes on the several vegetables and fruits will be described in detail.

Tomatoes and Tomato Products.

Tomatoes are washed thoroughly and passed through a scalding to loosen the skins. After cooling they go to peelers' tables, where hand peelers skin the tomatoes. There is a machine peeler in use, but hand labor still is prevalent in skinning tomatoes. When tomato juice, paste, or puree is the end product, the skin, seeds, and core are separated from the pulp and juice by a machine called a cyclone, in which a revolving paddle presses the desired material through fine screening.

In the 166 canneries from which a tomato pay roll for 1938 was secured, 47 percent of the 31,329 employees were preparers. All but 447 of these were women. On no other vegetable product canned are so many women employed.

Tomatoes are often hand packed; that is, those of largest size are sorted out and put into cans by hand. Standard grades usually are machine packed. Hand packing increases the number of women in the canning department; there were 1,164, as compared with 427 men, in the tomato canneries scheduled.

Corn.

Preparing corn for canning consists of husking by hand or machine, washing, trimming the ears to remove damaged kernels, cutting or scraping the kernels off the cob by hand or machine, and again washing the kernels or the cut mixture to remove remaining pieces of silk. These operations employ 40 percent of the productive force. Because hand husking or cutting requires muscular strength, more men are employed in corn preparation than in that of other crops, men being 17½ percent of the corn preparers.

After the washed kernels are drained, they are put into cans with hot brine; the cut mixture is mixed with brine and heated in kettles and the hot mixture is put into cans. This requires 3 percent of the workers, and is done by both men and women.

Peas.

The first process in preparing peas is to feed vines with pods into a viner, which removes the vines and shells the peas. These viners are operated by men. The shelled peas pass over a series of machines that clean away leaves and foreign substances, wash the peas, and sift them according to size. The peas pass on moving belts before women inspectors who pick out anything that the machines have missed. Peas may be graded for quality in specific gravity tanks. They are then blanched and rinsed and put mechanically into cans with hot brine. Viners comprise about 17 percent of the operating staff; the preparers, nine-tenths of whom are women, are only 21 percent of the employees. Filling of cans requires but 3 percent of the workers.

Green Beans.

Preparing green or wax beans is a different process. The beans may be put through a snipping machine that cuts off the ends, but many canners prefer to have the snipping done by hand. Beans are graded according to size in a rotating cylinder grader or by hand, and pass before women inspectors on a moving belt. After a blanching

and cooling, they are cut into pieces, stripped, or packed whole by machine. When beans are canned upright, girls shape a handful into a mold which squeezes them into the can. Thirty-six percent of all workers are preparers and 6 percent fill cans. The vast majority of these workers are women.

Home work is said to be employed in New York on bean snipping. In Virginia, tomatoes are prepared and pressure-cooked at home for small canners.

Lima Beans.

Lima beans are handled in much the same way as peas, passing through a viner and then through the cleaning, sorting, and grading machines. When lima beans are picked over by color and filled into cans by hand, the proportion of women preparers is large.

Spinach.

On arrival at the cannery spinach is weighed, trimmed, and sorted for removal of roots and yellow leaves. It is inspected, washed, blanched, and rewashed before going into cans. Well over half the workers are preparers. Because can filling is done by hand, women outnumber men in this occupation, which employs about 10 percent of the workers.

Asparagus.

Asparagus is carefully graded for size by hand; it is cut and washed mechanically and then blanched. One-third of the workers are preparers. Because women cup the asparagus by hand to put it into cans, most of the can fillers are women and 27½ percent of all employees are in the canning department.

Baked Beans.

Beans first pass on moving belts before inspectors who remove all irregular beans; they then go into tanks for soaking. After blanching, they are put in cans, to each of which is added a piece of cooked pork, or tomato pulp, or both. Though women do both the sorting and the packing, the numbers required are relatively small.

Sauerkraut.

Cabbage is trimmed by hand, cored and sliced by machine. It is then packed in barrels with salt. After adequate seasoning, much of it is canned, the remainder being marketed in bulk. The handling of the brine and other general labor about the plant employs most of the workers. However, about 30 percent prepare the cabbage and 12 percent put it in cans.

Pickles.

On pickles, too, general plant work engages most of the employees. Cucumbers are sorted for size before being put in a preliminary brining vat. Here fermentation takes place for from 4 to 6 weeks. Afterward the salt content is increased and pickles may be held indefinitely.

Before the cucumbers are placed in vinegar, women sort them as they pass on a moving belt. Size grading is done by machine. Pickles are then given several water soakings until free of salt. The final operation is that of filling jars with the specific types of pickles.

PREPARATION OF FRUITS

Large Fruits.

At one time all fruits were peeled, halved, and pitted or cored by hand by women. Today peaches may be halved and pitted by hand or by machine. When done by hand, a fruit-cutting knife is used for cutting and a spoon-shaped knife to cut the flesh from the pit of a clingstone peach. One type of machine cuts and pits the peach; another type cuts the fruit in half, after which women place it in a second machine which removes the halved pits. The halved and pitted peaches, having been sorted as to ripeness, then go to a hot lye sprayer or bath, which removes the skins; a thorough washing follows, and then a blanching. The fruit passes on a belt before sorters who remove blemished pieces. Trimmers cut out bruised portions, the remainder being used for pie fruit. If peaches are to be sliced, they go to a slicing machine, a tender placing halves upside down for the machine. Other fruit is graded by shaker machines and passes by inspectors to canning tables, where women fill the cans according to color, size, and texture of fruit, and weigh them. The cans are drained of water in the cooking department and automatically filled by sirup machines, and then go to exhaust boxes and double seamers.

Apricots are still halved and pitted by hand. They are not peeled. Other processes are similar to peach canning. Pears may be peeled, halved, and cored by machine or by hand. When done by hand, they are graded after peeling; when by machine, before peeling.

Of all persons reported, almost three-tenths (28 percent) were engaged in fruit preparing and about a fifth in can filling. Occupation was not reported for a fourth of the workers. Women are 65 percent of fruit-canning employees.

Small Fruits.

Cherries are stemmed by hand or by machine. They are washed by machine, sorted by hand, and graded for size by machine. All pitting is done by automatic machines. Berries are handled as little as possible. Strawberries must be hulled unless they are picked without stems. But sorting constitutes the chief hand process on blackberries, raspberries, and other berries. Here also women comprise two-thirds of the wage earners.

Fruit Salad and Cocktail.

Fruits for salad or cocktail are put up during peach and pear season, that is, in August and September, though they may be put up at any time of the year. The fresh fruit is sliced. To this is added for salad the proper number of pieces of sliced pineapple, apricots, and maraschino cherries. Girls put the several different kinds of fruit into the cans by hand, after which the sirup is added. Cocktail fruits are handled in the same way except that the fruit is diced and grapes may be added.

Grape Juice.

Clusters of grapes are washed and passed over belts to a crushing machine. Mechanical "fingers" draw out the stems from the crushed fruit. The crushed fruit is heated, then pressed, sterilized, and bottled in carboys for storage. After 2 months or more the solids are precipitated, and the juice is bottled, labeled, and cased.

Olives.

In California olives are picked from October 1 to December 1. Olives are sensitive to bruising. If they cannot be put into vats as soon as they reach the cannery, they are stored temporarily in dilute brine. Machine grading according to size and for color is done, usually before pickling. During the pickling process olives are given several applications of dilute lye, and are finally leached with water and then stored in brine. The pickled fruit is again graded for color and quality. Women inspect the fruit as they place it in cans, removing any soft or bitter fruit. Other processes are the same as for other canned fruits, namely, exhausting and sterilizing. Women constitute about three-fifths of the employees.

OTHER OCCUPATIONS

In table VII men and women reported as preparers, can fillers, doing cooking, or handling empty cans are entered as in those departments. The warehouse department comprises workers who stack the filled cans from trays, operate the labeling machine, and pack boxes for shipment. Even in large well-equipped canneries there are many jobs that machines cannot do and that employ workers of little skill, generally called laborers. In the average cannery it is customary to shift both men and women from job to job, if the work is paid by the hour; this is especially true of smaller canneries or those fitting non-seasonal products into a seasonal pack. Workers so shifted are listed in table VII as general factory workers and may have been doing anything but the most skilled work.

Because the results of this survey were to be used by the Public Contracts Administration, men whose sole job was of a custodial or maintenance nature were not included in the 1938 survey. Comparison with 1939 figures, which included all employees, indicates that such men were very few during the canning period, as everyone had to help with the manufacture when canning was at its height. Office workers were not included in the 1938 survey, but office as well as custodial and maintenance workers were included in 1939.

NUMBERS EMPLOYED IN CANNING SEASON AND AT OTHER TIMES

Canners packing the same products do not necessarily begin canning on the same date nor end on the same date. Consequently, the course of plant operations from week to week as indicated on the charts shows a wider spread of employment than is likely to be true of any individual plant. It also lowers somewhat the height of the peak, for the peak week in different plants may be a week earlier or later though they are canning in the same locality. Table VIII shows

TABLE VII.—Occupation and sex of employees, by product canned or packed—1938 survey

Occupation and sex	Product													
	Tomatoes and tomato products		Corn		Peas		Green beans		Lima beans		Spinach		Asparagus	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Number of plants.....	166		101		121		65		5		17		15	
Total employees.....	31,329	100.0	19,486	100.0	21,091	100.0	11,359	100.0	530	100.0	6,036	100.0	5,444	100.0
Men.....	12,238	39.1	10,228	52.5	14,794	70.1	3,888	34.2	176	33.2	1,820	30.2	1,954	35.9
Women.....	19,091	60.9	9,258	47.5	6,297	29.9	7,471	65.8	354	66.8	4,216	69.8	3,490	64.1
Preparation department—Total.....	14,824	47.3	7,801	40.0	4,468	21.2	4,072	35.8	220	41.5	3,495	57.9	1,820	33.4
Men.....	447		1,366		260		137		1		240		388	
Women.....	14,377		6,435		4,208		3,935		219		3,255		1,432	
Canning department—Total.....	1,591	5.1	563	2.9	714	3.4	722	6.4	1	.2	626	10.4	1,496	27.5
Men.....	427		344		521		118		1		91		27	
Women.....	1,164		219		193		604				535		1,469	
Empty-can department—Total.....	208	.7	456	2.3	524	2.5	85	.7			12	.2		
Men.....	160		223		213		46				12			
Women.....	48		233		311		39							
Cooking department—Total.....	623	2.0	551	2.8	518	2.5	118	1.0	4	.8	91	1.5	95	1.7
Men.....	610		543		518		118		4		91		95	
Women.....	13		8											
General factory—Total.....	7,097	22.7	4,551	23.4	5,992	28.4	4,918	43.3	281	53.0	712	11.8	774	14.2
Men.....	4,842		2,676		4,549		2,143		148		353		508	
Women.....	2,255		1,875		1,443		2,775		133		329		266	
Laborers—Total.....	1,425	4.5	2,494	12.8	1,414	6.7	159	1.4			64	1.1	38	.7
Men.....	1,396		2,483		1,412		126				64		37	
Women.....	29		11		2		33						1	
Warehouse department—Total.....	1,801	5.7	1,168	6.0	1,934	9.2	471	4.1	11	2.1	222	3.7	194	3.6
Men.....	1,407		1,046		1,825		403		11		213		188	
Women.....	394		122		109		68				9		6	
Viners—Total.....			1	(¹)	3,547	16.8			8	1.5				
Men.....			1		3,544				8					
Women.....					3									
Foremen and foreladies—Total.....	246	.8	357	1.8	358	1.7	87	.8	5	.9	17	.3	22	.4
Men.....	174		338		332		70		3		9		9	
Women.....	72		19		26		17		2		8		13	
Occupation not reported—Total.....	3,514	11.2	1,544	7.9	1,622	7.7	727	6.4			797	13.2	1,005	18.5
Men.....	2,775		1,208		1,620		717				717		702	
Women.....	739		336		2		727				80		303	

¹ Less than 0.05 percent.

Occupation and sex	Product															
	Pork and beans		Sauerkraut		Pickles		Large fruits		Small fruits		Olives		Dried fruits		Jams, jellies, preserves, and fruit juices	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Number of plants	7		41		24		41		17		21		37		24	
Total employees	1,315	100.0	2,387	100.0	1,281	100.0	29,256	100.0	3,153	100.0	1,538	100.0	6,113	100.0	1,069	100.0
Men	972	73.9	1,230	51.5	543	42.4	10,290	35.2	986	31.3	576	37.5	3,015	49.3	469	43.9
Women	343	26.1	1,157	48.5	738	57.6	18,966	64.8	2,167	68.7	962	62.5	3,098	50.7	600	56.1
Preparation department—Total	175	13.3	698	29.2	215	16.8	8,164	27.9	1,147	36.4	347	22.6	684	11.2	95	8.9
Men	2		80		20		247				11		35		1	
Women	173		618		195		7,917		1,147		336		649		94	
Canning department—Total	144	11.0	281	11.8	265	20.7	6,184	21.1	257	8.2	222	14.4	667	10.9	55	5.1
Men	65		70		32		858		32		12		79		13	
Women	79		211		233		5,326		225		210		588		42	
Empty-can department—Total	11	.8	12	.5	6	.5	49	.2			3	.2	15	.2	2	.2
Men	11		10		5		47				3		15		1	
Women			2		1		2								1	
Cooking department—Total	64	4.9	83	3.5	46	3.6	457	1.6	27	.9	68	4.4	36	.6	65	6.1
Men	64		83		46		457		27		68		36		64	
Women															1	
General factory—Total	337	25.6	824	34.5	363	28.3	5,855	20.0	933	29.6	305	19.8	1,252	20.5	524	49.0
Men	296		706		245		2,389		368		121		71		118	
Women	41		118		118		3,466		565		184		1,181		406	
Laborers—Total	69	5.2	80	3.4	83	6.5	151	.5	10	.3	57	3.7	90	1.5	13	1.2
Men	69		80		83		151		10		52		90		13	
Women											5					
Warehouse department—Total	458	34.8	182	7.6	128	10.0	666	2.3	95	3.0	51	3.3	109	1.8	101	9.4
Men	435		96		59		652		88		32		94		64	
Women	23		86		69		14		7		19		15		37	
Viners—Total																
Men																
Women																
Foremen and foreladies—Total	32	2.4	34	1.4	33	2.6	77	.3	10	.3	16	1.0	31	.5	15	1.4
Men	30		31		30		6		9		10		11		11	
Women	2		3		3		71		1		6		20		4	
Occupation not reported—Total	25	1.9	193	8.1	142	11.1	7,653	26.2	674	21.4	469	30.5	3,229	52.8	199	18.6
Men			74		23		5,483		452		267		2,584		184	
Women	25		119		119		2,170		222		202		645		15	

the average number of employees per plant in the minimum week, the maximum, and all weeks combined, when the numbers employed in the various weeks are totaled for all plants canning the same product or combination of products. It indicates the variations in the important States.

Obviously, the numbers employed before and after the canning season are insignificant. When one or two seasonal vegetables are canned, an average of only 3 persons per plant (ranging in the various States from 1 to 7) have employment during the weeks in which the plant is getting ready for the canning season or is clearing up afterward. These may be master mechanics who overhaul the machinery and equipment, or shippers, or custodial men. Even when preparations for the season are in full swing, the numbers at work in these one-or-two-seasonal-vegetable plants are very small, averaging not quite 6 to the plant for all reporting and as many as 12 to the plant in only 1 State.

These numbers are increased rapidly as the canning begins until the maximum week in tomato products, for example, finds an average of 170 wage earners to the plant, and a much larger average in the Indiana plants. The average employment on peas at the peak is about the same as that for tomatoes, and does not vary in New York and Wisconsin. Corn canners and those putting up two seasonal vegetables average respectively 129 and 139 in the maximum week. In these short-season establishments the maximum number employed ranges from less than 10 times to more than 20 times the number in the week of minimum employment.

Indiana plants canning three or more seasonal vegetables, and plants in all States canning some nonseasonal vegetables in addition, being larger units, employ a few more in the off season. But at best, employment for the greater part of the year is offered to only a few persons.

Only where full-year operation is the practice of the canner are any considerable number of workers given employment over an extended period. In plants canning all kinds of seasonal and nonseasonal products, the average number employed in the week of least employment in the canning season is 95 a plant. Employment reaches 432 per plant in the maximum week, and averages 182 per plant over the year. Table VIII shows conclusively that this type of operation—a variety of products spread out over the year—also reduces the peaks when these plants can seasonal products. Under this system the maximum week requires the work of but 5 times as many employees as the minimum week, whereas in seasonal-fruit-and-vegetable plants the maximum week has 33 times the number of employees in the minimum week. In two-vegetable plants in the season the maximum is approximately 10 times the minimum, and in the one-vegetable and the all-fruit canneries it varies from less than 4 times in one State in the vegetable group to almost 40 times in the fruit group as a whole.

A clear picture of the fluctuation in numbers employed week by week in the several States on different products may be obtained from the charts already presented and discussed. In these charts the maximum number employed in any one week is represented in each State by 100, and the numbers employed in all other weeks are related to that peak.

TABLE VIII.—Average number of employees per plant during and out of the canning season in the principal canning States, by type of pack

Type of pack and State	Number of plants reporting	Before and after canning season ¹			During canning season		
		Average number of persons per plant in—			Average number of persons per plant in—		
		Week of minimum employment	Week of maximum employment	Average of all weeks	Week of minimum employment	Week of maximum employment	Average of all weeks
One seasonal vegetable only:							
Tomatoes and tomato products.....	63	2	6	3	8	170	77
California.....	4	(?)	12	1	16	188	109
Indiana.....	29	3	10	6	10	230	122
Maryland.....	22	(?)	2	1	10	86	50
Corn.....	20	1	5	3	9	129	71
Iowa.....	13	(?)	4	1	9	129	70
Maryland.....	5	3	10	7	40	145	99
Peas.....	5	1	6	3	14	176	91
Two seasonal vegetables only:							
Maryland.....	9	1	5	3	14	122	56
Wisconsin.....	9	2	8	4	12	155	65
Three or more seasonal vegetables:							
Indiana.....	7	8	21	13	30	340	150
Maryland.....	8	1	11	4	20	147	72
Fruits only.....	13				24	951	205
Seasonal fruits and seasonal vegetables.....	21				22	725	209
California.....	17				26	887	252
New York.....	4	1	9	3	10	138	59
Seasonal and nonseasonal vegetables.....	33				15	244	76
Illinois.....	3	6	14	8	25	334	150
Indiana.....	6	6	13	9	17	257	85
Maryland.....	8				19	232	85
New York.....	6	19	26	23	17	388	134
Wisconsin.....	9				8	180	59
Seasonal and nonseasonal products of all kinds.....	71				95	432	182
California.....	14				34	857	250
Illinois.....	5				198	400	285
Indiana.....	7				61	432	140
Maryland.....	8				25	306	160
New Jersey.....	3				900	2,545	1,198
New York.....	26				22	197	65
Ohio.....	4				18	107	48
Washington.....	3				13	334	87

¹ Figures cover entire range of periods reported.

² Not 1 person per plant.

INDIVIDUAL WORKER'S AMOUNT OF EMPLOYMENT

The changes in the numbers employed discussed in the foregoing pages and illustrated on chart II indicate the fluctuation in employment from week to week in the canning industry; in other words, the industry's variable demand for workers. But they do not show how many weeks of work each person employed actually had—a matter of

vital importance to the individual, though obviously he or she cannot have work for longer than the production curve of the industry warrants. To secure some information on this, the Women's Bureau transcribed from the records of 381 canneries—all that had such records—the number of weeks each individual whose name appeared on a pay roll worked for that plant in 1937.

In one area, the Stockton canning area in California, all firms were canvassed to determine how much shifting of individuals from firm to firm there was during a season. It was found that 6 percent of the wage earners had been employed in more than one cannery in the 1937 season, transfers taking place when a cannery putting up early and summer vegetables and fruits slowed down operations and another cannery in the community continued on tomato products. Whenever a community's canneries afford the worker opportunity of continuing his or her employment in such manner, there will be some extension of individual employment. Migrants, too, may work in several seasonal-product canneries in several communities. However, with the height of the season coming in August in all but pea and asparagus canneries, not many new people will be taken on when the peak is over.

There were 161,849 wage earners on the pay rolls of 1937 in the 381 plants whose record of individual workers' employment was complete. Applying to these 381 plants the 6-percent duplication as found in the Stockton area, the number of persons on these pay rolls at some time in the year averaged 399 to a plant, whereas the average number in the week of maximum employment in the 609 canneries included in the survey was about 229 to a plant. There would seem to be no question as to the abundance of the labor supply, though the quantity may be in no way indicative of the quality.

Grouping all types of plants together, a third of the employees on the pay rolls during the year worked under 4 weeks and almost a third (31 percent) worked 4 and under 8 weeks. Thus a large majority, 64 percent, had less than 8 weeks of employment in canning plants considered as a group. Sixteen percent had work for 8 and under 12 weeks, and another 7 percent for 12 and under 16. Only 3 percent worked 46 weeks or more in the year, that is, had approximately a full year's employment. And only 4 percent of the nearly 162,000 employees with weeks worked reported had employment in the same plant for three-fourths or more of the year.

How are these employment figures for the industry modified for the groups of plants packing different combinations of products? Naturally the length of the canning or packing season as shown in table III is the determining factor in the number of weeks of employment for the individual. And yet, regardless of the length of the canning season, at least one-fifth of the employees in every group worked fewer than 4 weeks, and at least one-fourth worked 4 weeks but not so many as 8. In the one-vegetable canning plants, 83 percent of the employees worked less than 8 weeks—the average period over which these canneries packed—in 1937. This proportion was reduced to 77 percent in the two-vegetable plants and to 70 percent in those canning three or more vegetables. When fruits only were canned, the proportion working under 8 weeks dropped to 58 percent; when seasonal vegetables and fruits were combined, to 55 percent.

TABLE IX.—Percent distribution of employees according to number of weeks they worked in 1937, by type of pack

Type of pack	Number of plants	Total employees			Employees with weeks worked reported															Weeks worked not reported (percent of total employees)	
		Number	Percent men	Percent women	Number	Percent ¹ who worked—															
						Under 4 weeks	4, under 8 weeks	8, under 12 weeks	12, under 16 weeks	16, under 20 weeks	20 weeks	21, under 26 weeks	26 weeks	27, under 33 weeks	33, under 39 weeks	39 weeks	40, under 46 weeks	46, under 52 weeks	52 weeks		
Total.....	381	165,643	45.7	54.3	161,849	33.3	31.1	15.5	6.7	3.8	0.7	2.3	0.3	1.3	1.0	0.1	0.8	1.1	1.9	21.6	
Seasonal vegetables only—																					
Total.....	181	53,691	51.2	48.8	51,133	38.8	39.4	14.2	3.2	1.4	.3	1.0	.1	.4	.3	(?)	.3	.3	.4	4.8	
1 vegetable.....	112	27,924	47.8	52.2	25,762	39.8	42.7	13.0	1.8	.7	.2	.5	.1	.4	.3	(?)	.2	.2	.2	7.7	
2 vegetables.....	43	15,215	58.3	41.7	15,082	36.3	40.2	15.1	3.8	1.5	.2	1.2	.1	.4	.2	(?)	.2	.4	.4	.9	
3 or more vegetables.....	26	10,552	49.8	50.2	10,289	40.0	30.1	16.0	5.9	3.0	.5	1.8	.1	.4	.5	(?)	.5	.5	.7	2.5	
Fruits only.....	13	16,389	36.6	63.4	16,134	23.3	34.3	20.6	12.3	4.0	.5	1.5	.2	.9	.6	.1	.7	.6	.5	1.6	
Seasonal fruits and seasonal vegetables.....	17	20,394	34.1	65.9	20,372	27.2	27.9	21.3	9.6	7.2	.6	2.7	.5	1.0	.6	(?)	.3	.6	.5	.1	
Seasonal and nonseasonal products of all kinds.....	126	69,372	47.0	53.0	68,414	34.2	25.1	13.6	7.3	4.6	1.2	3.2	.5	2.1	1.6	.3	1.2	1.7	3.6	1.4	
Nonseasonal vegetables.....	20	1,623	55.4	44.6	1,623	22.9	26.7	15.8	8.2	3.2	.7	3.2	.8	3.9	3.1	.4	2.2	4.3	4.7	-----	
Jams, jellies, preserves, and fruit juices.....	17	2,609	47.0	53.0	2,608	21.9	32.6	17.4	3.9	3.1	.9	1.9	.7	1.9	3.2	.2	1.6	3.5	7.0	(?)	
Olives.....	7	1,565	39.0	61.0	1,565	23.3	24.7	14.3	7.2	6.0	1.5	5.6	.9	3.0	3.6	1.3	2.8	3.1	2.7	-----	

¹ For numbers see appendix tables VII A to I, available on request.

² Less than 0.05 percent.

Though slightly larger proportions worked 8 and under 12 weeks, and 12 and under 16 weeks, as the number of vegetables canned increased, a very small proportion of workers employed in seasonal-vegetable canning worked 16 weeks or more. Seasonal-fruit canners employed 21 percent of their wage earners for 8 and under 12 weeks, and 12 percent for 12 and under 16 weeks. The seasonal-fruit-and-vegetable plants supplied 8 percent of their workers with employment for 16 to 20 weeks, though 31 percent worked 8 and under 16 weeks.

When all types of seasonal and nonseasonal products were canned, the type of pack employing much the largest group of workers, employment advantage took the form of a spread of more wage earners over a large part of the year, but even here only 11 percent of the employees had work for 26 weeks or more and only 7 percent worked for 39 to 52 weeks.

Nonseasonal plants do employ a somewhat larger proportion of workers the entire year, though the majority do not work much longer than in seasonal plants. Nine percent of the wage earners in plants canning nonseasonal vegetables had 46 weeks or more of employment; jam and jelly plants employed 10½ percent for 46 weeks or more.

Table IX shows the proportions working specific numbers of weeks in 1937, according to type of pack. In the appendix⁸ will be found such distributions by State. California shows a better distribution than other States in several types of canning.

SOURCES OF SEASONAL LABOR SUPPLY

Who are the people available for such highly seasonal short-time employment? Time did not permit interviews with individual employees to determine their status. Instead, employers were asked as to the source of their labor supply. As personnel histories of seasonal employees were not a matter of record, the statements given are the general ideas of the employers concerning their workers.

There seems to be agreement that since the depression the main dependence for seasonal labor in the majority of canneries is the immediate vicinity of the plant. The local people may be farmers or members of farmers' families, agricultural wage earners, local casual labor in nearby towns, industrial labor not busy in summer, housewives, and students. Added to these neighborhood groups are the migrants. While this term is used to describe persons who seek a living in groups by following the crops, it is used also to include groups that are brought out from a city by the canning company and housed in company shelters during the season.

Men Seasonal Workers.

The character of the community determines largely the proportion of workers of any specific status. Throughout the Middle West almost all plants reported the employment of men who were farmers or local casual workers. Migrants were missing in Iowa, and were mentioned by relatively few plants in other middle western States. In Indiana and Illinois many canneries gave employment to industrial workers from nearby factories. Wisconsin canneries made use of student labor.

⁸ See tables VII A to VIII I, in mimeographed appendix to this report, available from Women's Bureau on request.

In Maryland local casual workers were the source of male labor reported by the larger number of rural and town canneries. They may have been employed as oyster shuckers, crab pickers, on the roads, about the filling stations, or at any odd jobs the community afforded. But almost half the plants reported migrants. These were of two types. Some came up from the South in groups under boss leadership and had been working on other crops; others were obtained by cannery management from Baltimore and also camped near the cannery.

In New York State the village and town casual workers and the farmers each constituted an important source of male labor supply. However, in some canneries agricultural wage earners, and in others the industrial workers, were important sources of supply.

California canneries reported more migrant men than did canneries in other States. Some of these men had worked in fruit-packing houses, on grapes, in pruning and trimming orchards, or in other work related to California's crops. In Washington the local casual male worker was likely to be a cannery worker during the summer.

Woman Labor Supply.

There was more uniformity in the States in the source of woman labor supply than in the source of the seasonal male labor supply. Housewives in the town or village and from nearby towns were reported as a dependable source by over four-fifths of all canning plants, and farmers' wives and daughters by over three-fifths of the plants. Further, the town housewives comprised three-fourths or more of the women seasonal workers in 44 percent of the plants giving them employment. More than one-tenth of the plants reported women casual laborers, meaning chiefly women available for domestic service, and women industrial workers. Approximately 20 percent of all plants reporting employed migrant women. The larger number of such plants were in California, the women having worked earlier in the year on crops elsewhere in the State. In Maryland the groups brought into the State from the South were made up of women as well as men, and women were brought from Baltimore. In New York canning firms brought women, chiefly from Italian families, from Buffalo, Rochester, and Syracuse, and housed them in labor camps. Girl students formed a small proportion of the canning force in all States.

HOURS WORKED

METHOD OF SECURING DATA

Women's Bureau field investigators consulted each employer visited in 1938 concerning a period in that year when his plant was actively canning one of the major products. From the pay-roll period chosen, occupation, regular hours worked, overtime hours worked, method of wage payment, rate of pay, and earnings were transcribed for each employee. Any deductions for gloves, uniforms, and supplies were noted, as were additions due to minimum-wage orders. As the week selected was prior to October 24, 1938, the date on which the Fair Labor Standards Act became effective, the wages and hours of workers, though affected by State laws, represented conditions before the

Federal Act went into effect. In 1939 a similar week's records were secured for the same plants, wherever possible, substitute plants being scheduled when canneries surveyed in 1938 had not operated in 1939. These 1939 pay rolls reflected the changes brought about by the Fair Labor Standards Act.

While numerous canneries have excellent pay-roll records, the pocket notebook still is the only bookkeeping record in many others. When wage earners are paid by the hour, a record necessarily is kept of the hours they work. When workers are employed at piece rates, some factories keep a record of the amount of work done, the time worked, and the amount paid; others record only the work done and the amount paid. In some places the worker still is given a token or small metal piece for each bucket of prepared produce turned in. Some cannery workers require women to turn in the tokens at the end of each day, in order that a record of earnings may be kept by the day. In other plants they are turned in to the office as the worker wants money, in which case there is no record of days or hours worked and no hourly earnings can be computed. Cannery workers without bookkeepers may simply record the total of what was paid out to piece workers without any note as to number employed.

In California, though higher rates must be paid for overtime, the amount of overtime need not be entered on the pay roll. Some firms had adopted this method of computation for women piece workers, optional under State regulations:

To count daily hours of regular time (1 to 8 a day) as 1 hour each; of overtime (9 to 12 hours) as $1\frac{1}{4}$ hours each; and of double time (over 12 hours) as 2 hours each. Thus 14 hours worked in one day would comprise 8 at the regular rate (8), 4 at $1\frac{1}{4}$ the rate (5), and 2 at double the rate (4), a total of 17 hours, instead of 14, to be entered on the pay roll as the hours worked.

Totalled for the week with daily differences not shown, it was not possible for the Women's Bureau field agents to separate regular and overtime hours without referring to each worker's time card.

Wherever the token system of payment or a punch-card record of amount done was the only accounting of piece workers, hours worked and hourly earnings of such workers could not be ascertained.

HOURS WORKED, 1938, AND STATE HOUR REGULATION

State regulations limiting the hours of work of women were in effect at the time of the 1938 survey in canneries in California, Illinois, Pennsylvania, New York, and Wisconsin. Minnesota exempted canneries from the 54-hour law for a period not exceeding 75 days in the year. Overtime rates for hours in excess of 8 a day were required in California, Pennsylvania, and Washington (union plants only), and for more than 9 hours in Wisconsin. The Illinois law set maximum hours for women workers at 10 a day, 60 a week, from June 1 to October 15. In New York the maximum hours are 10 a day, 60 a week, from June 15 to October 15.

Hours worked are given in the tables following by the type of product on which the hours were worked. A total is not made for all products, as a pay roll on two or more different products was taken from the same firm when it canned important quantities of such products.

TABLE X.—Hours worked by women, 1938 season, by State—TOMATOES AND TOMATO PRODUCTS

Hours worked in pay-roll week recorded	Number and percent ¹ of women																			
	Total		California		Illinois		Indiana		Iowa		Maryland		New Jersey		New York		Ohio		Virginia	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total women employees	18,965		2,763		517		7,336		456		2,601		276		2,924		785		1,307	
Women with hours reported	11,147	100.0	2,762	100.0	256	100.0	3,764	100.0	353	100.0	600	100.0	274	100.0	2,192	100.0	785	100.0	161	100.0
Percent distribution	100.0		24.8		2.3		33.8		3.2		5.4		2.5		19.7		7.0		1.4	
Under 40	5,884	52.8	2,212	80.1	163	63.7	1,989	52.8	96	27.2	340	56.7	249	90.9	482	22.0	251	32.0	102	63.4
40	64	.6	1		7		40		1		4				7		3		1	
Over 40, under 42	667	6.0	197		13		186		4		129		3		53		71		11	
42	32	.3	3				14		1		4				9		1			
Over 42, under 44	306	2.7	86		5		71		10		5		5		102		18		4	
44	69	.6	4		33		14				1				6		7		4	
Over 44, under 48	749	6.7	156		7		310		26		29		7		162		48		4	
48	43	.4	5		3		19		1						14		1			
Over 48, under 56	1,453	13.0	83		12		595	15.8	136	38.5	63		5		319	14.6	223	28.4	17	10.6
56	45	.4			1		14		1		2				3		24			
Over 56, under 60	508	4.6	7		10		201		58	16.4	15		1		151		62		3	
60, under 80	1,253	11.2	5		2		301		17		7		4		826		37.7		15	
80 and over	74	.7	3				10		2		1				58					

¹ Computed for chief groups only.

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VEGETABLES AND DECIDUOUS FRUITS

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Tomatoes and Tomato Products.

Canneries putting up tomatoes and tomato products gave employment for not as much as 40 hours to 44 percent of their employees during an active canning week. Only in New York State and certain States with relatively few employees did less than a third work short hours. The proportion of women working under 40 hours (53 percent) was greater than the proportion of men, the latter being 36 percent. Some of the wage earners had work for less than 20 hours.

Another considerable group of women, 13 percent, worked over 48 and under 56 hours. Men in a similar proportion worked these hours. States in which a workweek of this length was important were Iowa and Ohio, where respectively 39 and 28 percent of the women worked such hours; in Indiana and New York, respectively 16 and 15 percent had a week of that duration.

A third concentration occurred at 60 and under 80 hours. New York State employed 38 percent of its women tomato workers a week of this length, and from 8 to 10 percent of the women in Indiana, Virginia, and Ohio worked such hours. Further, New York employed 3 percent of its women workers 80 hours or more. Much larger proportions of men worked these long hours.⁹

The State laws were observed closely in tomato canneries in the period for which pay-roll records were taken. While the State maximum for New York canneries from June 15 to October 15 was a 10-hour day and 60-hour week, firms could secure permits for a 12-hour day and a 66-hour week for women between June 25 and August 5. Apparently, few New York canneries availed themselves of that privilege, though concentration did occur at 60 hours. In California only 4 percent of the women in tomato canning worked longer than 48 hours, after which overtime rates began.

Corn.

Hours were short for one-third of the wage earners in corn canneries in the pay-roll week recorded in the 1938 corn season. In practically every State more women than men had short hours. However, though some two-fifths of the women corn canners worked under 40 hours, one-fifth worked over 48 and under 56, and another fifth worked over 56 hours. Almost one-half the men worked over 56 hours. The week was especially long for women in Maryland, Minnesota, and New York, where State laws exempted canneries or permitted women to work 60 to 66 hours.

Peas.

In pea canneries 64 percent of the women worked under 40 hours, 8 percent worked over 44 and under 48, and 9 percent worked over 48 and under 56 hours. Seven percent worked 60 and under 80 hours. The larger proportions working long hours were in New York, Iowa, Maryland, and Indiana. Only New York State had an hour law that governed canneries, and there 60 to 66 hours were permitted. In Wisconsin few canneries had any need of the emergency days of 11

⁹ For hours of all employees and of men, see tables VIII A to VIII I in mimeographed appendix to this report, available from Women's Bureau on request.

TABLE XI.—Hours worked by women, 1938 season, by State—CORN

Hours worked in pay-roll week recorded	Number and percent ¹ of women																	
	Total		Illinois		Indiana		Iowa		Maryland		Minnesota		New York		Washington		Wisconsin	
	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent
Total women employees	9,258		1,775		1,066		895		1,053		3,163		885		95		326	
Women with hours reported	8,904	100.0	1,710	100.0	1,053	100.0	876	100.0	796	100.0	3,163	100.0	885	100.0	95	100.0	326	100.0
Percent distribution	100.0		19.2		11.8		9.8		8.9		35.5		9.9		1.1		3.7	
Under 40	3,640	40.9	856	50.1	491	46.6	513	58.6	155	19.5	984	31.1	275	31.1	95	100.0	271	83.1
40	54	.6	34		11				2		4		3				19	
Over 40, under 42	257	2.9	33		104	9.9	11		1		57		32				10	
42	22	.2	7		4						1							
Over 42, under 44	381	4.3	153		60		10		23		104		31					
44	64	.7	13		35		1		3		11		1					
Over 44, under 48	633	7.1	175	10.2	36		61		37		298	9.4	26					
48	86	1.0	1		3						3		79	8.9				
Over 48, under 56	1,835	20.6	393	23.0	201	19.1	98	11.2	170	21.4	890	28.1	81	9.2			2	
56	42	.5			3						5		32					
Over 56, under 60	479	5.4	41		44		27		44		274		25				24	
60, under 80	1,211	13.6	4		58		148	16.9	301	37.8	528	16.7	172	19.4				
80 and over	200	2.2			3		5		60		4		128	14.5				

¹ Computed for chief groups only.

TABLE XII.—Hours worked by women, 1938 season, by State—PEAS

Hours worked in pay-roll week recorded	Number and percent ¹ of women																					
	Total		California		Illinois		Indiana		Iowa		Maryland		Minnesota		New York		Virginia		Washington		Wisconsin	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total women employees	6,297		116		340		185		112		645		927		1,426		29		229		2,288	
Women with hours reported	6,293	100.0	116	100.0	340	100.0	185	100.0	112	100.0	644	100.0	927	100.0	1,425	100.0	29	100.0	229	100.0	2,286	
Percent distribution	100.0		1.8		5.4		2.9		1.8		10.2		14.7		22.6		0.5		3.6		36.3	
Under 40	4,024	63.9	116	100.0	257	75.6	115	62.2	74	66.1	275	42.7	591	63.8	694	48.7	29	100.0	199	86.9	1,674	73.2
40	41	.7									4		1		3						33	
Over 40, under 42	155	2.5			8		2				25		9		29				2		80	
42	44	.7					2				5		1		12						24	
Over 42, under 44	180	2.9			4						33		27		20				5		91	
44	30	.5					1				11		2		5						11	
Over 44, under 48	516	8.2			67	19.7	5		2		71	11.0	44		124				3		200	
48	28	.4			1						1		6		5						15	
Over 48, under 56	535	8.5			1		18		17	15.2	67	10.4	121	13.1	162	11.4			19		130	
56	26	.4							1		1		6		15						3	
Over 56, under 60	198	3.1			2		2		1		56		51		63						23	
60, under 80	450	7.2					23	12.4	16	14.3	90	14.0	66		254	17.8					1	
80 and over	66	1.0					17		1		5		2		39				1		1	

¹ Computed for chief groups only.

hours and weeks of 60 hours permitted by law; all but a few women worked less than the 54-hour week that is the usual maximum.

Men worked much longer hours than did women in pea canneries. More than half worked in excess of 56 hours in the pay-roll week scheduled. These men were found in every State of importance in the canning of peas. The only other group of any size worked under 40 hours in the week.

Green Beans.

Undertime was more prevalent than overtime in the canneries packing green beans in 1938. However, 18 percent of all employees worked 60 hours or more in the pay-roll period covered. The proportion of men was especially large in New York and in Wisconsin, where respectively 59 percent and 53 percent worked 60 hours or more. None of the women in Wisconsin, but 15 percent of those in New York, worked such long hours.

Spinach.

Reports of hours worked on spinach were secured in California and Maryland canneries. About 40 percent of the men in California worked over 48 hours, and a much larger proportion did so in Maryland. The proportion of women working overtime in California was about 15 percent. Hour records of women piece workers in Maryland were too few to be indicative of hours worked.

Asparagus.

Reports from asparagus canneries in California and Illinois showed that many employees had worked less than 40 hours. However, 22 percent of the men worked over 48 and under 56 hours and more than 10 percent worked 60 hours or more. Fewer than 5 percent of the women exceeded 48 hours.

Sauerkraut.

New York and Wisconsin are the important sauerkraut States. In New York these canneries could employ women for 10 hours daily and 60 hours weekly from September 1 to December 1. However, only 18 percent of all employees in firms reporting worked as long as 60 hours in the week of 1938, and very few women were employed as many as 60 hours. In Wisconsin, plants could employ women 10 hours a day during emergency periods of not more than 4 weeks a year, weekly hours not to exceed 55. No women were employed so long as 56 hours in the week.

Pickles.

Only about 8 percent of all employees in pickle factories in 4 States worked as long as 56 hours in the pay-roll period in 1938. These employees were all men, 12 percent of whom worked 60 hours and over. Women employees exceeded 48 hours only in California, where the proportion was 37 percent. In that State hours over 8 and up to 12 were compensated at time and a quarter, and hours over 12 at double time.

TABLE XIII.—Hours worked by women, 1938 season, by State—GREEN BEANS

Hours worked in pay-roll week recorded	Number and percent ¹ of women															
	Total		California		Indiana		Iowa		Maryland		New York		Washington		Wisconsin	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Total women employees.....	7,450		344		561		131		1,560		1,785		347		2,722	
Women with hours reported.....	7,029	100.0	344	100.0	171	100.0	131	100.0	1,529	100.0	1,785	100.0	347	100.0	2,722	100.0
Percent distribution.....	100.0		4.9		2.4		1.9		21.8		25.4		4.9		38.7	
Under 40.....	3,212	45.7	217	63.1	127	74.3	43	32.8	783	51.2	693	38.8	196	56.5	1,153	42.4
40.....	37	.5			1		6		7		8				15	
Over 40, under 42.....	183	2.6	3		6		4		26		32		5		107	
42.....	34	.5							4		7				23	
Over 42, under 44.....	213	3.0	3		6		4		16		101		3		80	
44.....	54	.8	1		1		21	16.0	1		24				6	
Over 44, under 48.....	795	11.3	4		5		34	26.0	59		211	11.8	35	10.1	447	16.4
48.....	137	1.9	1				1		3		110		11		11	
Over 48, under 56.....	1,708	24.3	77	22.4	14		9		451	29.5	241	13.5	96	27.7	820	30.1
56.....	24	.3	10						1		2				11	
Over 56, under 60.....	208	3.0	22		5		9		30		96		1		45	
60, under 80.....	401	5.7	6		6				125		260	14.6			4	
80 and over.....	23	.3							23							

¹ Computed for chief groups only.

TABLE XIV.—Hours worked by women, 1938 season, by State—SPINACH; ASPARAGUS; SAUERKRAUT

Hours worked in pay-roll week recorded	Number and percent ¹ of women																			
	Spinach						Asparagus								Sauerkraut					
	Total		California		Maryland		Total		California		Illinois		New Jersey and Pennsylvania		Total		New York		Wisconsin	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total women employees	4,169		3,824		345		3,490		3,076		395		19		754		423		331	
Women with hours reported	3,906	100.0	3,823	100.0	83	100.0	3,489	100.0	3,075	100.0	395	100.0	19	100.0	753	100.0	422	100.0	331	100.0
Percent distribution	100.0		97.9		2.1		100.0		88.1		11.3		0.5		100.0		56.0		44.0	
Under 40	2,381	61.0	2,357	61.7	24	28.9	2,405	68.9	2,089	67.9	297	75.2	19	100.0	241	32.0	111	26.3	130	39.3
40	11	.3	10		1		64	1.8	46		18				1	.1	1			
Over 40, under 42	57	1.5	57				295	8.5	238		57				15	2.0	11		4	
42	17	.4	17				66	1.9	59		7				15	2.0	1		14	
Over 42, under 44	48	1.2	48				182	5.2	177		5				15	2.0	3		12	
44	15	.4	15				23	.7	23						18	2.4	18			
Over 44, under 48	565	14.5	554	14.5	11		279	8.0	273		6				187	24.8	117	27.7	70	21.1
48	150	3.8	150				19	.5	19						17	2.3	16		1	
Over 48, under 56	357	9.1	347	9.1	10		105	3.0	101		4				222	29.5	122	28.9	100	30.2
56	15	.4	15				1	(²)	1											
Over 56, under 60	244	6.2	243		1		33	.9	33						3	.4	3			
60, under 80	46	1.2	40		36	43.4	17	.5	16						18	2.4	18			
80 and over															1	.1	1			

¹ Computed for chief groups only.

² Less than 0.05 percent.

TABLE XV.—Hours worked by women, 1938 season, by State—PICKLES; OLIVES

Hours worked in pay-roll week recorded	Number and percent ¹ of women																	
	Pickles										Olives							
	Total		California		Illinois		Ohio		Wisconsin		Total		California		New Jersey and Pennsylvania		Ohio	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Total women employees.....	627		145		162		174		146		774		663		73		38	
Women with hours reported.....	623	100.0	141	100.0	162	100.0	174	100.0	146	100.0	760	100.0	663	100.0	73	100.0	24	100.0
Percent distribution.....	100.0		22.6		26.0		27.9		23.4		100.0		87.2		9.6		3.2	
Under 40.....	222	35.6	19		78	48.1	53	30.5	72	49.3	416	54.7	377	56.9	15	20.5	24	100.0
40.....	67	10.8			25		34	19.5	8		21	2.8	1		20	27.4		
Over 40, under 42.....	95	15.2	36	25.5	11		24		24	16.4	11	1.4	6		5			
42.....	6	1.0					1		5		5	.7	5					
Over 42, under 44.....	72	11.6	13		3		40	23.0	16		133	17.5	133	20.1				
44.....	2	.3			2						5	.7	3		2			
Over 44, under 48.....	102	16.4	16		43	26.5	22		21	14.4	67	8.8	55		12	16.4		
48.....	5	.8	5								2	.3	2					
Over 48, under 56.....	52	8.3	52	36.9							92	12.1	73		19	26.0		
56.....											8	1.1	8					

¹ Computed for chief groups only.

TABLE XVI.—Hours worked by women, 1938 season, by State—LARGE FRUITS; SMALL FRUITS

Hours worked in pay-roll week recorded	Number and percent ¹ of women													
	Large fruits						Small fruits							
	Total		California		Washington		Total		California		New York		Washington	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total women employees	18,966		17,140		1,826		2,167		933		252		982	
Women with hours reported	18,954	100.0	17,129	100.0	1,825	100.0	2,166	100.0	932	100.0	252	100.0	982	100.0
Percent distribution	100.0		90.4		9.6		100.0		43.0		11.6		45.3	
Under 40	9,228	48.7	8,676	50.7	552	30.2	1,169	54.0	478	51.3	133	52.8	558	56.8
40	326	1.7	320		6		7	.3	2		1		4	
Over 40, under 42	799	4.2	741		58		59	2.7	4		4		51	
42	141	.7	135		6		9	.4	2		2		5	
Over 42, under 44	800	4.2	564		236	12.9	375	17.3	309	33.2	16		50	
44	94	.5	90		4		31	1.4	30				1	
Over 44, under 48	1,989	10.5	1,507	8.8	482	26.4	262	12.1	103		5		154	15.7
48	328	1.7	319		9		31	1.4	3		14		14	
Over 48, under 56	3,034	16.0	2,879	16.8	155		190	8.8	1		61	24.2	128	
56	255	1.3	253		2									
Over 56, under 60	1,053	5.6	997		56		12	.6			2		10	
60, under 80	906	4.8	648		258	14.1	21	1.0			14		7	
80 and over	1	(²)			1									

¹ Computed for chief groups only.

² Less than 0.05 percent.

TABLE XVII.—Hours worked by women, 1938 season, by State—JAMS, JELLIES, PRESERVES, AND FRUIT JUICES; PORK AND BEANS

Hours worked in pay-roll week recorded	Number and percent ¹ of women																			
	Jams, jellies, preserves, and fruit juices														Pork and beans					
	Total		California		Illinois		New Jersey and Pennsylvania		New York		Ohio		Washington		Total		Illinois		Indiana	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total women employees	670		294		47		70		74		17		168		332		45		287	
Women with hours reported	643	100.0	291	100.0	47	100.0	46	100.0	74	100.0	17	100.0	168	100.0	218	100.0	45	100.0	173	100.0
Percent distribution	100.0		45.3		7.3		7.2		11.5		2.6		26.1		100.0		20.6		79.4	
Under 40	247	38.4	97	33.3	21	44.7	18	39.1	23	31.1			88	52.4	162	74.3	23	51.1	139	80.3
40	171	26.6	141	48.5	20	42.6	1		1		6	35.3	2		6	2.8	2		4	
Over 40, under 42	36	5.6	5						27	36.5	1		3		1	.5			1	
42	1	.2	1																	
Over 42, under 44	20	3.1			3		8						9		9	4.1	2		7	
44	26	4.0					19	41.3	3				4		3	1.4			3	
Over 44, under 48	82	12.8	19		3				12		3		45	26.8	27	12.4	13	28.9	14	
48	11	1.7	1						8				2		5	2.3	3		2	
Over 48, under 56	34	5.3	13								7	41.2	14		4	1.8	1		3	
56													1		1	.5	1			
Over 56, under 60	2	.3	2																	
60, under 80	13	2.0	12										1							

¹ Computed for chief groups only.

Olives.

Work beyond 48 hours was done chiefly by men in California olive plants, though 44 percent of all men worked under 40 hours a week. Very few women were employed longer than 48 hours.

Fruits.

When the larger fruits were canned in California and Washington—both States in which overtime rates were paid to women after 8 hours a day—28 percent of the women worked over 48 hours. Twelve percent of the women worked over 44 and including 48 hours. Almost half the women, but only 19 percent of the men, worked under 40 hours. Another 19 percent of the men were employed over 48 to 56 hours, and 43 percent exceeded 56 hours.

In the States reporting on the small fruits, cherries and berries, there was much less overtime. However, 23 percent of the men employees worked over 56 hours in the pay period recorded.

Nonseasonal Products.

Hours were shorter on nonseasonal than on seasonal products. In pork-and-bean packing only 5 percent of the men and only one woman were reported to have worked as long as 56 hours. Almost three-fourths of the women and two-fifths of the men worked under 40 hours in the week.

In California and Illinois jam and jelly plants few men and no women worked over 40 hours in the pay-roll period taken in 1938. Though numbers reported were small, hours were longer in Washington, New York, Ohio, and Pennsylvania and New Jersey.

HOURS WORKED, SEASON OF 1939

When the second visit was paid to seasonal-product canneries, the Fair Labor Standards Act had been in effect the greater part of a year. The hour records, therefore, were subject to the influence of that act. As has been stated, canneries in rural communities and within 10 miles of the fields from which produce was secured were exempt from the law, and others were permitted 14 weeks of overtime without overtime pay while canning perishable or seasonal fresh fruits or vegetables.

Table XVIII shows the hours worked by all employees in an active week in 1938 and one in 1939 (not in all cases identical plants), by type of product packed and for the principal producing States.

In 1938 tomato and tomato-product canneries in Indiana employed about half their workers more than 44 hours in a week of active canning. In 1939 this proportion was increased to 58 percent. In the later year 37 percent, as compared with 27 percent in the earlier year, worked over 56 hours. Considerably fewer persons were employed short hours, that is, hours under 40, in 1939. As many Indiana tomato canneries were in rural communities, this condition may reflect differences in flow of tomatoes in the 2 years. In Maryland tomato canneries, also, increased proportions of workers were employed over 44 hours and over 56 hours in 1939. This situation also prevailed in California and Illinois, though not in other tomato-canning States

TABLE XVIII.—Hours worked by all employees, 1938 and 1939 seasons, by product and by State (identical plants in most cases)

TOMATOES AND TOMATO PRODUCTS

Hours worked in pay-roll week recorded	Employees with hours worked reported															
	California				Illinois				Indiana				Iowa			
	1938		1939		1938		1939		1938		1939		1938		1939	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	4,544	100.0	8,049	100.0	487	100.0	984	100.0	8,728	100.0	10,710	100.0	603	100.0	1,593	100.0
Under 40	3,015	66.4	3,528	43.8	259	53.2	197	20.0	3,788	43.4	3,357	31.3	190	31.5	839	52.7
40	21	.5	80	1.0	8	1.6	24	2.4	60	.7	78	.7	1	.2	4	.3
Over 40, under 42	261	5.7	243	3.0	19	3.9	15	1.5	314	3.6	318	3.0	10	1.6	34	2.1
42	15	.3	81	1.0	4	.8	1	.1	39	.4	44	.4	1	.2	3	.2
Over 42, under 44	146	3.2	241	3.0	10	2.0	28	2.8	173	2.0	464	4.3	16	2.6	36	2.3
44	27	.6	332	4.1	35	7.2	9	.9	28	.3	254	2.4	1	.2	4	.3
Over 44, under 48	302	6.6	623	7.7	21	4.3	74	7.5	572	6.6	615	5.7	38	6.3	87	5.5
48	14	.3	115	1.4	3	.6	12	1.2	46	.5	301	2.8	1	.2	4	.3
Over 48, under 56	352	7.7	1,051	13.1	51	10.5	186	18.9	1,313	15.0	1,290	12.0	163	27.0	287	18.0
56	4	(1)	78	1.0	2	.4	3	.3	40	.4	76	.7	1	.2	3	.2
Over 56, under 60	109	2.4	525	6.5	17	3.5	190	19.3	484	5.5	910	8.5	78	12.9	65	4.1
60, under 80	175	3.9	1,000	12.4	58	11.9	190	19.3	1,509	17.3	2,148	20.1	91	15.1	181	11.4
80 and over	103	2.3	152	1.9			55	5.6	362	4.1	855	8.0	12	2.0	46	2.9

Hours worked in pay-roll week recorded	Employees with hours worked reported—Continued											
	Maryland				New York				Virginia			
	1938		1939		1938		1939		1938		1939	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	1,988	100.0	2,550	100.0	4,121	100.0	4,828	100.0	661	100.0	611	100.0
Under 40	1,006	50.6	1,049	41.1	758	18.4	1,318	27.3	342	51.7	378	61.9
40	19	.9	10	.4	11	.3	23	.5	6	.9	6	1.0
Over 40, under 42	180	9.0	113	4.4	63	1.5	297	6.2	31	4.7	8	1.3
42	12	.6	23	.9	11	.3	30	.6	2	.3	4	.7
Over 42, under 44	49	2.5	76	3.0	112	2.7	157	3.3	12	1.8	24	3.9
44	6	.3	50	2.0	8	.2	46	1.0	14	2.1	5	.8
Over 44, under 48	98	4.9	236	9.3	202	4.9	187	3.9	44	6.7	23	3.8
48	6	.3	17	.7	19	.5	92	1.9	3	.5	4	.7
Over 48, under 56	264	13.3	463	18.2	427	10.4	413	8.6	76	11.5	50	8.2
56	7	.3	15	.6	5	.1	16	.3	3	.5		
Over 56, under 60	94	4.7	129	5.1	243	5.9	240	5.0	33	5.0	43	7.0
60, under 80	228	11.5	346	13.6	1,475	35.8	1,456	30.2	92	13.9	64	10.5
80 and over	19	.9	23	.9	787	19.1	553	11.5	3	.5	2	.3

¹ Less than 0.05 percent.

TABLE XVIII.—Hours worked by all employees, 1938 and 1939 seasons, by product and by State (identical plants in most cases)—Continued

CORN

Hours worked in pay-roll week recorded	Employees with hours worked reported															
	Illinois				Indiana				Iowa				Maryland			
	1938		1939		1938		1939		1938		1939		1938		1939	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	3,826	100.0	3,773	100.0	2,414	100.0	2,860	100.0	1,860	100.0	1,753	100.0	2,180	100.0	2,129	100.0
Under 40	1,462	38.2	1,526	40.4	912	37.8	1,114	39.0	883	47.5	460	26.2	395	18.1	718	33.7
40	38	1.0	10	.3	18	.7	10	.3	1	(¹)	3	.2	4	.2	4	.2
Over 40, under 42	73	1.9	187	5.0	146	6.0	76	2.7	28	1.5	52	3.0	21	1.0	22	1.0
42	11	.3	36	1.0	11	.4	19	.7	3	.1	2	.1	1	(¹)	4	.2
Over 42, under 44	195	5.1	63	1.7	134	5.6	127	4.4	39	2.1	54	3.1	41	1.9	51	2.4
44	15	.4	35	.9	94	3.9	84	2.9	3	.1	5	.3	5	.2	27	1.3
Over 44, under 48	369	9.6	202	5.4	121	5.0	197	6.9	110	5.9	81	4.6	70	3.2	137	6.4
48	11	.3	25	.7	9	.4	18	.6	4	.2	2	.1	2	(¹)	4	.2
Over 48, under 56	706	18.5	413	10.9	340	14.1	328	11.5	195	10.5	232	13.2	335	15.4	238	11.2
56	8	.2	13	.3	8	.3	8	.3	6	.3	—	—	8	.3	2	.1
Over 56, under 60	158	4.1	285	7.6	111	4.6	76	2.7	84	4.5	124	7.1	118	5.5	87	4.1
60, under 80	571	14.9	665	17.6	340	14.1	448	15.7	348	18.7	509	29.0	806	37.0	676	31.8
80 and over	209	5.5	313	8.3	170	7.0	355	12.4	156	8.4	229	13.1	374	17.2	159	7.5

Hours worked in pay-roll week recorded	Employees with hours worked reported—Continued											
	Minnesota				New York				Wisconsin			
	1938		1939		1938		1939		1938		1939	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	6,239	100.0	5,766	100.0	1,634	100.0	2,268	100.0	594	100.0	2,844	100.0
Under 40	1,804	28.9	2,372	41.1	404	24.7	598	26.4	374	63.0	1,391	48.9
40	8	.1	7	.1	3	.2	7	.3	2	.3	3	.1
Over 40, under 42	119	1.9	161	2.8	35	2.1	26	1.1	38	6.4	101	3.6
42	5	(¹)	19	.3	—	—	8	.4	10	1.7	6	.2
Over 42, under 44	149	2.4	230	4.0	35	2.1	24	1.1	10	1.7	92	3.2
44	20	.3	30	.5	2	.1	6	.3	1	.1	5	.2
Over 44, under 48	431	6.9	318	5.5	39	2.4	77	3.4	21	3.5	120	4.2
48	10	.2	41	.7	81	5.0	9	.4	—	—	14	.5
Over 48, under 56	1,429	22.9	783	13.6	134	8.2	250	11.0	20	3.4	180	6.3
56	18	.3	11	.2	32	2.0	5	.2	—	—	12	.4
Over 56, under 60	486	7.8	402	7.0	37	2.2	84	3.7	35	5.9	100	3.5
60, under 80	1,274	20.4	1,017	17.6	334	20.4	428	18.9	50	8.4	561	19.7
80 and over	486	7.8	375	6.5	498	30.5	746	32.9	33	5.6	259	9.1

¹ Less than 0.05 percent.

TABLE XVIII.—Hours worked by all employees, 1938 and 1939 seasons, by product and by State (identical plants in most cases)—Continued
PEAS

Hours worked in pay-roll week recorded	Employees with hours worked reported															
	Illinois				Indiana				Iowa				Minnesota			
	1938		1939		1938		1939		1938		1939		1938		1939	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total.....	1, 276	100. 0	1, 347	100. 0	680	100. 0	1, 138	100. 0	432	100. 0	193	100. 0	4, 229	100. 0	3, 719	100. 0
Under 40.....	539	42. 2	658	48. 8	275	40. 4	411	36. 1	188	43. 5	153	79. 3	1, 545	36. 5	1, 256	33. 8
40.....	2	. 1	13	1. 0	1	. 1	7	. 6					7	. 2	9	. 2
Over 40, under 42.....	25	1. 9	35	2. 6	8	1. 2	18	1. 6	7	1. 6	2	1. 0	107	2. 5	70	1. 9
42.....	2	. 1	4	. 3	3	. 4	1	. 1					11	. 3	9	. 2
Over 42, under 44.....	31	2. 4	45	3. 3	4	. 6	14	1. 2	1	. 2	3	1. 6	114	2. 7	75	2. 0
44.....			13	1. 0	3	. 4	169	14. 9	1	. 2			12	. 3	8	. 2
Over 44, under 48.....	132	10. 3	92	6. 8	28	4. 1	89	7. 8	9	2. 1	14	7. 3	247	5. 8	128	3. 4
48.....	6	. 5	5	. 4	11	1. 6	6	. 5	1	. 2			21	. 5	6	. 2
Over 48, under 56.....	163	12. 8	153	11. 4	86	12. 6	106	9. 3	38	8. 8	7	3. 6	512	12. 1	309	8. 3
56.....	2	. 1	3	. 2	2	. 3	2	. 2	1	. 2			15	. 4	7	. 2
Over 56, under 60.....	64	5. 0	68	5. 0	17	2. 5	30	2. 6	16	3. 7	1	. 5	193	4. 6	178	4. 8
60, under 80.....	193	15. 1	187	13. 9	144	21. 2	160	14. 1	100	23. 1	7	3. 6	876	20. 7	902	24. 3
80 and over.....	117	9. 2	71	5. 3	98	14. 4	125	11. 0	70	16. 2	6	3. 1	569	13. 5	762	20. 5

Hours worked in pay-roll week recorded	Employees with hours worked reported—Continued															
	New York				Virginia				Washington				Wisconsin			
	1938		1939		1938		1939		1938		1939		1938		1939	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total.....	3, 642	100. 0	3, 421	100. 0	100	100. 0	182	100. 0	441	100. 0	1, 617	100. 0	7, 580	100. 0	6, 121	100. 0
Under 40.....	1, 213	33. 3	1, 231	36. 0	81	81. 0	74	40. 7	253	57. 4	663	41. 0	2, 897	38. 2	2, 380	38. 9
40.....	10	. 3	19	. 6	1	1. 0					5	. 3	45	. 6	38	. 6
Over 40, under 42.....	55	1. 5	85	2. 5	3	3. 0			8	1. 8	48	3. 0	152	2. 0	79	1. 3
42.....	14	. 4	11	. 3			2	1. 1			6	. 4	30	. 4	13	. 2
Over 42, under 44.....	48	1. 3	56	1. 6	1	1. 0	10	5. 5	10	2. 3	32	2. 0	152	2. 0	162	2. 6
44.....	9	. 2	52	1. 5	2	2. 0	1	. 5	1	. 1	13	. 8	23	. 3	40	. 7
Over 44, under 48.....	189	5. 2	167	4. 9	2	2. 0	11	6. 0	9	2. 0	86	5. 3	409	5. 4	265	4. 3
48.....	13	. 4	21	. 6	1	1. 0					15	. 9	27	. 4	24	. 4
Over 48, under 56.....	314	8. 6	332	9. 7	9	9. 0	8	4. 4	47	10. 6	214	13. 2	571	7. 5	583	9. 5
56.....	24	. 7	15	. 4							14	. 9	21	. 3	10	. 2
Over 56, under 60.....	168	4. 6	195	5. 7			4	2. 2	6	1. 4	93	5. 8	267	3. 5	248	4. 1
60, under 80.....	830	22. 8	735	21. 5			49	26. 9	69	15. 6	323	20. 0	1, 347	17. 8	1, 334	21. 8
80 and over.....	755	20. 7	502	14. 7			22	12. 1	38	8. 6	105	6. 5	1, 639	21. 6	945	15. 4

TABLE XVIII.—Hours worked by all employees, 1938 and 1939 seasons, by product and by State (identical plants in most cases)—Continued
GREEN BEANS

Hours worked in pay-roll week recorded	Employees with hours worked reported											
	California				Iowa				Maryland			
	1938		1939		1938		1939		1938		1939	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	551	100.0	235	100.0	212	100.0	475	100.0	2,624	100.0	2,245	100.0
Under 40	238	43.2	105	44.7	62	29.2	80	16.8	1,132	43.1	1,069	47.6
40	1	.4	1	.4	6	2.8	1	.2	17	.6	3	.1
Over 40, under 42	5	.9	4	1.7	5	2.3	10	2.1	86	3.3	70	3.1
42	2	.4	1	.4	3	1.4	1	.2	12	.5	15	.7
Over 42, under 44	11	2.0	5	2.3	5	2.3	10	2.1	38	1.4	105	4.7
44	4	.7	2	.9	21	9.9	1	.2	4	.1	127	5.7
Over 44, under 48	17	3.1	37	15.7	42	19.8	48	10.1	140	5.3	105	4.7
48	2	.4	1	.4	3	1.4	1	.2	15	.6	6	.3
Over 48, under 56	119	21.6	44	18.7	16	7.5	61	12.8	648	24.7	211	9.4
56	12	2.2	5	2.1	1	.5	15	3.2	8	.3	8	.4
Over 56, under 60	53	9.6	21	9.0	17	8.0	4	.8	103	3.9	67	3.0
60, under 80	89	16.2	24	10.2	18	8.5	177	37.3	326	12.4	382	17.0
80 and over	1	.1	12	5.1	16	7.5	67	14.1	95	3.6	77	3.4

Hours worked in pay-roll week recorded	Employees with hours worked reported—Continued											
	New York				Washington				Wisconsin			
	1938		1939		1938		1939		1938		1939	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	2,572	100.0	2,598	100.0	592	100.0	534	100.0	3,716	100.0	2,977	100.0
Under 40	814	31.6	1,399	53.8	292	49.3	50	9.4	1,369	36.8	1,649	55.4
40	8	.3	59	2.3	2	.3	4	.7	18	.5	13	.4
Over 40, under 42	37	1.4	96	3.7	5	.8	12	2.2	130	3.5	107	3.6
42	8	.3	18	.7	2	.3	2	.4	25	.7	20	.7
Over 42, under 44	112	4.4	76	2.9	14	2.4	18	3.4	102	2.7	103	3.5
44	24	.9	18	.7	1	.1	1	.2	7	.2	75	2.5
Over 44, under 48	238	9.3	176	6.8	51	8.6	25	4.7	485	13.1	148	5.0
48	114	4.4	16	.6	14	2.4	1	.2	12	.3	43	1.4
Over 48, under 56	342	13.3	300	11.5	137	23.1	191	35.8	923	24.8	291	9.8
56	10	.4	8	.3	3	.5	10	1.9	14	.4	38	1.3
Over 56, under 60	142	5.5	105	4.0	44	7.4	103	19.3	100	2.7	161	5.4
60, under 80	587	22.8	273	10.5	30	5.0	115	21.5	335	9.0	209	7.0
80 and over	136	5.3	54	2.1	3	.5	3	.6	196	5.3	120	4.0

TABLE XVIII.—Hours worked by all employees, 1938 and 1939 seasons, by product and by State (identical plants in most cases)—Continued

Hours worked in pay-roll week recorded	ASPARAGUS								SPINACH								OLIVES			
	Employees with hours worked reported								Employees with hours worked reported								Employees with hours worked reported			
	California				Illinois				California				Maryland				California			
	1938		1939		1938		1939		1938		1939		1938		1939		1938		1939	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Total.....	4,880	100.0	6,092	100.0	507	100.0	1,278	100.0	5,369	100.0	4,780	100.0	238	100.0	613	100.0	1,116	100.0	1,006	100.0
Under 40.....	2,655	54.4	3,370	55.3	334	65.9	1,042	81.5	2,949	54.9	2,194	45.9	64	26.9	437	71.3	578	51.8	535	53.2
40.....	74	1.5	60	1.0	18	3.6	8	.6	45	.8	239	5.0	2	.8	1	.2	14	1.2	71	7.1
Over 40, under 42.....	300	6.1	200	3.3	61	12.0	25	2.0	91	1.7	501	10.5	2	.8	15	2.4	25	2.2	68	6.8
42.....	70	1.4	47	.8	8	1.6	4	.3	38	.7	20	.4	5	.8	6	.5	18	1.8	28	2.8
Over 42, under 44.....	277	5.7	272	4.5	6	1.2	15	1.2	120	2.2	144	3.0	2	.8	10	1.6	150	13.4	83	8.3
44.....	45	.9	187	3.1	20	3.9	23	1.8	680	12.7	476	10.0	15	6.3	25	4.1	102	9.1	46	4.6
Over 44, under 48.....	531	10.9	739	12.1	3	.6	5	.4	170	3.2	39	.8	1	.4	27	4.4	5	.4	4	.4
48.....	68	1.4	99	1.6	1	.1	1	.1	27	.5	22	.5	3	.5	17	1.5	2	.2	12	1.2
Over 48, under 56.....	500	10.2	715	11.7	23	4.5	47	3.7	596	11.1	600	12.6	31	13.0	41	6.7	149	13.4	81	8.1
56.....	25	.5	38	.6	1	.1	1	.1	27	.5	22	.5	3	.5	17	1.5	2	.2	12	1.2
Over 56, under 60.....	126	2.6	130	2.1	5	1.0	8	.6	317	5.9	116	2.4	3	1.3	22	3.6	22	2.0	12	1.2
60 under 80.....	204	4.2	207	3.4	20	3.9	65	5.1	250	4.7	233	4.9	113	47.5	11	1.8	37	3.3	32	3.2
80 and over.....	5	.1	28	.5	8	1.6	29	2.3	31	.6	21	.4	5	2.1	26	2.6	26	2.6	26	2.6

Hours worked in pay-roll week recorded	LARGE FRUITS								SMALL FRUITS											
	Employees with hours worked reported								Employees with hours worked reported											
	California				Washington				California				New York				Washington			
	1938		1939		1938		1939		1938		1939		1938		1939		1938		1939	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Total.....	26,511	100.0	32,651	100.0	2,628	100.0	3,478	100.0	1,292	100.0	1,759	100.0	412	100.0	381	100.0	1,447	100.0	1,186	100.0
Under 40.....	10,430	39.3	9,251	28.3	712	27.1	1,233	35.5	579	44.8	1,488	84.6	190	46.1	193	50.7	706	48.8	937	79.0
40.....	368	1.4	194	.6	7	.3	47	1.4	9	.7	9	.5	2	.5	10	2.6	10	.7	6	.5
Over 40, under 42.....	998	3.8	837	2.6	88	3.3	409	11.8	19	1.5	38	2.2	5	1.2	1	.3	67	4.6	37	3.1
42.....	199	.8	186	.6	6	.2	4	.1	4	.3	7	.4	2	.5	7	.5	7	.5	6	.5
Over 42, under 44.....	881	3.3	1,212	3.7	267	10.2	241	6.9	320	24.8	60	3.4	27	6.6	11	2.9	59	4.1	76	6.4
44.....	147	.6	170	.5	9	.3	9	.3	33	2.6	26	1.5	3	.7	1	.3	5	.3	46	3.9
Over 44, under 48.....	2,356	8.9	2,543	7.8	563	21.4	330	9.5	189	14.6	32	1.8	13	3.2	13	3.4	202	14.0	42	3.5
48.....	440	1.6	373	1.1	19	.7	15	.4	10	.8	9	.5	16	3.9	2	.5	23	1.6	14	1.2
Over 48, under 56.....	4,680	17.7	5,113	15.7	330	12.6	490	14.1	77	6.0	53	3.0	72	17.5	21	5.5	235	16.2	13	1.1
56.....	321	1.2	244	.7	5	.2	23	.7	1	(¹)	7	.4	5	1.2	11	2.9	2	.1	2	.2
Over 56, under 60.....	1,968	7.4	3,635	11.1	129	4.9	328	9.4	12	.9	7	.4	5	1.2	15	3.9	61	4.2	3	.3
60 under 80.....	3,450	13.0	8,417	25.8	458	17.4	317	9.1	39	3.0	30	1.7	45	10.9	78	20.5	64	4.4	16	1.3
80 and over.....	273	1.0	476	1.5	35	1.3	32	.9	3	.2	2	.1	32	7.8	40	10.5	6	.4	2	.2

¹ Less than 0.05 percent.

reporting hours. Table XVIII shows, however, that a fair-sized proportion of employees in every State worked more than 56 hours in a busy week of tomato canning in each year.

Corn canneries in Indiana, Iowa, and Wisconsin had increased proportions of workers employed over 44 hours a week and over 56 hours a week in 1939 as compared with 1938. In these States the larger number of corn canneries were in rural communities. In Illinois, Maryland, and New York canneries there was some decrease in numbers employed over 44 hours, but in both years from one-fifth to more than one-half of all employees in the States reporting worked more than 56 hours.

The proportions working over 44 hours and over 56 hours decreased from the 1938 to the 1939 season in every pea-cannery State but Minnesota, Virginia, and Washington. Even so, in every State but Iowa 43 percent or more of the employees worked longer than 44 hours in 1939. While about 25 percent worked over 56 hours in Illinois and Indiana, 41 percent or more were employed these hours in Wisconsin, Minnesota, Virginia, and New York.

Overtime continued in the 1939 season in California asparagus canneries to about the same extent as in 1938, though overtime rates were paid to women after 48 hours by State law and to all workers in unionized plants. In canneries putting up peaches, pears, and other large fruits, there were increases in the proportions working over 44 hours and over 56 hours in California, though not in Washington. Over 63 percent of all California employees worked over 44 hours, and 38 percent worked over 56 hours, in the active pay-roll week in 1939. In Washington the proportions were 44 percent and 19 percent, respectively.

This survey did not reveal the individual canner's efforts to attain a greater spread in the maturing period of crops, nor any plans for holding part of the crops in cold storage when delivery exceeds 48-hour capacity. The figures indicate very little success in restricting hours during the busy weeks to 48 or 56.

No hour data for 1938 were secured in Arkansas, Florida, and Texas. The records obtained for 1939 indicate that Arkansas tomato canneries had a poor season, for almost seven-eighths (87 percent) of the employees in an active week worked less than 40 hours. About 6 percent worked over 44 and including 56 hours, and 5 percent exceeded 56. In the few Florida canneries packing tomatoes, 55 percent of the employees worked under 40 hours, 9 percent over 44 to 56 hours, and 27 percent over 56 hours. Texas tomato canneries had somewhat smaller proportions working the short hours and larger proportions the very long ones, but employment for 44 hours, or for between 44 and 56 hours, was less common. One-third worked over 56 hours (almost one-tenth, even 80 or more) and not far from one-half (47 percent) worked under 40 hours in an active week of tomato canning in Texas.

The few reports of hours secured from Arkansas plants that canned peas indicated that almost half the employees worked over 56 hours. On string beans, however, more than three-fifths (62 percent) of the Arkansas workers were employed fewer than 40 hours in this week of active canning. Only 5 percent worked over 56 hours. Texas string-bean canneries employed 43 percent of the workers under 40 hours, 33 percent 44 to 56 hours, and 21 percent over 56.

Hour records for 1,457 workers on spinach were secured from Arkansas canners, the number being almost equally divided between canneries in rural communities and those in towns of 2,500 and over. In the State as a whole almost two-thirds of the workers were employed fewer than 40 hours. More than one-fourth worked 44 to 56 hours, and only 3 percent exceeded 56. While the numbers reported as canning spinach in Texas were small, the largest proportion (two-thirds) worked under 40 hours, and one-fifth worked over 56 hours.

TABLE XIX.—Hours worked by all employees, 1939 season, in Arkansas, Florida, and Texas ¹

TOMATOES AND TOMATO PRODUCTS; STRING BEANS; SPINACH

Hours worked in pay-roll week recorded	Employees with hours worked reported													
	Tomatoes and tomato products						String beans				Spinach			
	Arkansas		Florida		Texas		Arkansas		Texas		Arkansas		Texas	
	Number	Percent ²	Number	Percent ²	Number	Percent ²	Number	Percent ²	Number	Percent ²	Number	Percent ²	Number	Percent ²
Total.....	405	100.0	170	100.0	1,161	100.0	978	100.0	239	100.0	1,457	100.0	87	100.0
Under 40.....	351	86.7	94	55.3	545	46.9	603	61.7	102	42.7	930	63.8	59	67.8
40.....	1		7		6		6				36			
Over 40, under 42.....	6				23		17		2		34		2	
42.....					7		8				11			
Over 42, under 44.....	3		3		22		34		5		25		3	
44.....			4		4		8		3		5			
Over 44, under 48.....	10		7		48		99	10.1	24	10.0	96		3	
48.....	1				2		4		12		6			
Over 48, under 56.....	11		9		108	9.3	120	13.2	39	16.3	210	14.4	1	
56.....	2				4		16		2		59			
Over 56, under 60.....	10		7		62		21		7		17			
60, under 80.....	10		32	18.8	221	19.0	28		38	15.9	24		15	17.2
80 and over.....			7		109	9.4	5		4		4		3	

¹ These States were not covered in the 1938 survey.
² Computed for chief groups only.

HOURLY EARNINGS

SYSTEMS OF WAGE PAYMENT

The degree of mechanization of cannery equipment determines the extent to which workers are paid on an hourly basis. Wherever the preparation of vegetables or fruits is done by hand, piece work, or specific rates for amount of produce prepared, continues. Canners believe that hand processes, in which output depends largely on individual speed of operation, cannot be paid at a time rate without heavy loss of output. But wherever the machine speed is fixed, the individual worker must keep pace with the machine, and time rates prevail. Key men and women usually are paid by the week or month. Consequently, piece rates are found largely in tomato canneries, in spinach and asparagus plants, on apricots and cling peaches, and on berries. In 1938, 38 percent of the employees in tomato canneries included in the survey were piece workers; 59 percent in pinach canneries and 54 percent in asparagus canneries were piece

workers. Less than 1 percent in pea canneries, less than 2 percent in kraut plants, and but 3 percent in corn canneries worked by the piece. Forty-five percent of the workers on large fruits and 30 percent of those on small fruits were piece workers.

In some canneries a bonus is paid in addition to the regular rate. This is based on output or on attendance and usually is paid at the end of the season to a group of workers or to the entire staff. One canning company is offering an annual wage agreement to certain employees.

Cannery workers' rates and earnings in the plants surveyed were influenced by State minimum-wage orders and by union agreements in 1938 and by the Fair Labor Standards Act in 1939.

STATE MINIMUM-WAGE PROVISIONS FOR CANNERIES

In 9 of the 13 States included in the 1938 survey State minimum-wage laws for women were in effect, but only the States whose laws dated earlier than 1918 had fixed rates for cannery workers. These States are Wisconsin, Minnesota, California, and Washington.

The Wisconsin cannery order has the following provisions for women and minors 17 years of age and over:

Experienced worker is defined as a woman or minor who has worked as much as one season or part of a season in the industry. Inexperienced women and minors must not exceed 25 percent of total number of women and minors normally employed.

Rates: Experienced workers—22½ cents an hour in cities of 5,000 population and over; 20 cents an hour in cities of under 5,000.

Inexperienced workers—16 cents an hour.

Overtime rates: Experienced adults—Time and one-half the basic hourly rate for over 9 hours of work; experienced minors—18 cents an hour.

If piece rates are paid, they must yield to 50 percent of the group so employed 3 cents an hour more than the minimum rates provided for experienced workers.

Hours: Regular—9 a day, 54 a week. Exceptions: 8 emergency days of 11 hours each in pea canneries and 8 emergency days of 10 hours each in other canneries; 60-hour week.

Before and after season: Women—9 a day and 50 a week; minors—8 a day and 40 a week.

Minnesota has issued a blanket order applying to all industries in the State but four. For experienced workers 18 years and over it is as follows:

Cities of 50,000 or over:

Week of 36 to 48 hours, \$15.00; over 48 or under 36 hours, 36 cents an hour.

Cities and towns of over 5,000, under 50,000:

Week of 36 to 48 hours, \$13.50; over 48 or under 36 hours, 30 cents an hour.

Towns of 3,000 to 5,000:

Week of 36 to 48 hours, \$12.00; over 48 or under 36 hours, 27 cents an hour.

Towns of under 3,000:

Week of 36 to 48 hours, \$11.00; over 48 or under 36 hours, 24 cents an hour.

Lower rates are fixed for the first 3 months and the second 3 months of experience, and for minors.

The California Industrial Welfare Department has developed a unique system of enforcement of its cannery wage orders in the more than 20 years such orders have been in effect. Since July 1920, experienced women and minors have been paid 33½ cents an hour

for 8 hours a day and 48 hours a week. Those with experience of less than 2 weeks on green fruits and vegetables and of less than 4 weeks on dried fruits are inexperienced and receive 25 cents an hour. The overtime rate is one and one-fourth times the regular rate for over 8 to 12 hours a day, and double the rate for over 12 hours. For work on one day of rest, one and one-fourth times the regular rate must be paid for the first 8 hours and double such one and one-fourth rate for over 8 hours.

Because canners claimed that a time-rate system lowered the output of women who had always been employed on a piece-rate basis, the commission adopted the piece-rate audit system method of payment. Employers have the choice of paying women on the minimum time-rate basis cited above or on a piece-rate basis. If the employer elects to pay any group on the piece-rate method, the following requirements must be met: Piece rates paid on a process must yield to 50 percent of the workers on that process an average of 33½ cents an hour. All piece-rate pay rolls must be audited weekly by a representative of the Industrial Welfare Division, the expenses involved in such audit being borne by the employers who have chosen the piece-rate system. In 1937, 101 plants filed such piece-rate audit agreements. For discussion of this system see also p. 103.

Washington also has had minimum-wage orders for canneries for many years. The order issued in May 1937 calls for the payment of 37½ cents an hour.

UNION ORGANIZATION

The largest numbers of firms reporting union agreements were in California and Washington. Here 46 percent or more of the plants included were organized. On July 30, 1937, members of California Processors and Growers, Inc., entered into agreement with local cannery workers' unions. The basic rates agreed upon were as follows:

Women hour workers—42½ cents an hour.

Women piece workers—44 cents an hour (average for 50 percent of the workers).

Men, all workers—52½ cents an hour.

In Washington the basic hourly rate for women is 40 cents in the union agreements. Where piece rates are paid, 50 percent of all piece workers must average earnings of 42½ cents an hour. Cooks must get 57½ and 52½ cents an hour, sirup workers 52½ cents, and double-seamer men and mechanics 62½ cents an hour in a 1938 agreement. Overtime is paid at time and a half for over 8 to 12 hours and double time for over 12 hours in both Pacific coast States.

Some cannery employee organization is found in every State surveyed except Virginia, Iowa, and Minnesota. In New York and Maryland the firm-employee organization would appear to be unaffiliated with a larger union. Each of the middle western States but Iowa and Minnesota reported three to five organized canneries among those surveyed. Both New Jersey and Pennsylvania had some organized plants; union contracts with firms were not secured in these areas.

FAIR LABOR STANDARDS ACT

The provisions of the Fair Labor Standards Act became effective after the close of the vegetable and deciduous-fruit canning season in 1938. The effect of the minimum rate of 25 cents an hour may be seen in the 1939 reports from canneries that considered themselves outside the area of production—that is, subject to the act.

HOURLY EARNINGS, SEASON OF 1938¹⁰

Comparison of the average hourly earnings of men and women wage earners is made in table XX by the product on which they were employed in 1938. Men's average earnings were 35 cents or less on corn, peas, and green beans; they were over 35 and under 40 cents on tomatoes, kraut, and pork and beans. Average earnings for men were 48 cents on small fruits (cherries and berries) and 50 to 52.5 cents on asparagus and spinach, on pickles, olives, and large fruits, and on jams, jellies, and juices.

Women workers averaged less than 25 cents on green beans only. Average earnings were 25 and under 30 cents on corn and peas, 30 and under 35 cents on tomatoes, kraut, and pork and beans, and 35 and under 40 cents on pickles, jams and jellies, and olives. On small fruits they were 42.8 cents, on asparagus and spinach between 43 and 44 cents, and on large fruits, 45 cents.

TABLE XX.—Average hourly earnings of total, men, and women employees, 1938 season, by product canned

Product	Number of plants	Number and earnings of employees reported					
		Total number	Average hourly earnings (cents)	Men		Women	
				Number	Average hourly earnings (cents)	Number	Average hourly earnings (cents)
Tomatoes and tomato products.....	165	23,021	33.8	11,867	36.6	11,154	30.8
Corn.....	101	18,910	30.9	10,006	34.2	8,904	27.1
Peas.....	121	20,990	32.3	14,697	34.9	6,293	26.1
Green beans.....	64	10,768	27.5	3,739	33.6	7,029	24.2
Spinach.....	16	5,608	45.9	1,701	50.9	3,907	43.7
Asparagus.....	15	5,411	46.7	1,930	52.5	3,481	43.4
Pork and beans.....	6	1,131	38.3	913	39.7	218	32.8
Sauerkraut.....	27	1,625	34.7	875	38.1	750	30.7
Pickles.....	22	1,088	43.2	465	50.8	623	37.5
Large fruits.....	41	29,137	47.6	10,184	52.3	18,953	45.0
Small fruits.....	17	3,151	44.5	985	48.3	2,166	42.8
Jams, jellies, preserves, and fruit juices.....	26	1,174	44.2	531	52.0	643	37.9
Olives.....	18	1,262	44.2	502	51.4	760	39.5

Type of Plant.

When earnings are considered by type of cannery packing specific products, it would appear at times that earnings are higher in canneries packing a wide range of product. For example, workers in plants that confined their operations to one or more seasonal vegetables during

¹⁰ For distribution of all employees on major products, by State, and average hourly earnings for all employees and for men, by State, see tables X to XVII in mimeographed appendix to this report, available from Women's Bureau on request.

the year averaged not more than 30.1 cents an hour when canning tomatoes, whereas when seasonal and nonseasonal products of various kinds were produced the average earnings when canning tomatoes were 36.3 cents an hour. This increase in earnings was found in all

the large tomato-canning States but Maryland. In Maryland the plants canning only tomatoes paid amounts that averaged 23.3 cents an hour, whereas the canner of many products paid amounts that averaged tomato workers but 21.4 cents an hour in 1938.

While earnings on corn also were higher in multiple-product plants than when corn was the sole product or one of a few seasonal vegetables, this condition was not found uniformly in all important corn-canning States. The difference by type of plant in the States canning peas was so slight as to indicate no difference in wage standards on this product.

A further study of earnings by product and State would seem to indicate that the gain in earnings to workers in the multiple-product plants is due more to a systematized organization of work than to higher wage rates.

Table XXI shows average earnings by type of plant and product canned.

Tomatoes and Tomato Products.

Of the 31,144 wage earners employed in the tomato canneries scheduled, hourly earnings were reported for 23,021. No record of hours was obtainable for 8,123, most of whom were women tomato preparers in Indiana, Maryland, Virginia, and New York. Had it been possible to compute hourly earnings for these preparers, the figures for women might have been quite different.

Seventeen percent of all men and women reporting earned under 25 cents an hour; by far the largest proportions of these were employed in the States of Maryland and Virginia. Fourteen percent earned 25 cents an hour and 10 percent earned 30 cents. A total of 39 percent of the wage earners with hour records earned less than 30 cents an hour. In Ohio no one, in California only 5 percent of the workers, earned less than 30 cents an hour in the week recorded in 1938. In New Jersey 14 percent, and in Iowa 30 percent, earned under 30 cents. The proportion ran as high as 43 percent in New York State, 45 percent in Indiana, 51 percent in Illinois, 93 percent in Maryland, and over 99 percent in Virginia. It is doubtful whether the inclusion of more women preparers in the records would have reduced the percentage earning low wages in these States, for very few Maryland or Illinois cannery women earned 30 cents an hour, though in Indiana there was a concentration at 30 cents.

Table XXII furnishes further evidence that State standards of wages determine earnings differentials on tomatoes. In Ohio tomato canneries the hourly earnings of men had an arithmetic average of 47.8 cents; no fewer than 65 percent of the men earned 45 cents an hour.

This heavy concentration at 45 cents caused the first quartile (the point marking off the lowest one-fourth when all earnings are arranged

TABLE XXI.—Average hourly earnings of all employees, 1938 season, by type of plant and product canned

Product	1 seasonal vegetable only			2 seasonal vegetables only			3 or more seasonal vegetables only		
	Number of plants	Number of employees	Average hourly earnings (cents)	Number of plants	Number of employees	Average hourly earnings (cents)	Number of plants	Number of employees	Average hourly earnings (cents)
Tomatoes and tomato products.....	87	6,506	28.1	12	899	25.4	13	1,768	30.1
Corn.....	33	4,494	29.0	29	6,778	31.6	15	2,312	28.3
Peas.....	17	3,133	33.3	32	6,037	32.7	20	2,227	28.2
Green beans.....	4	426	25.5	10	1,365	24.8	11	1,493	31.4
Spinach.....							1	227	41.7
Asparagus.....	3	1,068	51.3	2	645	45.5	1	266	42.4

Product	Fruits only			Seasonal fruits and seasonal vegetables			Nonseasonal vegetables		
	Number of plants	Number of employees	Average hourly earnings (cents)	Number of plants	Number of employees	Average hourly earnings (cents)	Number of plants	Number of employees	Average hourly earnings (cents)
Tomatoes and tomato products.....				4	1,202	49.3			
Peas.....				2	111	28.3			
Green beans.....				1	81	19.4			
Spinach.....				7	3,235	47.5			
Asparagus.....				5	2,207	49.1			
Sauerkraut.....							21	1,356	35.5
Pickles.....							13	430	37.4
Large fruits.....	12	9,225	48.1	16	11,410	47.7			
Small fruits.....	4	1,614	47.4	4	444	39.4			
Jams, jellies, preserves, and fruit juices.....							1	15	37.2

Product	Olives			Jams, jellies, preserves, and fruit juices			Seasonal and nonseasonal products of all kinds		
	Number of plants	Number of employees	Average hourly earnings (cents)	Number of plants	Number of employees	Average hourly earnings (cents)	Number of plants	Number of employees	Average hourly earnings (cents)
Tomatoes and tomato products.....							49	2,646	36.3
Corn.....							24	5,326	32.2
Peas.....							50	9,482	32.7
Green beans.....							38	7,403	27.3
Spinach.....							8	2,146	43.8
Asparagus.....							4	1,225	39.6
Pork and beans.....							6	1,131	38.3
Sauerkraut.....							6	269	30.7
Pickles.....				2	159	32.7	7	499	51.4
Large fruits.....							13	8,502	46.8
Small fruits.....							9	1,093	42.9
Jams, jellies, preserves, and fruit juices.....				19	877	46.8	6	282	41.6
Olives.....	13	756	43.3	2	35	41.2	3	471	45.9

according to amount, from lowest to highest) and the third quartile (similarly setting off the highest one-fourth) to differ by less than 5 cents, being respectively 45 cents and 49.6 cents. Another case of concentration of men's earnings was in California, where the average was 53 cents, with the first quartile in the 52.5-cent group. In contrast to these higher levels is the average of 24 cents an hour for men in Maryland, with the first quartile at 20 cents and the third at 27.5 cents; and in Indiana the average for men was 32.4 cents, with the first quartile at 30 cents and the third quartile at 35 cents.

In some States there was more spread in earnings of women workers on tomatoes than in earnings of men. In California women averaged 42.2 cents, with the first quartile at 35.7 cents and the third at 46.8 cents. In Ohio, there was a very narrow spread of women's earnings on tomatoes, almost half being 35 cents an hour; the arithmetic average was 36.3 cents an hour, the first quartile was 35 cents, and the third was 38.9 cents. In Maryland the average hourly earnings of women were just below 20 cents, the first quartile was 16.8 cents, and the third quartile 22.4 cents. Hourly earnings of Indiana women had concentrations at 25, 27½, and 30 cents.

TABLE XXII.—Distribution of total, men, and women employees according to hourly earnings, 1938 season, and figures for women by State

TOMATOES AND TOMATO PRODUCTS

Hourly earnings (cents)	Number reported			Number of women with hourly earnings as specified in—								
	All employees	Men	Women	California	Illinois	Indiana	Iowa	Maryland	New Jersey	New York	Ohio	Virginia
Total.....	23,021	11,867	11,154	2,762	257	3,764	353	600	274	2,191	785	168
Average earnings (cents).....	33.8	36.6	30.8	42.2	29.7	25.8	29.9	19.9	32.0	27.6	36.3	15.4
Under 20.....	1,261	544	717	27	25	238	-----	241	-----	29	-----	157
20.....	1,494	728	766	8	2	471	-----	151	-----	126	-----	8
21, under 22.....	83	1	82	15	-----	29	-----	24	-----	14	-----	-----
22, under 23.....	992	141	851	20	-----	225	-----	93	-----	513	-----	-----
23, under 25.....	184	2	182	42	-----	91	-----	31	-----	18	-----	-----
25.....	3,294	1,030	2,264	21	78	1,133	93	15	12	909	-----	3
26, under 27.....	82	4	78	21	-----	10	16	7	12	12	-----	-----
27, under 28.....	1,303	528	775	16	76	639	20	5	8	11	-----	-----
28, under 29.....	94	6	88	26	-----	12	19	9	12	10	-----	-----
29, under 30.....	151	35	116	26	1	19	29	5	23	13	-----	-----
30.....	2,347	1,390	957	38	17	614	57	4	96	38	93	-----
31, under 32.....	92	2	90	37	2	11	6	3	18	6	7	-----
32, under 33.....	587	474	113	28	6	15	21	1	21	8	13	-----
33, under 34.....	972	704	268	186	3	15	20	3	18	15	8	-----
34, under 35.....	161	8	153	111	-----	8	21	-----	3	5	5	-----
35.....	2,731	2,021	710	95	-----	101	25	-----	10	109	370	-----
36, under 37.....	188	59	129	64	-----	8	5	2	11	17	22	-----
37, under 38.....	349	170	179	71	-----	65	6	-----	3	5	29	-----
38, under 39.....	179	21	158	78	1	11	6	1	3	11	47	-----
39, under 40.....	202	4	198	82	-----	7	7	-----	1	49	52	-----
40.....	1,032	714	318	75	-----	7	1	-----	4	164	66	-----
41, under 42.....	125	3	122	64	-----	5	-----	-----	2	30	21	-----
42, under 43.....	534	36	498	470	1	4	-----	1	1	3	18	-----
43, under 44.....	274	11	263	244	-----	4	-----	-----	4	5	6	-----
44, under 45.....	140	10	130	118	-----	5	-----	-----	3	-----	4	-----
45.....	748	650	98	72	-----	4	-----	1	-----	9	8	-----
46, under 47.....	129	22	107	56	45	2	-----	1	-----	1	1	-----
47, under 48.....	163	85	78	62	-----	5	-----	-----	1	7	4	-----
48, under 50.....	142	47	95	88	-----	-----	-----	-----	1	1	4	-----
50.....	182	102	80	71	-----	2	1	1	-----	4	1	-----
51, under 52.....	119	20	99	53	-----	-----	-----	-----	-----	43	3	-----
52, under 53.....	1,166	1,097	69	64	-----	1	-----	-----	1	1	2	-----
53 and over.....	1,521	1,198	323	313	-----	2	-----	-----	2	5	1	-----

Corn.

Hourly earnings could be computed for almost all workers on corn canning. Nine percent earned under 25 cents an hour, 18 percent earned 25 cents, and 12½ percent earned 26 and under 30 cents. In Illinois, the most important corn-canning State according to the Census of 1937, 40 percent of the wage earners earned 30 cents an hour, and 15 percent earned less than 30 cents, in the week recorded in 1938. The concentration was chiefly among women workers and was at 30 cents an hour. In Maryland, which ranks fifth in corn canning, more than a third (36 percent) of all workers earned under 25 cents, a fourth earned 25 cents, and another fourth earned 26 and under 30 cents; thus seven-eighths of all those employed earned less than 30 cents an hour.

Average earnings of men on corn in middle-western States other than Illinois had a limited range, from 31.8 cents in Wisconsin to 36.8 cents in Minnesota. In Maryland the average earnings of men were but 27.4 cents an hour. Women's earnings in Maryland and Wisconsin averaged between 21 and 22 cents an hour in 1938, in New York and Indiana over 24 cents, and in Illinois and Minnesota over 29 cents.

TABLE XXIII.—*Distribution of total, men, and women employees according to hourly earnings, 1938 season, and figures for women by State*

Hourly earnings (cents)	Number reported			Number of women with hourly earnings as specified in—							
	All employees	Men	Women	Illinois	Indiana	Iowa	Maryland	Minnesota	New York	Washington	Wisconsin
Total	18,910	10,006	8,904	1,710	1,053	876	796	3,163	885	95	326
Average earnings (cents)	30.9	34.2	27.1	29.3	24.8	25.7	21.7	29.4	24.6	35.8	21.1
Under 20	8	5	3			3					
20	988	66	922		100	93	486		72		171
21, under 22	2		2								2
22, under 23	609	11	598	260		1	213				124
23, under 24	27		27								27
24, under 25	64	2	62					62			
25	3,381	690	2,691	113	834	365	92	482	803		2
26, under 27	7	3	4			1		2	1		
27, under 28	2,352	633	1,719	182	118	405	3	1,008	3		
28, under 29	6	4	2	2							
29, under 30	8	5	3					3			
30	3,400	1,629	1,771	1,014		2	2	747	6		
31, under 32	8	4	4								
32, under 33	1,339	1,005	334	2				332			
33, under 34	277	273	4	4							
34, under 35	24	22	2	2							
35	3,957	3,384	573	64	1	6		502			
36, under 37	31	29	2	2							
37, under 38	425	419	6	3				2		1	
38, under 39	65	54	11					11			
39, under 40	21	15	6	6							
40	1,294	1,182	112	8				11		93	
41, under 42	13	6	7	7							
42, under 43	108	105	3	2							
43, under 44	11	4	7	7							
44, under 45	84	71	13	12						1	
45	104	96	8	8							
46, under 47	33	29	4	4							
47, under 48	22	18	4	4							
48, under 49	21	21									
49, under 50	2	2									
50	142	142									
51, under 52	2	2									
52, under 53	10	10									
53 and over	65	65									

Peas.

Hourly earnings were obtained for almost all workers in the pea canneries scheduled. Of the 20,990, one-tenth earned less than 25 cents and one-sixth earned 25 cents in the week recorded in 1938. In all, one-third earned under 30 cents an hour. In Wisconsin, the most important pea-packing State, the proportions at each of the lower earnings levels were similar to those for all States. The greatest point of concentration, however, was at 35 cents, the amount paid to the larger number of men. The largest number of women in Wisconsin pea canneries received 25 cents, the next largest 22½ cents.

Washington has recently come to the fore in pea canning. Though the sample secured was small, the concentration of women's earnings at 40 cents and of men's at 50 cents is indicative of union influence. Maryland also is noted for its pea canning; here 31 percent of the employees earned under 25 cents and 86 percent earned under 30 cents an hour.

TABLE XXIV.—*Distribution of total, men, and women employees according to hourly earnings, 1938 season, and figures for women by State*

PEAS

Hourly earnings (cents)	Number reported			Number of women with hourly earnings as specified in—									
	All em- ploy- ees	Men	Wom- en	Cali- for- nia	Illi- nois	Indi- ana	Iowa	Mary- land	Min- ne- sota	New York	Vir- ginia	Wash- ing- ton	Wis- con- sin
Total.....	20,990	14,697	6,293	116	340	185	112	644	927	1,425	29	229	2,286
Average earn- ings (cents).....	32.3	34.9	26.1	42.9	30.5	27.8	27.9	20.2	28.8	23.9	20.2	40.4	25.1
Under 20.....	238	15	223	-----	-----	-----	-----	139	-----	-----	-----	-----	-----
20.....	880	181	699	-----	-----	67	-----	361	1	84	28	-----	77
21, under 22.....	6	4	2	-----	-----	-----	-----	-----	-----	-----	-----	-----	2
22, under 23.....	906	13	893	-----	-----	-----	-----	129	33	57	-----	-----	674
23, under 24.....	76	55	21	-----	-----	-----	-----	-----	1	-----	-----	-----	20
24, under 25.....	7	4	3	-----	-----	-----	-----	2	-----	-----	-----	-----	1
25.....	3,499	776	2,723	-----	114	25	-----	10	332	1,100	1	-----	1,141
26, under 27.....	93	13	80	-----	-----	-----	-----	-----	80	-----	-----	-----	-----
27, under 28.....	1,208	906	302	-----	29	21	106	2	56	4	-----	-----	84
28, under 29.....	29	23	6	-----	-----	-----	-----	-----	-----	1	-----	-----	5
29, under 30.....	24	17	7	-----	1	-----	-----	-----	6	-----	-----	-----	-----
30.....	2,017	1,689	328	-----	73	15	-----	-----	107	10	-----	-----	123
31, under 32.....	36	35	1	-----	-----	-----	-----	-----	1	-----	-----	-----	-----
32, under 33.....	1,703	1,426	277	-----	-----	1	-----	1	135	1	-----	-----	139
33, under 34.....	36	36	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
34, under 35.....	46	46	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
35.....	5,668	5,390	278	-----	101	-----	6	-----	167	2	-----	1	1
36, under 37.....	44	39	5	-----	4	1	-----	-----	-----	-----	-----	-----	-----
37, under 38.....	621	550	71	-----	18	51	-----	-----	-----	-----	-----	-----	2
38, under 39.....	107	94	13	-----	-----	-----	-----	-----	6	-----	-----	7	-----
39, under 40.....	38	38	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
40.....	2,260	2,041	219	-----	-----	2	-----	-----	2	1	-----	213	1
41, under 42.....	66	54	12	-----	-----	-----	-----	-----	-----	-----	-----	1	11
42, under 43.....	315	215	100	96	-----	1	-----	-----	-----	-----	-----	3	-----
43, under 44.....	38	20	18	18	-----	-----	-----	-----	-----	-----	-----	-----	-----
44, under 45.....	111	110	1	1	-----	-----	-----	-----	-----	-----	-----	-----	-----
45.....	291	290	1	-----	-----	1	-----	-----	-----	-----	-----	-----	-----
46, under 47.....	20	20	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
47, under 48.....	34	29	5	-----	-----	-----	-----	-----	-----	-----	-----	-----	5
48, under 49.....	18	18	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
49, under 50.....	1	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
50.....	258	256	2	-----	-----	-----	-----	-----	-----	-----	-----	2	-----
51, under 52.....	4	4	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
52, under 53.....	147	146	1	-----	-----	-----	-----	-----	-----	-----	-----	1	-----
53 and over.....	145	143	2	1	-----	-----	-----	-----	-----	-----	-----	1	-----

Green Beans.

Almost 45 percent of the workers on green beans earned under 25 cents an hour. This is a greater proportion than on any other product. The proportion reached 63 percent in Maryland, most important in green- and wax-bean canning, and was 57 percent in Wisconsin. In New York, second State in importance in beans, 37 percent of the workers earned less than 25 cents and 34 percent earned 25 cents. In contrast, 55 percent of the workers in Washington earned 40 cents an hour and 36 percent earned 50 cents in the canning of beans.

TABLE XXV.—*Distribution of total, men, and women employees according to hourly earnings, 1938 season, and figures for women by State*

GREEN BEANS

Hourly earnings (cents)	Number reported			Number of women with hourly earnings as specified in—						
	All em- ployees	Men	Women	Cali- fornia	Indi- ana	Iowa	Mary- land	New York	Wash- ington	Wis- consin
Total.....	10,768	3,739	7,029	344	171	131	1,529	1,785	347	2,722
Average earn- ings (cents).....	27.5	33.6	24.2	38.5	27.5	27.3	21.2	22.5	40.2	22.9
Under 20.....	490	25	465	24	-----	-----	120	318	-----	3
20.....	1,736	142	1,594	5	-----	-----	654	355	-----	580
21, under 22.....	23	-----	23	4	-----	-----	-----	18	-----	1
22, under 23.....	2,511	23	2,488	3	-----	11	707	247	-----	1,520
23, under 25.....	28	1	27	7	-----	-----	-----	12	-----	8
25.....	1,439	280	1,159	11	-----	-----	45	776	-----	327
26, under 27.....	13	3	10	3	-----	-----	-----	7	-----	-----
27, under 28.....	944	585	359	5	171	114	3	5	-----	61
28, under 29.....	9	-----	9	9	-----	-----	-----	-----	-----	-----
29, under 30.....	11	1	10	8	-----	-----	-----	-----	2	-----
30.....	1,090	850	240	3	-----	2	-----	14	-----	221
31, under 32.....	8	2	6	5	-----	-----	-----	1	-----	-----
32, under 33.....	276	263	13	7	-----	4	-----	1	-----	1
33, under 34.....	273	262	11	11	-----	-----	-----	-----	-----	-----
34, under 35.....	10	1	9	8	-----	-----	-----	1	-----	-----
35.....	531	500	31	7	-----	-----	-----	24	-----	-----
36, under 37.....	40	31	9	8	-----	-----	-----	1	-----	-----
37, under 38.....	44	34	10	10	-----	-----	-----	-----	-----	-----
38, under 39.....	25	17	8	7	-----	-----	-----	-----	1	-----
39, under 40.....	6	-----	6	6	-----	-----	-----	-----	-----	-----
40.....	482	148	334	8	-----	-----	-----	1	-----	325
41, under 42.....	17	4	13	8	-----	-----	-----	-----	-----	5
42, under 43.....	28	15	13	8	-----	-----	-----	-----	-----	5
43, under 44.....	28	-----	28	24	-----	-----	-----	-----	-----	4
44, under 45.....	94	1	93	92	-----	-----	-----	-----	-----	1
45.....	87	74	13	9	-----	-----	-----	-----	-----	4
46, under 47.....	5	-----	5	4	-----	-----	-----	1	-----	-----
47, under 48.....	4	2	2	2	-----	-----	-----	-----	-----	-----
48, under 50.....	12	3	9	8	-----	-----	-----	-----	-----	1
50.....	247	235	12	10	-----	-----	-----	1	-----	1
51, under 52.....	4	-----	4	4	-----	-----	-----	-----	-----	-----
52, under 53.....	184	180	4	4	-----	-----	-----	-----	-----	-----
53 and over.....	69	57	12	12	-----	-----	-----	-----	-----	-----

Spinach.¹¹

The 2 States for which hourly earnings on spinach were reported for 5,608 wage earners in 1938 were California and Maryland. In Maryland 72 percent of the workers, in California 4.2 percent, earned under 30 cents an hour; in Maryland 41 percent, in California only a little over 1 percent, earned less than 25 cents an hour. The average

¹¹ For earnings in spinach, asparagus, pickles, olives, and nonseasonal vegetables, see tables XVIII, XIX, and XXII in mimeographed appendix to this report, available from Women's Bureau on request.

earnings of men in spinach canning were 53.1 cents in California, 28 cents in Maryland. For women cleaning spinach and doing other odd jobs, California's average was 44.2 cents and Maryland's was 20.9 cents an hour.

Asparagus.¹¹

While California ranks far ahead of other States in asparagus canning, some reports were received from Illinois and New Jersey. In Illinois, 71 percent of the 507 wage earners whose hours worked were reported earned under 25 cents an hour; in California only 2 percent had such earnings. The average for men in California canneries was 54.3 cents an hour, with a 56-percent concentration at 52½ cents. In Illinois men averaged 26.2 cents an hour. Women working on asparagus in Illinois averaged but 19.5 cents, with 74 percent concentrated at 17½ cents. In California the average for women was 46.6 cents.

Nonseasonal Vegetable Products.¹¹

No employee working on pork and beans in Illinois and Indiana was reported as earning less than 27 cents an hour in the week recorded in 1938. In fact, the average for Indiana women was 32.3 cents. Concentration for men was at 45 cents and that for women at 27½ and 37½ cents. Men's average earnings were 39.1 cents in this State, with no earnings under 33 cents.

Figures on hourly earnings in sauerkraut were secured in New York and Wisconsin. Comparatively few workers in either State earned under 25 cents, though 17 percent in New York and 9 percent in Wisconsin earned less than 30 cents. Men's average earnings in Wisconsin kraut factories were 44.2 cents an hour, women's 33.6 cents. In New York men's average was 33.6 cents and women's was 28.4 cents.

Hourly earnings of workers in pickle factories were secured from four States—California, Illinois, Ohio, and Wisconsin. Very few workers had earnings below 25 cents. In Ohio, however, almost a fourth averaged 25 cents an hour. This was the first quartile point in women's earnings in Ohio; in Illinois such point was 28 cents, in Wisconsin 32.5 cents, and in California 42.9 cents. The first quartile for men workers in Ohio was 35.8 cents, in Illinois it was 40 cents, in Wisconsin 45.1 cents, and in California 52.5 cents, the last named being a point of heavy concentration.

Fruits.¹²

Wage figures for large fruits, that is, apricots, peaches, pears, plums, and so forth, were secured in California and Washington. In these States and in New York figures for cherries and berries, called small fruits, also were secured.

On large fruits only 1.7 percent of the workers earned under 25 cents and only 4 percent earned less than 30 cents. In Washington the points of concentration in women's earnings were at 37½ cents and 40 cents; in California concentrations began at the 35-cent group and

¹² For distribution of all employees, by State, see tables XX and XXI in mimeographed appendix to this report, available from Women's Bureau on request.

continued up to and including 53 cents or more. The earnings for women in California averaged 45.3 cents, with the first quartile at 38.9 cents. In Washington the average earnings of women were 42.1 cents, with the lower quartile at 38 cents.

When cherries or berries were canned, New York plants paid less than 25 cents an hour to 31 percent of the workers and less than 30 cents to 78 percent. In the two Pacific coast States only 5 of all the employees, and these were in California, were paid under 30 cents. In California 63 percent earned 50 cents and over, and in Washington 23 percent did so. On these small fruits the average earnings of men were 29.4 cents in New York, 50.3 cents in Washington, and 54.2 cents in California. Women's average earnings in New York State were 22.1 cents; in Washington they were 40.3 cents and in California 51.1 cents.

TABLE XXVI.—*Distribution of total, men, and women employees according to hourly earnings, 1938 season, and figures for women by State*

LARGE FRUITS; SMALL FRUITS

Hourly earnings (cents)	Large fruits					Small fruits					
	Number reported			Number of women with hourly earnings as specified in—		Number reported			Number of women with hourly earnings as specified in—		
	All employees	Men	Women	California	Washington	All employees	Men	Women	California	New York	Washington
Total	29,137	10,184	18,953	17,128	1,825	3,151	985	2,166	932	252	982
Average earnings (cents)	47.6	52.3	45.0	45.3	42.1	44.5	48.3	42.8	51.1	22.1	40.3
Under 15	43		43	43							
15	26		26	26							
16, under 17	13		13	13							
17, under 18	24		24	23	1	74		74		74	
18, under 19	23		23	23							
19, under 20	39		39	39							
20	54	2	52	52		25		25		25	
21, under 22	54		54	53	1						
22, under 23	67	1	66	62	4	27		27		27	
23, under 24	85		85	84	1						
24, under 25	80	1	79	77	2						
25	95		95	93	2	191	68	123		123	
26, under 27	126	1	125	119	6	2	1	1		1	
27, under 28	101		101	98	3	3	1	2	2		
28, under 29	148		148	143	5	2		2	2		
29, under 30	164		164	160	4	1		1	1		
30	312	115	197	187	10	62	59	3	2		1
31, under 32	208	1	207	198	9	3	2	1	1		
32, under 33	214	4	210	186	24	7	1	6	5		1
33, under 34	278	1	277	263	14	11		11	11		
34, under 35	310		310	296	14	13	1	12	10	1	
35	765	42	723	703	20	37	18	19	17		2
36, under 37	409	2	407	372	35	24	1	23	18		5
37, under 38	752	3	749	444	305	81	2	79	13		66
38, under 39	673	1	672	598	74	172	1	171	19		152
39, under 40	437	7	430	367	63	52	1	51	17		34
40	1,196	454	742	418	324	655	10	645	37	1	607
41, under 42	523	7	516	429	87	39	4	35	23		12
42, under 43	2,263	47	2,216	2,088	128	71		71	52		19
43, under 44	1,534	16	1,518	1,408	110	44	1	43	38		5
44, under 45	1,077	14	1,063	941	122	42	3	39	38		
45	1,570	665	905	801	104	198	125	73	39		34
46, under 47	512	12	500	431	69	40	2	38	35		3
47, under 48	1,010	597	413	352	61	40	7	33	27		6
48, under 49	435	12	423	391	32	42	2	40	36		4
49, under 50	376	10	366	340	26	45	6	39	34		5
50	947	467	480	444	36	227	187	40	39		1
51, under 52	417	30	387	357	30	59	8	51	50		1
52, under 53	6,032	5,593	439	424	15	331	275	56	54		2
53 and over	5,745	2,079	3,666	3,582	84	531	199	332	312		20

Jams, Jellies, Preserves, and Fruit Juices.¹²

Hourly earnings of 1,174 persons putting up jams, jellies, and fruit juices were reported. Men's average earnings ranged from 40.7 cents in New York to 60.9 cents in California. In no State did any concentration of men's earnings occur at below 40 cents, and in California, Illinois, and Washington concentrations were at 50 cents or above.

Women's average earnings ranged from 28.1 cents in New York to 43.6 cents in California. The point of concentration in California was at 42½ cents, in Washington it was at 40 cents, and in New York at 25 cents, 27½ cents, and 30 cents.

TABLE XXVII.—*Distribution of total, men, and women employees according to hourly earnings, 1938 season, and figures for women by State*

JAMS, JELLIES, PRESERVES, FRUIT JUICES

Hourly earnings (cents)	Number reported			Number of women with hourly earnings as specified in—					
	All em- ployees	Men	Wom- en	Cali- fornia	Illinois	New Jersey and Penn- sylvan- ia	New York	Ohio	Wash- ington
Total.....	1,174	531	643	291	47	46	74	17	168
Average earnings (cents).....	44.2	52.0	37.9	43.6	38.6	39.8	28.1	(1)	31.9
25.....	20	1	19				19		
26, under 27.....									
27, under 28.....	22		22				22		
28, under 29.....	6		6				6		
29, under 30.....	3		3				3		
30.....	61	13	48		1	15	21	11	
31, under 32.....	1	1							
32, under 33.....	10		10		8		2		
33, under 34.....	1	1							
34, under 35.....									
35.....	34	21	13	7	6				
36, under 37.....									
37, under 38.....	23	3	20	2	10				8
38, under 39.....	5		5						
39, under 40.....	9	3	6		6			5	
40.....	204	61	143		7		1		135
41, under 42.....	4		4					1	3
42, under 43.....	260	47	213	181	3	20			9
43, under 44.....	16	1	15	15					
44, under 45.....	11	3	8	6	2				
45.....	100	38	62	51	2	6			3
46, under 47.....	6	3	3	1		1			1
47, under 48.....	23	14	9	8					1
48, under 49.....	4	3	1			1			
49, under 50.....	1	1							
50.....	131	112	19	11					8
51, under 52.....	6	3	3	3					
52, under 53.....	32	27	5	3		2			
53 and over.....	181	175	6	3	2	1			

¹ Not computed; base too small.

Olives.

Hourly earnings were secured for 1,262 wage earners in olive plants, chiefly in California but with small numbers in New Jersey and Ohio,

which have been combined for tabulation. Men averaged 52.1 cents an hour in California and 45 cents in the other States. Women earned 40 cents and 36 cents an hour, respectively, in California and the other States.

No worker earned less than 25 cents an hour—in fact, less than 1 percent had earnings below 30 cents; but 19, 18, and 17 percent earned respectively 36 and under 40 cents, 40 cents, and 41 and under 45 cents. Most of the workers in these groups were women. Over 28 percent of the olive-plant workers earned 50 cents or more; well over nine-tenths of this group were men.

EARNINGS IN VARIOUS SECTIONS OF CALIFORNIA

Though all plants in California are affected equally by minimum-wage orders of the State Industrial Welfare Commission, the degree of unionization differs in the several sections of the State. For this reason separate tabulations have been made of the average hourly earnings in the various occupations in canneries in these areas. Area A is the San Francisco Bay area, including Stockton and Sacramento; area B is the Sacramento Valley and San Joaquin Valley; and area C is the area south of the Tehachapi.

Earnings for men and women were highest in the San Francisco area and lowest in that south of the Tehachapi. When paid a time rate, women preparers of fruits and vegetables averaged 43.7 cents an hour in area A, 40.5 cents in area B, and 36.6 cents in area C. At piece rates women earned a few cents more per hour, but the areas had the same relative rank. Table XXVIII shows separately the earnings of men listed as processors, but most of the men were time workers engaged in a wide variety of tasks. In area A such men averaged 54.1 cents, in area B 48.2 cents, and in area C 40.1 cents an hour in an active canning week in 1938.

TABLE XXVIII.—*Hourly earnings in the various occupations in three areas in California, 1938 season*

Occupation	Area A		Area B		Area C	
	Total employees reported	Average hourly earnings (cents)	Total employees reported	Average hourly earnings (cents)	Total employees reported	Average hourly earnings (cents)
Number of plants (93).....	55		22		16	
Total number of employees.....	32,827	49.4	9,261	44.4	3,239	39.2
Processors (men).....	543	55.1	120	53.0	46	44.8
Preparers (women).....	11,064	46.6	2,426	44.1	1,393	38.8
Time workers.....	1,357	43.7	450	40.5	284	36.6
Piece workers, and both.....	9,707	47.0	1,976	45.0	1,109	39.4
Other occupations.....	21,220	50.7	6,715	44.3	1,800	39.4
Total men.....	11,287	54.8	3,081	48.7	810	40.1
Time workers.....	11,102	54.1	2,843	48.2	810	40.1
Piece workers, and both.....	185	96.1	238	55.6	.....	.....
Total women.....	9,933	46.1	3,634	40.6	990	38.8
Time workers.....	4,518	45.2	1,282	39.0	264	36.7
Piece workers, and both.....	5,415	47.0	2,352	41.4	726	39.6

EFFECTS OF STATE WAGE REGULATION,¹³ 1938

No attempt was made to study the detailed application of minimum-wage laws to canneries in California, Minnesota, Washington, and Wisconsin, for such a study would have involved checking over, in each cannery visited, each specific phase of the rulings. However, the hourly earnings themselves reflect the influence of State minimum rates that have been in effect many years.

The minimum rate fixed by the Wisconsin Industrial Commission for experienced women and minors in canneries is 20 cents an hour in towns of under 5,000 population and 22½ cents in cities of larger population. Though most of the Wisconsin pea plants included in the survey were in the smaller communities, and though the State allows lower rates for inexperienced workers, no woman on the week's pay rolls taken in Wisconsin pea canneries in 1938 earned less than 20 cents an hour. The rates paid the larger groups of women were 22½ cents and 25 cents an hour. When corn was canned, 20 cents and 22½ cents were the prevailing earnings. On green and wax beans, 21 percent of the women earned 20 cents an hour and 56 percent earned 22½ cents.

In Minnesota, a competing pea-canning State, the minimum-wage rates were set according to size of community, at 24 cents, 27 cents, 30 cents, and 36 cents for hours below 36 and above 48, with a scale of weekly rates for hours of 36 to 48. The majority of the canneries in the survey were in towns of under 5,000. While a few women in pea canneries earned less than 24 cents, the larger number earned 25 cents, 30 cents, 32½ cents, or 35 cents an hour. Of those canning corn, 15 percent earned 25 cents, 32 percent 27½ cents, 24 percent 30 cents, and 27 percent more than 30 cents.

In contrast, New York pea canneries paid 20 cents or less an hour to 17 percent of all women employed. New York has a minimum-wage law but no rates had been set for canneries in 1938. In Maryland, without a State wage law, more than three-fourths of the women on peas earned 20 cents or less an hour.

While the effects of the California and Washington minimum-wage laws for women are obliterated to some extent by the higher rates paid in firms with union contracts, their influence can still be seen in hourly earnings. Washington has a basic yielding rate of 37½ cents for women and minors in canneries, while the rates in the agreements with the United Cannery Packing and Food Preservers' Union are 40 cents an hour for time workers and such piece rates as will yield to at least 50 percent of all piece workers average earnings of 42½ cents an hour. It is not surprising, therefore, to find that almost all the women canning peas or green beans in Washington earned 40 cents an hour or more. On large fruits 8 percent earned under 37½ cents, 17 percent earned the State minimum of 37½ cents, and 18 percent the union hour minimum of 40 cents. However, there was a wide spread above 40 cents, indicative of the opportunities afforded piece workers when the basic yielding rates were high.¹⁴

¹³ For provisions of minimum-wage orders, see pp. 89 and 90.

¹⁴ While Oregon canneries were not included in the 1938 survey, the State labor commissioner reported average hourly earnings of women time workers to be 36.7 cents; of piece workers in the preparation department, 38.2 cents; and of piece workers in the canning department, 42.3 cents. The State minimum-wage rate is 35 cents an hour.

As stated on page 90, the California Industrial Welfare Department permits canneries to elect to pay women 33½ cents an hour on a time basis or piece rates that will yield to at least 50 percent of the workers an average of 33½ cents an hour. An employer who elects to operate under the piece-rate system agrees to have his pay roll audited weekly. If the preparation of fruits and vegetables is shown not to have yielded 33½ cents an hour to 50 percent of the women and minor preparers, he agrees to add to the earnings of all women and minors the percentage of increase necessary to make up this amount. Each employer operating under this system shares the cost of the pay-roll audits; in 1938 this cost was at the rate of \$1 per 1,000 cases. In 1937, the last year for which a State report is available, 101 plants chose this system as against 47 that operated on a guaranteed time-rate basis.

At the time of the Women's Bureau survey, auditors from the Division of Industrial Welfare were auditing books not only to determine adjustments necessary to maintain a minimum of 33½ cents for 50 percent of the piece workers, as called for by State rulings, but where plants had entered into agreements to pay higher basic rates the State audited for these rates. However, record was made of the sum that would have been added had all plants operated on a basis of 33½ cents an hour in 1937. This was \$64,541.73, or approximately 24 percent of the total amount paid in the 101 plants employing in the peak week 43,500 women.¹⁵

The California commission issues special licenses for women physically defective by age or otherwise to work at less than the minimum wage and to be excluded from the audit, though they do benefit by audit adjustments. In 1937 these special licenses totaled 1,421. The commission also permits a 2-week learner period at 25 cents an hour.

In an active week of the 1938 season, of 17,128 women employed on large fruits in reporting canneries, 10 percent earned under 33½ cents; of 2,762 employed on tomatoes, 12 percent had such earnings. Only small percents earned exactly the State minimum of 33½ cents. The union-agreement minimums were 42½ cents and 44 cents. Over 25 percent of the women on large fruits and 30 percent of those on tomatoes earned from 42½ cents to 44 cents, inclusive. As many as 20 percent earned 53 cents an hour or more on large fruits.

As the earnings data for other California crops are examined, it will be seen that the basic-piece-rate system operating in this State serves to bring about a wide spread of earnings. There is little of the concentration at the minimum time rate or the basic piece rate that is found in States that fix one rate for all experienced employees. Nor does it prevent the earning by individuals of amounts below the minimum, which the single minimum rate does prevent. While the California system of permitting learners and of licensing handicapped workers accounts for a small proportion of the women earning under 33½ cents, it does not account for the major proportion at these rates.

On the other hand, the California State minimum has been materially higher than the rates paid in middle western States over many

¹⁵ California. Division of Industrial Welfare. Report. Fruit and Vegetable Canning Industry, 1937 Season.

years and it made possible the higher rates in the private agreements entered into by canneries in 1937. The relative expenditure for labor in California canneries exceeds that in canneries putting up the same products in other States. For example, on tomatoes and tomato products in 1938, California women averaged 42.2 cents, California men 53 cents; the next highest earnings were found in Ohio, where women averaged 36.3 cents and men 47.8 cents an hour. The hourly earnings of women on large fruits averaged 45.3 cents in California and 42.1 cents in Washington, a State with union agreements similar to those of California canneries. On small fruits California women averaged 51.1 cents an hour, Washington women 40.3 cents, and New York women 22.1 cents.

That there is more general benefit from a higher minimum rate with allowance for piece-work differences than from a low minimum rate covering all workers would seem to be true in an industry such as the canning industry.

HOURLY EARNINGS, SEASON OF 1939

Representatives of the Women's Bureau visited in 1939 the same seasonal canneries that were surveyed in the 1938 season, but some of these canneries had not operated in 1939. In order to make the 1939 figures representative of conditions on major products packed in that year, other plants were substituted for those not canning. Earnings data for 1939 will be quoted, therefore, for all plants surveyed, but comparison of earnings in 1938 and 1939 will be made for identical plants only.

In the canning season of 1939 all canneries outside the area of production as defined by the Administrator of the Fair Labor Standards Act were subject to the minimum-wage provisions of the act. All workers, regardless of sex, were to be paid at least 25 cents an hour in 1939.^a

Tomatoes and Tomato Products.

Pay-roll data for tomato canning in 1939 were furnished by 216 firms employing 40,935 workers, for 32,251 of whom hours and hourly earnings were available. These firms, in 11 States, packed 59 percent of the pack, as based on the National Canners' Association figures for 1938. When earnings of all employees in an active tomato-canning week were averaged, the figures showed that workers in Arkansas received 16.9 cents an hour, those in Virginia 17.3 cents, in Texas 20.1 cents, in Florida 22.4 cents, in Maryland 25.4 cents, and in Wisconsin 27.4 cents. At the upper level was California, with average earnings of 47.3 cents, followed by Illinois with an average of 41 cents. Indiana, Iowa, and New York paid rates that brought earnings somewhat over 30 cents an hour.

Of the 32,251 tomato workers for whom hourly earnings were obtained, 11 percent earned less than the Fair Labor Standards Act minimum of 25 cents for the 1939 season. Eighty-five percent of

^a See note, p. 17.

the employees in Arkansas and 95 percent of those in Virginia earned less than the minimum. All the canneries in Virginia were in communities of under 2,500 population and all stated they secured their tomatoes entirely within a 10-mile limit. The two Arkansas canneries in communities of over 2,500 population paid the 25-cent minimum or above. More than 70 percent of the Texas tomato-cannery workers earned under 25 cents. While part of these workers were in the smaller rural communities, others were not. As the canneries in each of the tomato-growing areas of Texas drew from the same source of supply and operated under the same conditions, firms outside rural communities objected vigorously to the definition of area of production and their competitors in rural communities agreed with the reasonableness of their opposition.

Forty-seven percent of Maryland tomato workers in towns of under 2,500, in contrast to 7 percent in towns of 2,500 and over, earned under 25 cents. In both groups 25 cents was paid to the larger number of workers. A concentration at the 25-cent minimum occurred also in Iowa and New York urban and rural canneries, and in Wisconsin rural and Florida urban canneries. In California, Illinois, and Indiana earnings of many workers were spread over higher levels.

A comparison of the average earnings in tomato canneries in communities of under 2,500 population, within and outside of the 10-mile producing area, with those in larger communities is of interest. In Indiana the rural tomato canneries reported that were within the producing area paid amounts averaging 27.2 cents to all employees, and rural canneries buying produce beyond the 10-mile limit paid amounts averaging 30.8 cents an hour. These were higher than the average for Indiana tomato canneries in towns of 5,000 and under 10,000 population. Only when the community in which the cannery was situated reached the 25,000 population class were average earnings higher than those paid in rural canneries more than 10 miles distant from the field.

Maryland tomato canneries showed only two slight differences by size of community. When situated within the area of production the average was 22.6 cents, when in rural communities but outside the 10-mile limit it was 23.9 cents, and in communities of 2,500 and over it was almost 27 cents.

In New York tomato canneries there was little difference in average earnings between the rural canneries, whether within or outside of the area of production, and those in towns of 5,000 to 10,000 population. But the earnings were higher in canneries in towns of 2,500 to 5,000 and in cities of 100,000 and more.

TABLE XXIX.—Average hourly earnings of all employees, 1939 season, by State, size of locality, and distance from source of supply

TOMATOES AND TOMATO PRODUCTS

State	Em- ploy- ees re- ported	Average hourly earn- ings (cents)	Employees not covered by law		Employees covered by law					
			In towns of under 2,500 and 10 miles or less from source of supply		Total		In towns of under 2,500 and more than 10 miles from source of supply		In towns of 2,500 and over	
			Num- ber of em- ploy- ees	Aver- age hourly earn- ings (cents)	Num- ber of em- ploy- ees	Aver- age hourly earn- ings (cents)	Num- ber of em- ploy- ees	Aver- age hourly earn- ings (cents)	Num- ber of em- ploy- ees	Aver- age hourly earn- ings (cents)
Arkansas.....	443	16.9	382	15.5	61	25.4			61	25.4
California.....	8,046	47.3			8,046	47.3	2,266	45.4	5,780	48.1
Florida.....	170	22.4			170	22.4	38	15.6	132	24.3
Illinois.....	984	41.0	53	30.3	931	41.6			931	41.6
Indiana.....	10,710	30.7	3,074	27.2	7,636	32.0	3,417	30.8	4,219	33.0
Iowa.....	1,593	31.3	13	22.3	1,580	31.4	274	26.3	1,306	32.4
Maryland.....	2,550	25.4	833	22.6	1,717	26.6	88	23.9	1,629	26.8
New York.....	4,822	31.5	1,360	28.3	3,462	32.8	287	28.3	3,175	33.2
Texas.....	1,161	20.1	241	15.9	920	21.2	249	22.7	671	20.6
Virginia.....	656	17.3	656	17.3						
Wisconsin.....	1,116	27.4			1,116	27.4	998	27.8	118	24.0

Corn.

Average earnings for all employees reported in corn-canning States were not so diverse as those in tomato canning. The range was from 29.1 cents in Wisconsin to 33 cents in Illinois, based on reports from 122 canneries giving earnings for 21,595 persons, and packing in 1939 44 percent of the pack as reported for 1938 by the Canners' Association. Figures for the total pack of 1939 were not available when this report was prepared. Less than 5 percent of the workers on corn had earnings below 25 cents an hour in the week of active operation reported. These were employed largely in communities of under 2,500 population. Employees in corn canneries in Indiana averaged about 3 cents less in communities of under 2,500 population that were within the area of production than in rural communities outside such area. No other State averages showed even this much difference. All Washington plants were outside the area of production.

Peas.

Average hourly earnings on peas in 1939 ranged from 21.9 cents in Virginia to 44.8 cents in Washington, according to reports for 20,136 workers in 118 pea canneries. Very few workers earned under 25 cents an hour; those having low rates were chiefly in rural communities of Maryland and Virginia. In Wisconsin, the most important pea-canning State, average earnings were 31.7 cents, with little difference in the rural canneries whether within or without the area of production. With the exception of Illinois and Washington, the average earnings in communities within the area of production were less—considerably so in Virginia—than the earnings in communities outside of the area.

Green and Wax Beans.

Earnings on beans in 1939 were reported by 81 canneries employing 10,362 workers in 9 States. There were three levels of earnings. In Arkansas and Texas average earnings were under 25 cents, respectively 30 percent and over 40 percent of the employees in rural bean canneries earning less than 25 cents. In Illinois, Iowa, Maryland, New York, and Wisconsin average earnings of all workers were 25 and under 30 cents; only in Maryland and New York rural canneries were 15 percent or more paid less than 25 cents. Arkansas was the only State in which there was a great difference in average earnings between communities within and outside of the area of production, 15.2 cents and 25.3 cents, respectively.

Lima Beans.

Reports on earnings in lima beans were for 2,249 persons in 10 canneries. In Virginia the average hourly earnings were 19.5 cents, in Maryland 24.5 cents, and in Illinois and Indiana just over 30 cents. The Virginia workers were all employed in communities of under 2,500 population and within the 10-mile area. In Maryland larger proportions of persons in towns of 2,500 and over than in rural communities earned under 25 cents, but average earnings were very similar in communities affected and those not affected by the wage-hour law.

Spinach.

Earnings reports on spinach were from 30 canneries in 5 States and for 7,098 persons. In Texas the average earnings of the few reporting were 20.9 cents. In Arkansas the very great majority were paid 25 cents, the average earnings being 25.2 and 25.3 cents in the two population groups. Arkansas was the only State in which any plants included were in the area of production. Maryland, with average earnings of 26 cents, paid less than 25 cents to 17 percent of the workers in communities of 2,500 and over. New York spinach workers all earned over 25 cents an hour, with an average of 28 cents. In California the average was 46.8 cents an hour.

Asparagus.

Reports from 23 asparagus canneries in California and Illinois, employing 7,421 workers in 1939, supplied hourly earnings for 7,370 of those workers. In California the employees averaged 50.2 cents an hour, about three-fifths earning 50 cents or more, regardless of size of community. All plants in this State were outside of the area of production. In Illinois the average was just under 30 cents an hour, with 60 percent in rural and 43 percent in urban canneries earning 30 cents. The average earnings in plants covered by the law and in those not covered were 30.1 and 26.6 cents, respectively.

Large Fruits.

California is the principal State in the canning of peaches, pears, apricots, plums, and other large fruits. In 1939, reports were secured from 41 California and Washington canneries employing 36,336 persons. The workers reported averaged 47.1 cents in California and

46 cents in Washington in an active week in the 1939 season. Most of the plants were in communities of 2,500 or more. Rural-community canneries, in both States, apparently paid almost the same rates as canneries in larger communities. The rates were at a level higher than 25 cents before the Fair Labor Standards Act became effective; only handicapped women or learners earned under 33½ cents an hour.

Small Fruits.

Earnings reports on berries and cherries covered 13 firms in California, Washington, and New York. The employees numbered 3,580, and hourly earnings were reported for practically all. New York canneries paid berry and cherry workers in rural canneries, all of which were within the area of production, 20 cents, 25 cents, and 30 cents, for the most part, yielding average earnings of 24.2 cents. In New York communities of 2,500 and over only 9 percent were paid 20 cents, and the average earnings of all were 28.1 cents. The Washington berry and cherry plants were in urban communities, and the average earnings were 42.9 cents for all workers, with no hourly rate under 26 cents. In California rural-community canneries, none of which were outside the area of production, the average earnings were 38.2 cents, with 4 percent of the workers earning under 25 cents and 28 percent earning under 31 cents. Workers in communities of 2,500 or more population averaged 49.7 cents.

Olives.

Earnings in olive canneries in 1939 were reported by 14 California firms and covered 1,030 employees. Average earnings of all were about 45 cents an hour, though they were but 38.6 cents in plants in communities of under 2,500 population, only 1 plant operating within the area of production. No plant employed any worker at less than the State minimum of 33½ cents in these rural communities, and 35 cents was a prevailing rate. In the olive plants in towns of 2,500 and over there was no point of earnings concentration, and average earnings rose to 48½ cents an hour.

HOURLY EARNINGS IN 1938 AND IN 1939—IDENTICAL PLANTS

A comparison of average hourly earnings and earnings distributions of employees in plants for which data were obtained both in 1938 and in 1939 shows, with certain exceptions, an increase in average hourly earnings in 1939 over 1938. On tomatoes the increase in Indiana and Maryland was between 4 and 5 percent, in Iowa less than 2 percent, and in New York less than 1 percent. While 14 percent earned under 25 cents in Indiana tomato canneries in 1938, in 1939 this proportion was reduced to 5 percent. The number receiving exactly 25 cents increased by only 5 percent. In identical Maryland tomato canneries 51 percent of the employees earned under 25 cents in 1938 and 29 percent had such earnings in 1939. In Illinois the change in the year in proportion earning under 25 cents was from 17 percent to 12 percent, in New York it was from 19 percent to practically none, and in Wisconsin from 43 percent to none. Only Virginia tomato canneries maintained the same proportion at under 25 cents; these canneries were all in rural communities and all secured tomatoes from within a 10-mile limit.

TABLE XXX.—Comparison of hourly earnings of all employees in identical plants, seasons of 1938 and 1939, by product and State

TOMATOES AND TOMATO PRODUCTS

Hourly earnings (cents)	Employees with hourly earnings as specified in—													
	Illinois		Indiana		Iowa		Maryland		New York		Virginia		Wisconsin	
	1938	1939	1938	1939	1938	1939	1938	1939	1938	1939	1938	1939	1938	1939
Total.....	276	349	7,411	9,676	532	732	1,205	1,412	3,421	3,784	362	365	183	244
Average earnings (cents).....	34.1	32.7	29.7	30.9	34.1	34.6	23.4	24.5	32.0	32.1	16.1	17.1	26.2	28.4
	<i>Percent of employees</i>													
Under 25.....	17.4	12.0	14.4	5.1	-----	-----	50.9	28.8	18.7	(1)	96.1	96.7	43.2	-----
25.....	4	8.6	16.8	21.5	16.0	12.0	28.4	50.6	26.6	45.4	2.5	1.9	21.3	34.0
Over 25, under 30.....	24.6	25.2	11.9	16.0	14.3	4.0	11.0	9.1	4.8	6.4	.6	-----	8.2	21.3
30.....	2.2	1.4	22.6	15.8	10.9	23.4	5.1	7.6	3.3	5.8	.6	.3	21.9	36.9
Over 30.....	55.4	52.8	34.3	41.6	58.8	60.6	4.6	3.9	46.5	42.2	.3	1.1	5.5	7.8

CORN

Hourly earnings (cents)	Employees with hourly earnings as specified in—													
	Illinois		Indiana		Iowa		Maryland		Minnesota		New York		Wisconsin	
	1938	1939	1938	1939	1938	1939	1938	1939	1938	1939	1938	1939	1938	1939
Total.....	2,983	3,179	1,307	1,579	997	1,040	1,597	1,674	5,357	5,600	1,332	1,357	252	242
Average earnings (cents).....	33.4	33.4	28.7	30.4	30.1	30.2	24.7	25.9	33.6	32.6	29.7	30.5	28.6	29.3
	<i>Percent of employees</i>													
Under 25.....	-----	0.1	7.7	4.1	5.3	4.6	38.8	22.5	1.2	0.1	3.3	0.1	38.9	-----
25.....	2.4	5.8	29.1	25.7	25.2	28.6	25.7	33.2	9.1	12.7	50.7	51.4	2.0	43.4
Over 25, under 30.....	6.6	7.8	9.5	13.4	19.1	13.5	22.6	30.3	10.1	17.3	.4	.2	.4	2.1
30.....	36.3	30.5	27.0	20.5	10.8	16.5	8.6	8.2	14.7	13.0	7.5	6.1	29.8	26.9
Over 30.....	54.6	55.7	26.7	36.4	39.5	36.8	4.3	5.7	64.9	56.9	38.1	42.2	29.0	27.7

PEAS

Hourly earnings (cents)	Employees with hourly earnings as specified in—													
	Illinois		Indiana		Iowa		Maryland		Minnesota		New York		Wisconsin	
	1938	1939	1938	1939	1938	1939	1938	1939	1938	1939	1938	1939	1938	1939
Total.....	1,198	1,236	680	765	201	193	2,040	1,983	3,890	3,719	3,084	3,183	6,169	5,337
Average earnings (cents).....	35.5	34.7	32.5	37.9	33.8	34.9	25.5	26.8	35.8	35.4	30.4	31.6	32.1	31.9
	<i>Percent of employees</i>													
Under 25.....	-----	0.1	19.6	4.3	2.0	3.1	30.1	12.8	1.0	0.2	6.6	2.8	8.0	3.8
25.....	7.5	4.2	16.2	25.1	-----	-----	15.0	35.8	7.5	6.7	35.1	33.3	19.3	24.0
Over 25, under 30.....	2.5	3.5	4.6	.4	16.4	17.1	39.3	30.2	3.2	3.8	.3	.2	1.9	4.6
30.....	7.3	22.2	14.1	22.7	-----	-----	9.9	11.9	5.7	8.2	14.2	17.2	8.1	9.9
Over 30.....	82.6	70.0	45.6	47.5	81.6	79.8	5.7	9.4	82.7	81.2	43.9	46.4	62.7	57.8

¹ Less than 0.05 percent.

TABLE XXX.—Comparison of hourly earnings of all employees in identical plants, seasons 1938 and 1939 by product and State—Continued

Hourly earnings (cents)	GREEN BEANS							
	Employees with hourly earnings as specified in—							
	Iowa		Maryland		New York		Wisconsin	
	1938	1939	1938	1939	1938	1939	1938	1939
Total.....	212	254	2,432	2,245	2,297	1,829	3,067	2,666
Average earnings (cents).....	29.8	28.7	23.8	26.1	26.0	28.8	25.8	28.2
	<i>Percent of employees</i>							
Under 25.....	5.2		59.9	9.7	33.2	7.3	55.0	0.8
25.....		46.9	7.6	57.5	38.0	54.3	11.8	69.0
Over 25, under 30.....	53.8	15.7	21.5	18.3	1.9	2.6	1.1	.8
30.....	11.3	11.0	7.9	9.6	9.3	12.7	16.1	9.2
Over 30.....	29.7	26.4	3.0	4.9	17.6	23.1	16.0	20.3

Hourly earnings (cents)	SPINACH		ASPARAGUS		LIMA BEANS			
	Employees with hourly earnings as specified in—							
	Maryland		Illinois		Maryland		Virginia	
	1938	1939	1938	1939	1938	1939	1938	1939
Total.....	209	613	507	301	283	298	195	227
Average earnings (cents).....	25.1	26.0	21.0	26.5	23.2	26.7	17.7	21.5
	<i>Percent of employees</i>							
Under 25.....	39.2	16.5	71.2		50.2		95.9	70.9
25.....	15.8	41.9	22.1	88.0	41.3	68.1	1.5	16.7
Over 25, under 30.....	16.3	25.3	.4	1.7	2.5	23.2	1.5	7.0
30.....	21.1	7.3	.2	.7	1.8	3.7	.5	3.5
Over 30.....	7.7	9.0	6.1	9.6	4.2	5.0	.5	1.8

The same slight increase was found in average hourly earnings on corn and spinach, while workers on green and wax beans, the product on which earnings were lowest in 1938, showed increases in average hourly earnings in 1939 of approximately 10 percent in identical plants in Maryland, New York, and Wisconsin. On green and wax beans the proportion earning under 25 cents was reduced in Maryland canneries from 60 percent to 10 percent, in New York canneries from 33 percent to 7 percent, and in Wisconsin canneries from 55 percent to less than 1 percent.

In Maryland pea canneries the proportion earning under 25 cents was reduced from 30 percent in 1938 to 13 percent in 1939, in Wisconsin from 8 percent to 4 percent.

Maryland spinach canneries reduced the proportion receiving under 25 cents from about 40 percent in 1938 to about 17 percent in 1939. In Maryland corn canneries such proportion was reduced from 39 percent to 23 percent; in Wisconsin corn canneries, from 39 percent to none.

WEEKLY EARNINGS IN 1938

Weekly earnings have significance only as they are indicative of the amount a worker may earn in a week of active canning operations, and, obviously, as showing what the individual worker has to live on. The following table, therefore, gives the arithmetic average (the mean), the median, and the first and third quartiles in the earnings series for men and women, by product and by State.

TABLE XXXI.—Average week's earnings of men and women, 1938 season, by product and State

Product and State	Men's average earnings ¹					Women's average earnings ¹				
	Number of men reported	Arithmetic average	First quartile	Median	Third quartile	Number of women reported	Arithmetic average	First quartile	Median	Third quartile
Tomatoes and tomato products	12, 149	\$18. 55				18, 148	\$9. 85			
California	1, 788	23. 00	\$16. 45	\$21. 95	\$28. 65	2, 763	12. 55	\$8. 65	\$12. 60	\$16. 35
Illinois	231	14. 25	6. 35	14. 90	19. 95	517	6. 50	2. 25	5. 80	10. 40
Indiana	5, 023	16. 00	9. 55	15. 30	21. 50	7, 336	8. 25	4. 70	7. 85	11. 30
Iowa	250	18. 90	11. 75	18. 20	25. 45	456	11. 85	5. 90	12. 55	16. 15
Maryland	1, 494	9. 90	6. 15	9. 15	13. 50	2, 572	7. 20	4. 30	6. 65	9. 40
New Jersey	207	10. 55	3. 65	8. 80	14. 80	276	7. 25	3. 35	6. 40	9. 80
New York	2, 003	29. 70	19. 20	28. 30	38. 85	2, 924	13. 35	9. 10	12. 90	17. 05
Ohio	616	25. 95	19. 60	25. 25	29. 90	785	16. 30	12. 30	17. 05	19. 60
Virginia	537	6. 40	4. 15	6. 40	8. 50	519	5. 40	3. 45	5. 00	7. 00
Corn	10, 228	19. 00				9, 258	11. 50			
Illinois	2, 202	18. 50	12. 35	17. 65	23. 80	1, 775	10. 55	7. 65	11. 20	15. 00
Indiana	1, 365	16. 95	11. 05	15. 00	21. 85	1, 066	9. 50	7. 00	10. 15	12. 20
Iowa	996	17. 25	9. 75	15. 75	23. 95	895	10. 10	5. 75	9. 40	14. 40
Maryland	1, 482	16. 75	11. 45	16. 60	21. 40	1, 053	11. 05	7. 80	11. 45	15. 00
Minnesota	3, 097	20. 60	13. 35	20. 15	26. 55	3, 163	13. 45	10. 15	13. 65	17. 25
New York	750	25. 70	18. 60	27. 30	33. 30	885	13. 20	9. 60	12. 30	17. 85
Washington	68	16. 50	10. 00	15. 00	22. 00	95	8. 20	7. 50	8. 35	9. 25
Wisconsin	268	15. 90	10. 20	13. 80	21. 45	326	5. 25	1. 80	4. 50	7. 05
Peas	14, 794	20. 75				6, 297	9. 00			
California	160	20. 45	10. 65	21. 00	29. 00	116	9. 10	4. 00	9. 60	14. 05
Illinois	986	18. 80	12. 65	18. 90	24. 25	340	7. 85	5. 35	7. 70	10. 55
Indiana	495	19. 60	8. 30	17. 10	26. 05	185	12. 45	5. 70	9. 05	16. 75
Iowa	324	19. 95	11. 15	20. 50	27. 20	112	10. 40	6. 55	7. 90	14. 55
Maryland	1, 698	15. 75	9. 75	15. 40	20. 70	645	8. 40	5. 85	8. 60	10. 70
Minnesota	3, 306	20. 75	13. 05	19. 75	28. 00	927	10. 45	6. 15	9. 25	14. 60
New York	2, 221	21. 95	13. 60	22. 00	29. 05	1, 426	10. 10	7. 10	9. 65	12. 80
Virginia	71	7. 75	5. 30	7. 20	10. 05	29	3. 20			
Washington	214	29. 30	19. 90	30. 15	37. 85	229	10. 60	6. 70	10. 25	14. 10
Wisconsin	5, 319	22. 20	13. 95	21. 85	29. 85	2, 288	7. 70	5. 20	7. 85	10. 10
Green beans	3, 867	17. 75				7, 450	9. 15			
California	207	28. 65	24. 00	29. 65	33. 35	344	15. 35	9. 00	13. 85	23. 40
Indiana	431	12. 50	3. 85	13. 20	18. 65	561	4. 35	. 75	2. 45	7. 30
Iowa	82	18. 90	13. 90	18. 35	24. 85	131	10. 95	8. 45	12. 05	12. 85
Maryland	1, 107	12. 65	9. 20	12. 80	16. 30	1, 560	8. 30	6. 20	8. 70	10. 75
New York	795	20. 65	15. 55	20. 55	24. 85	1, 785	9. 60	8. 05	9. 65	12. 15
Washington	245	22. 95	18. 25	24. 10	29. 35	347	15. 10	12. 30	13. 90	19. 65
Wisconsin	1, 000	19. 75	13. 45	19. 90	25. 70	2, 722	8. 65	6. 30	9. 50	11. 00
Spinach	1, 791	22. 05				4, 169	15. 90			
California	1, 555	23. 65	18. 35	22. 80	29. 40	3, 824	16. 65	11. 75	16. 40	21. 05
Maryland	236	11. 30	5. 75	12. 05	16. 60	345	7. 65	4. 65	7. 70	10. 35
Asparagus	1, 954	23. 70				3, 490	14. 95			
California	1, 825	24. 50	20. 00	24. 40	28. 65	3, 076	16. 30	12. 30	16. 50	20. 50
Illinois	112	12. 40	9. 00	11. 25	15. 40	395	4. 85	1. 60	6. 05	7. 30
New Jersey and Pennsylvania	17	17. 25				19	6. 90			
Pork and beans	913	16. 05				332	8. 15			
Illinois	74	20. 80	17. 10	19. 80	25. 50	45	13. 85			
Indiana	839	15. 65	11. 55	13. 90	20. 05	287	7. 25	3. 75	5. 85	9. 65
Sauerkraut	885	18. 80				754	12. 70			
New York	513	17. 30	14. 55	17. 70	21. 30	423	12. 45	10. 70	13. 05	14. 50
Wisconsin	372	20. 85	15. 00	22. 20	26. 70	331	13. 00	10. 05	13. 80	16. 55

¹ Medians and quartiles not computed where base is less than 50.

TABLE XXXI.—Average week's earnings of men and women, 1938 season, by product and State—Continued

Product and State	Men's average earnings ¹					Women's average earnings ¹				
	Number of men reported	Arithmetic average	First quartile	Median	Third quartile	Number of women reported	Arithmetic average	First quartile	Median	Third quartile
Pickles.....	481	\$23.25	-----	-----	-----	627	\$14.80	-----	-----	-----
California.....	174	27.20	\$23.95	\$28.35	\$32.45	145	19.45	\$17.40	\$18.80	\$22.95
Illinois.....	133	20.90	17.25	21.60	25.15	162	14.05	12.10	13.85	18.00
Ohio.....	98	21.65	17.75	23.25	27.50	174	12.85	10.20	11.25	14.85
Wisconsin.....	76	20.50	17.25	20.30	23.15	146	13.35	11.65	13.35	16.45
Large fruits.....	10,290	27.20	-----	-----	-----	18,966	17.85	-----	-----	-----
California.....	9,487	27.30	22.10	27.85	32.85	17,140	17.85	11.95	17.95	23.35
Washington.....	803	25.80	21.45	26.10	29.95	1,826	18.20	15.20	18.80	22.20
Small fruits.....	986	22.15	-----	-----	-----	2,167	15.25	-----	-----	-----
California.....	360	23.70	20.15	24.50	27.65	933	18.10	13.10	17.10	22.45
New York.....	160	15.20	5.20	14.25	23.15	252	8.20	4.90	8.35	12.10
Washington.....	466	23.30	17.70	24.40	28.40	982	14.35	10.65	15.15	18.60
Jams, jellies, and fruit juices.....	542	22.25	-----	-----	-----	670	15.35	-----	-----	-----
California.....	131	22.50	14.75	23.95	29.00	294	16.95	15.55	17.45	18.20
Illinois.....	80	23.00	18.65	22.65	27.50	47	13.80	-----	-----	-----
New Jersey and Pennsylvania.....	74	22.10	19.55	22.55	25.85	70	15.10	12.30	14.65	19.40
New York.....	119	19.75	16.50	17.85	22.60	74	10.95	11.05	11.45	11.85
Ohio.....	37	24.65	-----	-----	-----	17	15.15	-----	-----	-----
Washington.....	101	23.50	19.85	24.20	26.00	168	15.00	12.20	15.80	18.80
Olives.....	513	20.60	-----	-----	-----	774	13.50	-----	-----	-----
California.....	464	20.75	13.65	21.20	27.15	663	13.35	10.15	13.55	17.20
New Jersey and Pennsylvania.....	38	17.40	-----	-----	-----	73	15.45	13.45	14.40	17.35
Ohio.....	11	24.90	-----	-----	-----	38	12.65	-----	-----	-----

¹ Medians and quartiles not computed where base is less than 50.

ANNUAL EARNINGS OF INDIVIDUAL WORKERS IN 1937¹⁶

Only 5 percent of 179,008 workers whose names appeared on canner pay rolls secured for the whole of 1937 received \$600 or more as wages from the employing plants in that year. In New Jersey and Pennsylvania, where plants canning nonseasonal products were large, the proportion reached 37.8 percent; in Ohio, almost 14 percent. But in the States canning principally fresh fruits and vegetables the proportion of wage earners receiving \$600 or more in the year ranged from less than 1 percent in Iowa to 5 percent in California and New York.

For the 2 percent who worked all 52 weeks in canning plants in 1937, the average earnings were \$1,078; for the 1 percent working 46 and under 52 weeks the average earnings were \$905. The employees working fewer than 39 weeks averaged less than \$600 in the year, though a large number of those who worked 21 and under 39 weeks earned \$600 or more.

What did less than 4 weeks of work in canneries net the workers in earnings? The 53,820 persons reported with so little work, a third of all, averaged \$20.10 per person. Six States had an average of less than this. For example, in Maryland these very short-period workers averaged \$10.55, in Illinois \$15.50, in Indiana \$15.90. But in New York, Washington, California, Wisconsin, and Minnesota the average

¹⁶ For year's earnings of all employees in 1937, by weeks worked and by State, see table XXVI in mimeographed appendix to this report, available from Women's Bureau on request.

TABLE XXXII.—Year's earnings of individual employees in 1937, by weeks worked—All cannery workers

Amount earned in year	Total employees		Em- ployees with weeks work- ed re- port- ed	Employees who worked in the year—													
	Num- ber	Per- cent		Under 4 weeks	4, under 8 weeks	8, under 12 weeks	12, under 16 weeks	16, under 20 weeks	20 weeks	21, under 26 weeks	26 weeks	27, under 33 weeks	33, under 39 weeks	39 weeks	40, under 46 weeks	46, under 52 weeks	52 weeks
Number of plants.....	397		381														
Number of employees.....	179,008	100.0	161,849	53,820	50,260	25,152	10,918	6,177	1,202	3,667	561	2,134	1,631	242	1,224	1,767	3,094
Percent distribution.....			100.0	33.3	31.1	15.5	6.7	3.8	0.7	2.3	0.3	1.3	1.0	0.1	0.8	1.1	1.9
Average earnings.....	\$145.30		\$140.90	\$20.10	\$74.90	\$149.10	\$223.35	\$294.55	\$298.25	\$374.95	\$446.35	\$492.20	\$593.15	\$602.10	\$708.40	\$905.30	\$1,078.10
Under \$5.....	13,077	7.3	12,290	12,199	89	1											
\$5, under \$10.....	9,723	5.4	9,083	8,718	359	6											
\$10, under \$25.....	22,252	12.4	20,589	16,898	3,543	11											
\$25, under \$50.....	27,777	15.5	25,433	11,438	12,703	1,189	85	13									
\$50, under \$75.....	21,092	11.8	19,420	3,546	12,705	2,791	316	56	6	2		2	1				
\$75, under \$100.....	15,387	8.6	14,116	881	8,961	3,387	628	198	40	18		1	1	2			
\$100, under \$200.....	33,443	18.7	29,760	128	11,269	12,077	4,035	1,411	245	419	31	106	26	2	3	5	3
\$200, under \$300.....	14,759	8.2	12,563	10	614	4,457	3,548	1,827	422	965	115	341	129	25	94	15	1
\$300, under \$400.....	7,347	4.1	6,312	2	18	1,012	1,659	1,519	236	848	122	399	274	22	134	57	10
\$400, under \$500.....	3,643	2.0	3,145		1	85	500	745	153	646	104	346	235	48	139	122	21
\$500, under \$600.....	2,343	1.3	1,989			5	103	288	58	416	81	317	236	33	132	211	109
\$600, under \$700.....	1,690	.9	1,445			2	15	85	33	206	47	266	224	32	135	226	170
\$700, under \$800.....	1,438	.8	1,288			1	5	16	7	90	37	180	170	23	131	175	453
\$800, under \$1,000.....	1,900	1.1	1,665			1	7	13	2	46	17	133	237	37	238	310	624
\$1,000, under \$1,500.....	2,502	1.4	2,223			1		6		8	3	40	95	17	195	518	1,340
\$1,500, under \$2,000.....	548	.3	461				1			1	3	1	3	1	22	114	315
\$2,000, under \$2,500.....	78		61							1	1	1	1	1	13	44	44
\$2,500 and over.....	9	(1)	6								1	1			1	1	4

¹ Less than 0.05 percent.

total earnings of these under-4-weeks workers were in excess of the average of \$20.10 for all States surveyed.

The second largest group, those employed in a plant 4 weeks to 8 weeks, averaged earnings of \$74.90 in the year. In Maryland men and women working such period in a cannery averaged \$40.90, and in New Jersey and Pennsylvania \$59.40. More than the general average for the total was earned in Illinois, where earnings for 4 to 8 weeks of work averaged \$76.80, in Minnesota where they were \$78.45, and in California where they were \$96.95.

The test made of the extent of transferring from plant to plant by cannery workers (see p. 66) indicates that 6 percent have employment in two plants in a season if the plants are in the same locality. Even when allowance for such additional employment is made, it is clear that the amount of annual earnings possible in the canning industries is far too small to constitute more than a cash supplement to other income for the great majority of the workers employed there.

EMPLOYEE ELIGIBILITY UNDER STATE UNEMPLOYMENT COMPENSATION LAWS

Employer coverage under the unemployment compensation laws in the 13 States included in the 1938 canning survey has been discussed on page 51. Five of these States—namely, New York, Ohio, Minnesota, Virginia, and Washington—make general provisions for the seasonal worker. In Minnesota the unit for seasonal determination relates directly to the “first processing of seasonal agricultural products” when less than 26 weeks. In New York, Ohio, and Virginia the determination may be by the occupation or industry when the maximum operating period is, respectively, less than 1 year in the first two States and less than 40 weeks in Virginia. In Washington seasonal operations are defined as an—

Employer or operating unit which customarily during approximately the same period reduces employment so that total pay roll for continuous period of 2 calendar months is less than 50 percent of total pay roll for consecutive 2 calendar months of greatest employment during preceding 10 months.

These States further define “seasonal workers.” In New York and Virginia they are employees ordinarily engaged in a seasonal industry and not engaged in any other work. In Washington a seasonal worker is one who has a base year credit of which at least 80 percent has been earned in seasonal employment.

In these States with special provision for seasonal industries the unemployment compensation benefits are limited as follows:

- a. Rights to apply only during longest seasonal period or periods of operation: New York and Ohio. Duration of benefits to be modified in proportion to longest seasonal period: New York. Agency to fix the number of weeks benefits may be paid: Ohio.
- b. Benefits payable only during seasonal period of operation: Washington.
- c. Credits based on seasonal wages to be that proportion of such wages which period of operations bears to calendar year, but such credits available for unemployment at any time: Minnesota.
- d. Agency to prescribe rules and to determine period during which benefits shall be payable: Virginia.

Wisconsin disqualifies from the benefits of unemployment compensation "Individuals employed solely within active canning season (as determined by agency) of an employer engaged in canning fresh perishable fruits and vegetables." This disqualification does not apply to individuals who earned \$100 or more from other work within the 52 weeks before the canning employment.

In States with and without special rulings on seasonal industries, employee eligibility for unemployment benefits is determined on one of two bases: Either the wages received in some specified past period, as a multiple of the weekly benefit amount or a flat amount, or the length of employment.

The following listing gives the employee-eligibility requirements and amount of benefits for the 13 canning States:

I. Eligibility requirements.

A. On the basis of wages during a specified period:

1. As a multiple of the weekly benefit amount. (See II for benefit amounts.)
 - a. Thirteen times the weekly benefit amount earned in the four quarters preceding the benefit year: Pennsylvania.
 - b. Fifteen times the weekly benefit amount earned in the first four out of the last five calendar quarters immediately preceding the benefit year: Iowa.
 - c. Sixteen times the weekly benefit amount earned in the four quarters preceding the benefit period: New Jersey and Virginia.
 - d. Twenty-five times the weekly benefit amount earned in the calendar year: New York.
 - e. Thirty times the weekly benefit amount earned in the four quarters preceding the benefit period: Minnesota.
 - f. Thirty times the weekly benefit amount earned in the calendar year: Maryland.
2. As a flat amount.
 - a. Wages of \$200 earned in the four quarters preceding the benefit period: Washington.
 - b. Wages of \$225 earned in the calendar year: Illinois.
 - c. Wages of \$300 earned in the four quarters preceding the benefit period: California.
 - d. Wages earned subsequent to last day of last base period, if any, of \$50 in each of three of first four of last five completed calendar quarters, or totaling \$250 in first four of last five completed calendar quarters: Indiana.

B. On the basis of length of employment:

- a. Employment in 20 weeks in the year preceding application for benefits: Ohio.
- b. Employment over 4 weeks (on at least 12 working days) or on a monthly salary basis of more than 1 month, by employer from whose account employee draws benefits (after employer becomes liable for contribution): Wisconsin. (See foregoing text for employee disqualification.)

II. Amount of benefits.

1. Weekly benefit rate:

- a. 50 percent of full-time weekly wages: Iowa, Pennsylvania, Ohio, and Virginia.

Full-time weekly wages are defined as wages to be established as the amount a claimant would earn if employed at the most recent rate earned by him in the specified period and for the customary scheduled full-time hours for his occupation in the enterprise in which he was last employed in the specified period. If such a rate would be unreasonable or arbitrary, or not readily determinable, full-time weekly wages to be computed as one-thirteenth of highest quarterly earnings in the specified period: Iowa, Pennsylvania, and Virginia.

Fifty percent of "average weekly wage"; the average weekly wage of an individual, for whose employment during the specified period there was a scheduled or customary full-time week and who was employed in such employment at a fixed rate of pay, to be the weekly wages obtainable for such full-time week at such rate of pay; where a full-time week is established but not a rate of pay, average weekly wage to be actual average of earnings in all full-time weeks in the specified period; in all other cases to be actual average of all weeks of any employment in the specified period: Ohio.

- b. Fifty percent of average weekly wage per employee; established as actual average of earnings for all weeks of employment within the specified period. The agency may prescribe alternate procedure where workers' total wages were less than \$100 or total weeks of employment were less than 10; or if application of the standard procedure would prove inequitable in any given case: Wisconsin.

- c. Calculated as specified proportion of total wages during the quarter of highest earnings within the specified period:

1. One-twentieth ($\frac{1}{20}$): California, Illinois, and Washington.
2. One-twenty-third ($\frac{1}{23}$): New York.
3. One twenty-fifth ($\frac{1}{25}$): Indiana and Minnesota.
4. One-twenty-sixth ($\frac{1}{26}$): Maryland and New Jersey.

2. Weekly minimum amount of benefits:

- a. \$10.00: California.
- b. \$7.50: Pennsylvania.
- c. \$7.00: Illinois, New York, and Washington.
- d. \$6.00: Wisconsin.
- e. \$5.00: Maryland, Minnesota, and New Jersey.
- f. \$3.00: Virginia.
- g. \$2.00: Indiana (law permits the agency to adopt \$5 minimum but such action has not been taken).
- h. \$5.00 or full-time weekly wage, whichever is less: Iowa.
- i. No minimum prescribed: Ohio.

3. Weekly maximum amount of benefits:

- a. \$15: Indiana, Iowa, Maryland, Minnesota, New Jersey, New York, Ohio, Pennsylvania, Virginia, Washington, and Wisconsin.
- b. \$16: Illinois.
- c. \$18: California.

As eligibility to receive unemployment benefits is calculated most frequently on the basis of proportion of total wages received in the quarter of highest earnings or on total earnings in year, it is not pos-

sible to determine, from individual annual earnings or weekly earnings based on actual employment rather than on full-time hours, the proportion of employees covered in the survey who would be eligible for unemployment compensation. However, available data permit estimates of the percent of cannery workers who would be eligible for unemployment compensation in some States.

Washington makes eligible any employee whose annual earnings were \$200 or more in the four quarters preceding the benefit period. According to the record of total earnings of 10,390 canning employees secured, 25.2 percent earned as much as the \$200 minimum in the four quarters preceding an assumed benefit period. As they worked for employers covered by the law, 25.2 percent in Washington were eligible for unemployment benefits.

Under the provision of the Illinois law which provides that employees are eligible who receive \$225 or more in the calendar year preceding the benefit period, 7 percent of the cannery workers for whom annual-earnings records were obtained would have been eligible for unemployment compensation had they been employed by firms subject to the law. It will be noted, however, that two Illinois canneries were outside the employer coverage of the Illinois unemployment compensation law.

In Wisconsin, general employee eligibility is based on an employment of over 4 weeks by the employer from whose account employee draws benefits. Almost two-thirds (64.5 percent) of the 11,802 for whom employers' records over the year were secured worked more than 4 weeks for the canner reporting. However, an employer is not covered by law unless he employs 6 or more workers within each of 18 weeks; by this ruling 7 of the 23 Wisconsin canneries reporting, and their employees, were not covered. And again, all cannery workers who are employed only during the season by fresh fruit and vegetable canners and are not employed elsewhere during the year are exempt from the State's unemployment compensation law.

These examples serve to illustrate the widely different coverage of canning employees and employers under present State unemployment compensation laws.

LABOR COSTS

Cannery costs generally are divided into direct factory costs, factory overhead, selling expense, and general expense. Under direct factory costs are included the cost of green produce plus green-produce cartage or freight, and seed loss, condiments, cans and bottles, cases, labels, fuel and power, labor costs, and social-security compensation, Under factory overhead usually are listed general expenses in the cannery and warehouse, including machine leases, maintenance and depreciation, building insurance, and so forth, while under selling expense are included brokerage and commissions, advertising, all discounts allowed, and selling costs. General expense includes administrative expenses, interest, and miscellaneous office expenses.

The Women's Bureau did not secure an accounting of specific items of cost in its survey of 1939. Rather it asked for direct labor cost, that is, cost of all labor, whether unskilled, skilled, or supervisory, entering into cannery operations, and for total cost covering all items

listed in the foregoing paragraph. Because most of the canneries covered in the supplemental survey (that of 1939) were visited in October and November, books for 1939 had not been closed and only a few firms could state the total costs or the labor costs for the 1939 season. Reports for 1938 were secured most frequently, though there were sufficient 1937 reports for purposes of comparison. Because methods of figuring costs, especially with regard to inventory and sales, differed from plant to plant, records of canneries that did not include specific items had to be discarded. Plants canning nonseasonal products only were not visited in 1939.

Though costs of operation usually were secured for individual plants, firms with several units sometimes made an accounting only for the total operations of all their plants. As such totals served the purposes of the study, the firm totals were accepted. In plants operating on one product, it was a simple matter to ascertain costs per unit of production. In some very large plants producing many products, costs were kept carefully for each product. But most of the firms canning several foods did not keep detailed cost statements by product; rather, in making a full audit of their operations, many costs were allotted to all products. As the labor cost per case on an aggregate of products has no significance, it is not given in the cost tables.

COSTS IN FRESH-VEGETABLE CANNERIES

Adequate cost records were secured from 169 firms canning fresh vegetables of seasonal and nonseasonal varieties. About a fourth reported that their labor costs were less than 9 percent of their total costs. The proportion with such low labor costs was larger among canneries putting up two seasonal vegetables. Another fourth of all the plants reported labor costs as 11 but under 13 percent of the total. More of the single-vegetable canning plants reported this relation than reported the smaller costs of less than 9 percent of the total.

Tomatoes and Tomato Products Only.

Cost records were furnished by 43 plants canning only tomatoes, tomato pulp, puree, paste, or juice, or a combination of these. Records were secured from plants in low-wage areas such as Arkansas and Virginia as well as in other tomato-canning States. The relation of labor costs to total costs was not controlled by size of community; rather, the spread came within canneries in the same type of area. In Indiana, for example, the lowest proportionate labor cost was 11 percent, the highest 19.4 percent, both reported by canneries in rural areas. In Maryland the labor costs ranged from 7 percent to 16 percent of total costs, both reported by canneries in towns of over 2,500 population.

In spite of the extremes there was a marked tendency for the relation of labor costs to total costs from plant to plant to mass about similar proportions: In Arkansas it was from 9 percent to 11.9 percent; in Maryland, from 9.8 percent to 11.4 percent; in Virginia, from 8.3 percent to 11.2 percent. In Indiana, plants fell into two groups, those with costs at 11 percent to 12 percent and those with costs at 15 percent to 18 percent. In California and Iowa, where few plants reported costs on tomato products only, there was wide variance in costs.

While the relation of labor costs to total costs differed within the same plant in 1937 and 1938, there was no regular trend noticeable in plants reporting for these years. More plants reported lower relative costs in 1938 than in 1937, but a fuller reporting of firms might have shifted the trend. In the few plants reporting on 1939 costs, some had slight increases and others decreases. The data available in the fall of 1939 would not indicate any general increase in labor costs in tomato-canning States.

While a standard case of tomatoes is 24 No. 2 cans, tomato juice and other tomato products are packed in containers of various sizes. When stating the labor cost per case, the actual rather than the standard case frequently was used, making such figures on tomato products of little value. In Maryland, however, labor costs on standard cases of tomatoes were reported by a number of firms and ranged from 10.5 cents to 15 cents a case. In Indiana, firms reporting on standard cases had labor costs of 17.6 cents to 23.2 cents a case. In Virginia, labor costs per case generally were 10 cents or less. On tomato juice, Indiana and New York plants reported a cost of approximately 17 cents a case of No. 10 cans.

Peas Only.

Reports on costs of canning peas were secured for Wisconsin. In towns of under 2,500 population the seven firms reporting showed labor costs to be from 8.5 percent to 13.3 percent of total costs; while two firms reported the lower figure, two others had labor costs of 11.5 percent of total. The cost of labor per case of peas ranged from 20 cents to 29.4 cents in 1938 in Wisconsin rural canneries. In canneries in the larger communities the relation of labor costs to total did not vary greatly from that in the small communities, ranging from 8.1 percent to 12.4 percent. Labor cost per case was figured at 14 cents by one firm but at 20 cents and 21 cents by three other firms in the larger communities.

Corn Only.

Nineteen corn-canning firms in five States supplied adequate reports on labor costs and total costs for 1938. While the relation between such costs ranged from 7.1 percent in one Minnesota plant to 19.2 percent in an Illinois cannery, the concentration was at 10 percent to 12 percent of total costs. Canneries reporting approximately these relative labor costs were in four of the States and in rural and town areas.

The labor cost per case ran close to 16 and 17 cents in Maryland and Iowa, but there were marked variations.

Two Vegetables.

Sixty canneries reported total costs and labor costs on operations covering the canning of two vegetables in the 1938 season. The largest single group reported labor costs that were from 5.6 percent to 8.8 percent of total costs, while almost as large a group had costs of 11 to 13 percent. Costs of 18 percent and 20 percent were found, but these were isolated instances. No difference in relation of labor costs to total costs existed between canneries in rural communities and those in towns and cities of over 2,500 population.

Three or More Vegetables.

The number of plants that reported costs on canning three or more seasonal vegetables was small. When such nonseasonal vegetables as pumpkin, cabbage, beets, or carrots were added to the pack, apparently there was more concentration at the lower levels, though the range of labor costs again was from 7.8 percent to over 20 percent of total costs.

TABLE XXXIII.—*Relation of labor costs to total costs, by type of pack and by State, 1938*

A.—VEGETABLES (FRESH)

Type of pack and State	Number of canneries reporting	Firms reporting relation of labor costs to total costs as—								
		Under 9 percent	9, under 10 percent	10, under 11 percent	11, under 12 percent	12, under 13 percent	13, under 14 percent	14, under 15 percent	15, under 18 percent	18 percent and over
Total	169	41	17	16	19	22	12	10	23	9
Tomatoes and tomato products—total	43	9	7	2	8	2	3	2	8	2
Arkansas	5		1		2				1	
California	3	2							1	
Indiana	11				3	1	1	1	3	2
Iowa	2	1							1	
Maryland	10	3	2		2	1	1		1	
New York	1		1						1	
Virginia	11	3	2	2	1		1	1	1	
Peas—Wisconsin	11	4	1		2	3	1			
Corn—total	19	3	2	4	3	2	1	1	2	1
Illinois	2			1						1
Indiana	1	1								
Iowa	6		1	1	2		1		1	
Maryland	4		1	1		1			1	
Minnesota	6	2		1	1	1		1	1	
2 seasonal vegetables only—total	60	18	1	7	5	11	5	4	7	2
Illinois	6	2				2		1	1	
Indiana	3	1					1		1	
Maryland	6			2	1	1	1		1	
Minnesota	5	3							1	
New York	8	3	1		1	1			2	1
Texas	2				1			1		
Virginia	2	2						1		
Washington	2	1				1				
Wisconsin	26	6		5	2	6	2	2	2	1
3 or more seasonal vegetables only—total	16	2		3	1	2	1	2	3	2
Arkansas	3			1	1	1				
California	1									1
Indiana	1								1	
Iowa	1	1							1	
Maryland	3					1	1	1		
New York	1								1	
Virginia	2								1	
Washington	1							1	1	1
Wisconsin	3	1		2						
Seasonal and nonseasonal (but fresh) vegetables—total	20	5	6			2	1	1	3	2
Illinois	2		2						1	
Indiana	3	2								
Iowa	1									1
Maryland	1					1				
New York	2							1	1	
Texas	1	1						1	1	
Virginia	1	1								
Wisconsin	9	1	4			1	1		1	1

TABLE XXXIII.—Relation of labor costs to total costs, by type of pack and by State, 1938—Continued

B.—SEASONAL FRUITS AND SEASONAL FRUITS AND VEGETABLES

State	Number of canneries reporting	Firms reporting relation of labor costs to total costs as—														
		Under 9 percent	9, under 10 percent	10, under 11 percent	11, under 12 percent	12, under 13 percent	13, under 14 percent	14, under 15 percent	15, under 16 percent	16, under 17 percent	17, under 18 percent	18, under 19 percent	19, under 20 percent	20, under 21 percent	21, under 22 percent	22 percent and over
Total	52	8	2	2	5	2	4	2	6	2	2	6	2	1	3	5
Arkansas	2	1		1												
California	18	1					1	2	2	1	1	4			3	3
Maryland	1															
New York	20	3	1		3	1	3		4	1	1	1	1	1		
Texas	6	1 ²	1	1	2											
Washington	5	1				1							1			2

C.—SEASONAL AND NONSEASONAL PRODUCTS OF ALL KINDS

Total	27	6	2	2	3	2		2		2	1		4	1		2
California	3			1	1											1
Illinois	7	3			2			1					1			
Indiana	5	1	1	1				1					1			
Iowa	3	1				1							1			
Maryland	2									1				1		
Texas	2	1	1													
Washington	1															1
Wisconsin	4					1				2			1			

¹ Costs for 1937 season.
² Costs for 1939 season.

COSTS ON OTHER PRODUCTS

Seasonal Fruits and Seasonal Fruits and Vegetables.

So different are the costs of canning the several kinds of fruits that there is no comparison in labor costs between berry canneries and those putting up a full line of large fruits. In New York plants cold-packing cherries and strawberries and canning raspberries and fruit juices, labor costs ran as low as 5.5 percent of total costs, whereas California canners putting up an assortment of fruits had labor costs as high as 25 percent of total costs. In California and Washington labor costs per case of No. 2½ cans of peaches ranged from 24 cents to 55 cents according to grade; on apricots from 27 cents to 61 cents; and on pears from 48 cents to 82 cents. In Arkansas labor costs on blackberries were 10 cents a case in 1938; and in New York, on an assortment of berries and cherries, such costs were 15 cents a case.

When plants combine fruit canning and vegetable canning, the total labor costs for many products obliterate the costs on any one product. However, more than half the plants reporting costs on fruits or a combination of fruits and vegetables, in contrast to only about one-fifth of the plants reporting costs on vegetable canning only, had labor costs that were 15 percent or more of total costs.

When nonseasonal products such as baked beans, sauerkraut, or spaghetti are added to the production, the relation of labor costs to total costs has a wide spread. However, the reports on costs from this group of firms were limited, as plants producing nonseasonal products in largest amount were not visited in 1939.

Olives.

Olive costs were reported by eight California firms. Three reported labor costs of 12.4 percent of total costs. This was the lowest figure quoted, the highest being one firm's report of 22 percent of total costs.

In summarizing the facts on labor costs in canneries, it is obvious that relative labor costs are far less in vegetable, small-fruit, and fruit-juice canning than in other types of cannery operation. This is due largely to the part green produce and can costs play in total costs. These two items alone make up about half the cost in many vegetable canneries. Labor costs are a more important item in California and Washington fruit canneries and in plants putting up numerous kinds of fruit and vegetable products.

CANNED GOODS AND THE PUBLIC CONTRACTS ACT

The United States Government is a heavy purchaser of canned vegetables and fruits. Any contract in excess of \$10,000 awarded as a result of a bid submitted is subject to the Public Contracts Act (Walsh-Healey Act) passed by the Seventy-fourth Congress. This act provides that no person employed by a contractor "in the manufacture or furnishing of the materials, supplies, articles, or equipment used in the performance of the contract shall be permitted to work in excess of 8 hours in any one day or in excess of 40 hours in any one week" unless the Secretary of Labor permits and such person is paid the overtime rate set by the Secretary. The act also provides for the establishment by the Secretary of Labor of minimum wages for the industry based on prevailing minimum wages for persons employed on similar work or in the particular or similar industries currently operating in the locality in which the supplies are to be manufactured or furnished under contract. No such minimum rate has been set for canning as of April 1, 1940. Until otherwise determined, the rate of pay for overtime, that is, work in excess of 8 hours in any one day or in excess of 40 hours in any one week, is one and one-half times the basic hourly rate or piece rate received by the employee. The act prohibits the employment of boys under 16 and girls under 18 years of age, and all convict labor on Government contracts subject to it. It also requires the contractor to stipulate that no part of the contract will be performed in plants, factories, buildings, or surroundings or under working conditions that are insanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of such contract.

The major Governmental subsistence-purchasing units are the Army, the Board of Engineers for Rivers and Harbors, the Navy, the Marine Corps, the Veterans' Administration, and the Departments of the Interior, Justice, and the Treasury. Their purchasing practices differ. The Army buys canned food for commissary sale at each post or station and for general issue at its six depots. The Navy purchases are centralized in Washington for general issue, though food for the commissary is purchased in the various localities. The Marine Corps purchases canned food for the area east of the Mississippi at Washington and for the area west of the Mississippi at San Francisco. The Department of the Interior's canned-food purchases for the Indian Service and the National Park Service are

centralized in Washington. The Department of Justice buys food for each of its institutions at points near such places. The Treasury's food purchases for the institutions in the District of Columbia are centralized in Washington.

Each Government organization observes a different canned-food-purchasing practice. The Army depots buy for the Regular Army and for the C. C. C. generally on a quarterly basis. Invitations for bids for subsistence contracts may call for as many as 100 items, and to obtain price advantage each item may be awarded individually. While these food contracts amount to much more than \$10,000 in the aggregate, very few of the individual food-item contracts are over \$10,000 for a quarter. For commissary-sales stores the Army makes some purchases under what is known as "order agreements." These contracts are made with manufacturers of national brands who can show that their goods are demanded by commissary customers. The agreement stipulates that the Army is to receive the lowest prevailing price for that brand of goods, after which agreement each commissary can buy its own goods in quantities desired. As these agreements run for indefinite periods, the total sum of purchases is large, though individual orders never reach \$10,000. While the Board of Engineers for Rivers and Harbors buys independently of the Regular Army for maintenance of workers on projects, its district offices follow the same general food-purchasing practices.

The Navy and the Veterans' Administration purchase their heavily-consumed canned items separately. A single contract for each item covers country-wide requirements for a year. The contracts may be awarded before, during, or after the canning season. As a result, the Veterans' Administration reported that in money value 53½ percent of their contracts were over \$10,000 in the fiscal year 1939, though in number of contracts only 15.6 percent were over \$10,000. The officials of the Navy estimated that in money value 75 percent of their contracts, but in number of contracts 50 percent, were over \$10,000. The Navy uses the "indefinite" contract on standard brands for commissary sales; that is, the contract for branded goods at specific rates, the same to be supplied at local commissary order for an indefinite period.

While the Marine Corps purchases seasonal canned foods on an annual basis and nonseasonal foods on a semiannual basis both during and after the packing season, it reports that few contracts are for sums over \$10,000. The Interior Department, purchasing canned goods quarterly, estimated that 5 percent of their contracts and 40 percent of the money value were in amounts in excess of \$10,000. Neither the Department of Justice nor the Treasury, purchasing canned food on quarterly and two-month bases, respectively, awards large contracts.

Obviously these unstandardized purchasing practices on subsistence items automatically eliminate contractors of some Government departments from the Public Contracts Act and include within it contractors of other departments. They also eliminate the large producers of standard brands who secure "order" or "indefinite" contract agreements. The system of calling for bids on small amounts of many grocery items has made large grocery companies important canned-food Government contractors. If these companies bid on contracts of more than \$10,000, they may secure the canned goods

from several canners, no one of which takes over \$10,000 of the award, though each may well be able to fill the entire contract. Nor is it necessary, unless so specified in the invitation for bids, for any firm to bid on amounts in excess of \$10,000 though the quantity to be purchased exceeds \$10,000. As a result, an award for a specific item may be given to several grocers, who in turn may buy the goods from the same canner. As the Public Contracts Act applies to individual contracts with individual contractors, such a canner would not be covered by the law. Then again, canned goods purchased on a quarterly basis may be already packed and therefore exempt. The spirit of the Public Contracts Act can be defeated easily in the awarding of canned-food contracts.

As has been stated, at the time of the 1938 survey only the hour and over-time provisions of the law were effective for contracts on canned goods in excess of \$10,000. Almost all canneries operating at sufficient capacity to carry orders of this size employed some men and women over 56 hours for some weeks in the 1938 canning season. Had these canners held Government contracts on food being packed, they would have had to pay time and a half to all persons working over 8 hours on any day or over 40 hours in any week. Canners in Wisconsin have been accustomed by State law to paying adult women time and a half for over 9 hours of work; canners in California, time and a quarter for over 8 up to 12 hours and double time for over 12 hours a day; canners in Washington, time and a half for over 8 to 12 hours and double time for hours over 12 in unionized firms only. Consequently, the public contracts overtime-pay clause is no deterrent to bids for Government food contracts by canners in Wisconsin and California nor by some in Washington. Packers in other States are reluctant to bid or to make quotations to wholesale grocers unless the food has already been canned or the contract is not in excess of \$10,000, because the practice of overtime pay is not regularly in effect in their plants.

At the time the canneries were visited in 1938, only about a third of those reporting had Government contracts or had had such contracts during the past year. This proportion was about two-fifths in New York, Washington, and Wisconsin and was over one-half of all firms reporting in California. In New Jersey and Pennsylvania, where only a few plants were scheduled, 60 percent or more had Government contracts. The contracts had been received by direct bidding by canners in almost half (46 percent) of the cases; all other Government work came through wholesale grocers or brokers. No attempt was made to check on the value of the awarded contracts.

COLD-PACKED AND FROSTED FRUITS AND VEGETABLES

Cold-Packed Fruits.

For many years berries and fruits have been cold-packed for the use of jam and preserve manufacturers, pie bakers, ice-cream makers, and soda-fountain-supply houses. The fruit is prepared as it is for canning but is put into barrels or large tins that hold from 10 to 50 pounds. Both tins and barrels are put in a cold-storage warehouse, where they are subjected to a slow-freezing process at temperatures from zero to 30 degrees above, depending on the freezing point of the product.

Because of the perishability of berries, this cold-packing is done close to the berry fields. Some ice-cream and bakery houses do their own packing; cold-storage warehouses give them space for the short time necessary for preparing the fruit and a local crew of women is hired. The fruit is then stored in the warehouse and shipped out at order of the company concerned. Other firms make a specialty of cold-packed products and sell them direct or through brokers, using the local or the city cold-storage warehouse for the freezing of their products. Some of these firms may pack fresh fruits. Then again, canneries do cold-packing. A few canneries were found that cold-packed peas, beans, and corn for their own subsequent use in canning mixed vegetables.

According to the 1937 Census, more than half the cold-packing of fruits (based on value of product) is done in the Pacific Northwest, that is, in Washington and Oregon. Michigan, Maryland, and New York are States of next importance. Berry packing takes place also in Tennessee and Virginia.

Frosted Fruits and Vegetables.

Methods of quick-freezing fruits and vegetables at temperatures from zero to 50 degrees below to preserve their original fresh condition have been developed only in recent years. The patents for these processes are held by a few firms. These firms have found it necessary, however, to tie up their freezing operations with canning operations. Only limited varieties or sizes of each fruit or vegetable are adapted to quick-freeze; without the use of other varieties and sizes in canning, waste would be prohibitive. Today canneries prepare berries, peaches, and other fruits, peas, lima beans, and other vegetables for quick-freeze and for canning at the same time. Those products selected for quick-freeze are packed in cartons instead of in cans. The carton packing and weighing may be a hand or a machine process. Cartons are then heat-sealed and placed in freezers at temperatures from zero to 50 degrees below. The quick-freeze may be a portable unit quickly shifted to different locations. Sometimes

the prepared vegetables from several canneries are hauled to a central freezing station. Individual containers are later cased and stored at temperatures hovering about zero. The marketing is done by the firm holding the patent and under its name.

The Pacific Northwest is the largest producer of frosted berries and vegetables as it is of cold-packed fruits. In the search for the products suitable for quick-freezing, canners over a wide area have been induced to undertake the preparation of fruits or vegetables for the freezing process. It is stated that the number so engaged in 1938 was between 60 and 70 canners and that a rapid expansion was expected by 1939.

Plants Visited.

Fifty-five plants were visited in 1939 that preserved fruits or vegetables by cold rather than by heat as in canning: 46 packed fruit for cold storage and 9 worked on quick-freeze produce. Of the 46 on cold-packing, 16 handled no other fruit, 11 packed fresh fruit or evaporated apples as well as cold-packing cherries or berries, 10 did canning and cold-packing, and 9 did canning, cold-packing, and quick freezing. The 9 firms that prepared the quick-freeze fruit and vegetables all were canning firms, though 4 of the plants merely prepared produce for frosting or did the freezing for several canneries. Of the 55 plants included in the survey, therefore, 28 were canners, 11 were fresh-fruit packers, and 16 engaged only in cold-packing of fruit or engaged in it as secondary to a bakery or ice-cream business.

Plants visited that engaged only in cold-packing or did cold-packing and fresh-fruit packing were in Michigan, New York, Oregon, Tennessee, Virginia, Washington, and Wisconsin. Plants surveyed that canned and did cold-packing or quick-freezing of fruits or vegetables were in Indiana, Michigan, Minnesota, New York, Oregon, Virginia, Washington, and Wisconsin. While the larger number of plants surveyed were in rural communities, the larger number of employees were in town plants.

Because the processes of preparing fruits and vegetables for preservation by cold are the same as those used in preparing these products for canning, and because all frosted-fruit-and-vegetable packers and many cold-packers are canners, only data that will indicate any differences in wages and hours of workers on the cold processes will be reported here.

Hours Worked.

Washington and Oregon are outstanding States in these preserving industries, as they handle practically all varieties of fruits and vegetables that are cold-packed or frosted. Two-thirds (66 percent) of the workers in Washington and over one-half (54 percent) of those in Oregon were employed less than 40 hours in active weeks of cold-preserving in 1939; only 6 percent of Oregon employees and only 14 percent of Washington employees worked more than 56 hours. While these are larger proportions than worked in excess of 56 hours on the canning of berries and cherries in California and Washington in 1939, whether small fruits were canned, cold-packed, or frosted, the larger number of workers were employed short hours.

TABLE XXXIV.—Hours worked by all employees, 1939 season, by State—COLD-PACKED AND FROSTED PRODUCTS

Hours worked in pay-roll week recorded	Number and percent ¹ of all employees															
	Total		Indiana, Minnesota, and Wisconsin		Michigan		New York		Oregon		Tennessee		Virginia		Washington	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total.....	7,965	100.0	299	100.0	890	100.0	2,108	100.0	1,736	100.0	275	100.0	680	100.0	1,977	100.0
Under 40.....	3,846	48.3	177	59.2	337	37.9	673	31.9	945	54.4	189	68.7	225	33.1	1,300	65.8
40.....	43						26		6				7		11	
Over 40, under 42.....	267		36	12.0	28		45		111		5		7		35	
42.....	45		1				8		22				1		13	
Over 42, under 44.....	289		4		12		128		93		2		7		43	
44.....	120		3		2		20		38		1		12		44	
Over 44, under 48.....	464		10		40		114		179	10.3	10		7		104	
48.....	39				5		13		6		3		3		9	
Over 48, under 56.....	674		7		97	10.9	148		190	10.9	33	12.0	61	9.0	138	
56.....	79				7		4		43		1		10		14	
Over 56, under 60.....	387		8		44		157		50		7		70	10.3	51	
60, under 80.....	1,255	15.7	39	13.0	225	25.3	547	25.9	42		23		196	28.8	183	9.3
80 and over.....	457		14		93	10.4	225	10.7	11		1		81	11.9	32	

¹ Computed for chief groups only.

In New York State, where cold-packing of cherries and berries and frosting of peas, lima beans, and other vegetables is carried on, 44 percent of the employees worked in excess of 56 hours. This proportion also is higher than the proportion employed such hours in New York canning, except on tomatoes and corn. In Michigan cold-packing of cherries and berries, over 41 percent of the employees worked in excess of 56 hours, though 38 percent were employed less than 40 hours. A very large proportion of Virginia workers, but much smaller proportions in Tennessee and in Indiana, Minnesota, and Wisconsin, were employed over 56 hours.

The location of cold-packing or frosted-food plants in rural areas or in towns had little effect on hours of employment.

Hourly Earnings.

Washington and Oregon have had State minimum-wage regulations for women and minors for many years, and some firms had union contracts in 1939. As the Washington minimum-wage rate was 37½ cents an hour, only 3 percent of all workers earned less than that, no one earning below 28 cents. Almost half the Washington employees on cold-pack or frosted fruits or vegetables earned 40 cents an hour, more than a fourth earned 50 cents an hour, and an eighth exceeded 50 cents in a week of active cold-preserving in 1939. There was little difference in earnings in Washington plants between rural communities and towns. In Washington plants the wage scale was similar on the two methods of preserving fruits and vegetables—whether canning or cold-preserving.

Oregon's minimum-wage rate for experienced women and minors is 35 cents an hour. Thirty percent of those employed on cold processes earned this amount, and only 1 percent earned less, in an active preserving week in 1939. Thirty percent earned 40 cents, and 15 percent earned 45 or 50 cents. While the average earnings in Oregon cold-processing plants in rural communities were 5½ cents less than in town plants, no worker had earnings below 28 cents in either location.

New York cold-processing plants paid 25 cents an hour to more than half their employees in an active preserving week in 1939. The 2 percent paid 20 cents were employed in plants in rural areas. A second point of earnings concentration in unincorporated areas was at 30 cents, and in the larger communities at 35 cents. Nevertheless, the average earnings of workers in towns of 2,500 and over were 29 cents, only slightly above the 28.5 cents in plants in rural areas. These earnings differ but little from earnings on canning processes in New York.

Michigan plants included in the survey were cold-packing berries, cherries, and other fruits along with canning or fresh-fruit packing or apple evaporating. Here too, more than half the employees earned 25 cents in an active week of 1939. The majority of those paid 20 cents (7.4 percent of the total) were employed in plants in rural communities. The average earnings of workers in cold-packing plants in towns of 2,500 and over were 28.2 cents, and in rural plants 26.2 cents.

The hourly earnings in Indiana, Minnesota, and Wisconsin cold-preserving plants had to be thrown together to prevent disclosure of individual records. The one rural plant reporting paid either 20 cents

or 25 cents an hour to its employees. In plants in incorporated towns all employees received 25 cents an hour or more; 30 cents and 35 cents also were points of earnings concentration.

Virginia cold-packing and frosting plants paid 25 cents to 95 percent of their workers, and practically all others were paid between 25 cents and 35 cents an hour, in an active canning week in 1939. Reports from Tennessee, however, showed the 275 employees for whom hours data were available in that State to be earning 15 cents an hour or less.

TABLE XXXV.—*Distribution of all employees according to hourly earnings, 1939 season, by State and population group—COLD-PACKED AND FROSTED PRODUCTS*

Hourly earnings (cents)	Employees with hourly earnings as specified in—													
	Indiana, Minnesota, and Wisconsin		Michigan		New York		Oregon		Tennessee		Virginia		Washington	
	Towns of under 2,500	Towns of 2,500 and over	Towns of under 2,500	Towns of 2,500 and over	Towns of under 2,500	Towns of 2,500 and over	Towns of under 2,500	Towns of 2,500 and over	Towns of under 2,500	Towns of 2,500 and over	Towns of under 2,500	Towns of 2,500 and over	Towns of under 2,500	Towns of 2,500 and over
Total	65	234	223	734	1,266	1,074	757	979	275	361	319	868	1,109	
Average earnings (cents)	20.9	30.8	26.2	28.2	28.5	29.0	38.7	44.3	13.0	25.2	25.4	45.3	45.4	
	Percent of employees													
Under 20	81.5		27.8	1.2	4.0					100.0	96.7			
20, under 25						0.1					.8	0.3		
25	18.5	32.1	26.0	60.9	48.3	61.4					1.7			
26, under 30		.9	15.2	.3	4.7	4.0	0.1				.8	92.5		
30		30.3	19.7	18.1	29.0	.6		0.2			3.8			0.1
31, under 35		9.8	.9	4.1	.6	4.2		1.7			.6	0.1	3.8	
35		15.4	8.6	8.7	6.4	25.3	64.5	4.0			.3		.5	
36, under 40		6.4		.3	.2	.2	.7	.1					1	7.3
40		.9	1.8	4.1	3.0	2.0	2.5	51.7					60.0	40.5
41, under 45		1.3		.1	.5			.2					1.3	4.1
45				1.6	.8	.7	27.2	4.9					.8	2.8
46, under 50					.2		.9	.7					1	2.0
50 and over		3.0		.5	2.2	1.6	4.1	36.4			.3	37.6	39.0	

THE CANNING OF CITRUS FRUITS AND JUICES IN 1939

The canning of citrus products is centered almost entirely in three States: Florida, Texas, and California. Florida is the outstanding citrus-canning State, producing over 95 percent of the canned grapefruit sections (as reported by National Cannery Association), over 50 percent of the canned grapefruit juice, and 36 percent of the canned orange juice as reported by the 1937 Census of Manufactures. Texas cans a very small amount of grapefruit sections but over two-fifths of the grapefruit juice. California's canned-citrus production is only 10 percent of the total and is largely lemon and orange juice and citrus byproducts.

Pack and Employee Coverage.

In making a study of the citrus-canning industry in 1939, agents of the Women's Bureau visited 45 plants in Florida, Texas, and California. These plants employed a total of 6,714 persons in a week of active operation in 1939. Their combined output was approximately 70 percent of the total canned citrus production as reported by the 1937 Census of Manufactures. The sample is greater for citrus juices, which constitute two-thirds of the total canned citrus products, than for citrus-fruit sections.

Thirty-three of the 45 plants included in the study canned only citrus fruits, juices, or byproducts; 12 plants canned also vegetables. The 33 plants whose sole output was citrus products were distributed among the three States very much in accordance with the States' importance in this industry: 4 orange- and lemon-juice plants in California, which also made some citrus byproducts; 9 grape-fruit-juice plants (one canning orange juice also) in Texas; and 20 citrus canneries in Florida (11 canning juice only, 6 canning both juice and fruit, and 3 canning fruit only). Of the 12 establishments canning vegetables as well as citrus products, 1 of the 2 in Florida canned juice, the other fruit and juice, and 10 in Texas canned juice only in 6 cases, juice and fruit in 2 cases, and fruit only in 2.

The 6,714 employees in the plants covered represent a sample of at least 45 percent of employment in the citrus-canning industry. This is a conservative estimate based on 1937 Census figures of the maximum number employed in any one month in the entire canning industry of Florida and Texas. Florida's canning industry is mainly citrus, and the citrus industry is fairly important in Texas.

The table following shows the numbers of plants and employees included in the survey, by State and product.

Because of the differences in the three States in season and product, and the differences in operations between fruit canning and juice canning, the following discussion deals separately with each State and each type of product. In citrus-juice plants the operations are

simple and highly mechanized, requiring relatively few employees to turn out large quantities of juice; few if any women are employed in these plants, and practically all operations are paid by the hour. In the fruit plants there are many preparatory hand operations requiring a relatively large number of employees, in most cases women paid on a piece-work basis.

TABLE XXXVI.—*Number of establishments visited and number of persons they employed, 1938-39 season, by State*

CITRUS-FRUIT PRODUCTS

State	Total number of plants	Total number of employees	Plants whose citrus products were—					
			Juices		Fruits		Fruits and juices	
			Number of plants	Number of employees	Number of plants	Number of employees	Number of plants	Number of employees
Total.....	145	6,714	31	2,009	11	2,762	3	1,943
California.....	4	382	4	382	—	—	—	—
Florida.....	22	4,945	12	800	7	2,202	3	1,943
Texas.....	19	1,387	15	827	4	560	—	—

133 of these plants canned citrus products only.

Size of Community and Distance of Cannery From Fruit Supply.

The citrus-canning industry in Florida is situated mainly in the central and west-central part of the State in Polk, Hillsborough, Lake, and Orange Counties. The 20 Florida canneries in this survey whose sole output was citrus products were equally divided between towns of less than 2,500 population and those of 2,500 or more. The longest distance of the 10 canneries in the smaller towns from their supply of fresh fruit was reported in 9 cases. Only 3 obtained all their fresh fruit within a radius of 10 miles; of the 3, only 1 canned nothing but fruit from its own groves.

In Texas the industry is concentrated in one small region in the lower Rio Grande Valley, in the southernmost tip of the State. Here 9 canneries whose products were exclusively citrus were scheduled. None of the 4 plants in towns of under 2,500 population obtained its entire supply of fresh fruit from groves within 10 miles, though 3 stated that this was the usual distance. Only 1 got all its fresh fruit from points within 10 miles, and this plant was in a town of 2,500 or more.

The very few establishments in California canning citrus products solely are in the southern part of the State in towns of at least 5,000 inhabitants. The 4 plants included in the survey were in towns of 10,000 or more. Only 1 plant obtained all its fresh fruit within a radius of 10 miles, and this was from its own groves.

Length of Season.

The citrus-canning season is a relatively long one, though it varies considerably in the three States. California, the least important as a citrus-canning State, has the longest period of active operation.

TABLE XXXVII.—Number of weeks over which canneries operated in 1938 and in 1939, and number of days on which canning was done, by State—CITRUS-FRUIT PRODUCTS

State	Weeks over which plant canned		Days on which canning was done		Weeks of canning								
					Under 6 weeks			6, under 10 weeks			10, under 14 weeks		
	Number of plants reporting	Average number of weeks	Number of plants reporting	Average number of days	Total number of plants	Average days worked		Total number of plants	Average days worked		Total number of plants	Average days worked	
						Number of plants	Days		Number of plants	Days		Number of plants	Days
Total	26	26	23	119	1	1	15				3	3	48
California	3	52	2	300									
Florida	16	25	15	113	1	1	15				2	2	45
Texas	7	17	6	74							1	1	55
Total	32	29	26	145				1			5	4	55
California	4	51	2	300									
Florida	19	30	17	151							2	2	52
Texas	9	16	7	87				1			3	2	59

State	Weeks of canning											
	14 weeks			15, under 26 weeks			26, under 39 weeks			39 to 52 weeks		
	Total number of plants	Average days worked		Total number of plants	Average days worked		Total number of plants	Average days worked		Total number of plants	Average days worked	
		Number of plants	Days		Number of plants	Days		Number of plants	Days		Number of plants	Days
Total				10	9	88	7	6	128	5	4	257
California												
Florida				5	5	88	7	6	128	3	2	300
Texas				5	4	88				2	2	215
Total	1	1	77	6	6	89	11	9	166	8	6	242
California												
Florida				2	2	59	11	9	166	4	2	300
Texas	1	1	77	4	4	104				4	4	213

In fact, citrus canning is a year-round industry in California, rather than a seasonal one, having an average of 51 canning weeks in 1939 and 52 in 1938, with an average of 300 canning days in each year. This steady operation is due to the fact that lemons are a year-round fruit and oranges nearly so, since the seasons for navels and Valencias¹⁷ overlap and provide fresh fruit for practically the whole of the year.

The citrus canning season lasts in Florida for 6 or 7 months, in Texas for only about 4 months. The Florida season usually runs from December to July, with possibly a month's variation at either end. In Texas the season generally is from January to April or May.

The 17 Florida citrus plants reporting on canning period had an average of 30 canning weeks in 1939. Plants reporting on the number of days on which canning was done averaged 151 days, but the majority canned on more days than this, 9 averaging 166 days and 4 averaging 213 days. The season was shorter in 1938. Of 16 plants reporting for 1938, 7 had canned for less than 26 weeks, while in 1939 there were only 4 of 19 plants that canned for so short a period. The 16 citrus canneries that reported on number of canning weeks in 1938 averaged 25 weeks; 15 that reported on number of days averaged 113 as the days on which canning was done. A bare majority canned more days than this, 6 averaging 128, 2 averaging 215.

The nine Texas citrus-juice plants covered in the study averaged 16 weeks of canning operations in 1939. The average for the seven plants reporting days of canning was 87 days, four of these averaging 104 days in a period of 15 and under 26 weeks. Though the Texas canneries reporting weeks of canning in 1938 averaged 1 more week in 1938 than in 1939, the average canning days (reported by six plants) were fewer, 74 as against 87.

To summarize: For 1939 the Florida citrus canneries reporting averaged 30 weeks of canning, in contrast to 16 for the Texas plants; and 151 canning days in contrast to 87 in Texas. The 1938 season was not so long in either State; Florida's canneries ran juice or fruit on an average of 113 days, the Texas plants on an average of 74 days.

Source of Seasonal Labor Supply.

Citrus canneries have very different requirements as to the kind and amount of labor needed when the season is on. Juice plants require men almost exclusively—to handle the large quantities of fruit, tend the juicing machines, truck the cans, dispose of the peel. Fruit plants require a large number of women to do the careful hand operations of cutting apart the fruit segments or sections and placing the prepared fruit in the cans.

Texas.—Texas citrus canneries employ men almost exclusively, as their product is chiefly juice. The majority of the Texas canneries included in the survey employed local casual laborers—the odd-job men from the community—for at least half of their seasonal force. Farmers and other agricultural wage earners supplied as much as three-fourths of the labor in only two canneries, but some part of the labor in four others. One cannery drew most of its men from other industries during their dull periods and one other depended on migrants for half to three-fourths of its seasonal force. Only one

¹⁷ Season for navels approximately November to May; season for Valencias approximately April to November.

Texas cannery scheduled employed women, most of these coming from nearby farms.

Florida.—The citrus canneries of Florida likewise drew mainly on the local supply of casual laborers for their men employees. In 12 of the 19 citrus canneries that reported on source of labor supply this group formed half or more of the force. Farmers and other agricultural workers also were drawn upon to some extent; 13 firms used this supply for some part of their seasonal force and two firms obtained three-fourths or more of their employees from this group. Florida canneries made much more use of migrant workers than did the Texas plants. In 13 canneries some part of the force were migrants, in four of these from half to three-fourths. In plants where the fruit is canned, women are employed to separate the sections by hand and to place them in the cans. Nine of the 19 Florida citrus canneries covered in this study employed women. In seven of these the main source of labor supply was local housewives, and one other plant obtained from 25 to 50 percent of its women employees from this group. Eight canneries drew some of their women workers from migrants, but in the majority of plants the proportion of these among the total women employees was low, less than 25 percent. Six of the nine canneries employing women used a small proportion of local casual workers.

Hours Worked.

The data obtained in the survey included records of individual earnings and hours worked in one full-time week in the 1939 season. However, records of hours worked were not available for all employees. This was especially true in Texas, where hour records were lacking for more than a fourth of those included in the study. In Florida there were no hour records for 10 percent of the employees covered; in California records were lacking for 2 percent. Only 9 percent of the 45 citrus pay rolls copied were from canneries within the area of production as defined by the Administrator of the Fair Labor Standards Act and therefore were totally exempt from the law.

About half the workers in Texas juice plants and over a third of those in fruit plants worked over 56 hours in the week reported. The long hours were worked in 16 (1 wholly outside the law) of the 19 plants surveyed. It is important to note that three Texas citrus canneries employed no one in excess of 56 hours.

Of workers in Florida, about 41 percent in juice plants and 14 percent in fruit plants worked more than 56 hours in the week. Only 2 of the 19 plants outside the area of production paid higher rates for overtime, and in these plants overtime pay began after 44 hours. In California juice plants a sixth of the employees worked over 56 hours; overtime was paid after 44 hours in 2 plants. There was no report on 2 plants whose workers were paid semimonthly.

In Florida a far larger proportion of workers were employed 60 hours and over in rural citrus-juice plants than were so employed in plants in towns of 2,500 and over. A similar but somewhat modified condition existed in Texas juice plants. The same trend is noticed in citrus-fruit plants.

TABLE XXXVIII.—Hours worked by all employees, 1939 season, by State—
CITRUS-FRUIT PRODUCTS

Hours worked in pay-roll week recorded	CITRUS FRUITS			CITRUS-FRUIT JUICES				CITRUS FRUITS AND JUICES
	Total	Florida	Texas	Total	California	Florida	Texas	Total—Florida
Total	2, 115	1, 823	292	1, 817	374	723	720	1, 929
	<i>Percent distribution</i>							
Under 40	28.7	29.7	22.6	30.6	36.4	28.9	29.3	25.5
40	1.5	1.7	.3	.4	.8	.4	.1	.6
Over 40, under 42	2.0	1.6	4.5	1.9	3.5	2.4	.7	1.1
42	7.0	8.0	.7	1.2	.5	2.5	.3	.6
Over 42, under 44	8.3	8.9	4.8	2.5	5.3	1.8	1.7	.7
44 .....	.4	.3	1.0	1.7	.3	3.5	.6	.2
Over 44, under 56	34.8	35.7	28.8	20.6	36.7	17.5	15.2	47.2
56 .....	.7	.5	1.4	2.6	—	2.4	4.2	.2
Over 56	16.8	13.7	35.9	38.6	16.6	40.6	47.9	24.0

Hourly Earnings.

The largest single group of workers, about half of those in each type of citrus cannery, earned 25 and under 30 cents an hour. There was little variation in the proportion within this 5-cent interval between citrus fruit, citrus juice, and the two combined. The variation was much greater in the percentage with earnings below 25 cents. In the canneries whose products were both citrus fruit and juice, 19.9 percent earned less than 25 cents an hour, as did 12.5 percent in the citrus-fruit plants and 3.7 percent in the citrus-juice canneries. Average hourly earnings in citrus-fruit canneries were 30.1 cents, in citrus-juice canneries 31 cents, and in the plants canning both fruit and juice 27.6 cents.

Florida.—The average hourly earnings in Florida citrus canneries varied from 27.6 cents in the plants canning both fruit and juice to 30.9 cents in those canning fruit only. The juice canneries fell between these two, with average hourly earnings of 29 cents. One-fifth of the employees in the canneries producing both juice and fruit earned less than 25 cents. These canneries were in towns of 2,500 or more population and earnings were computed for 1,929 workers.

In the plants whose sole product was citrus fruits, 264 workers (14.4 percent) earned less than 25 cents an hour. Over three-fifths of these 264 employees worked in canneries in towns of 2,500 population or more. The proportion earning less than 25 cents an hour in the juice plants was much lower—0.8 percent; these were in towns of 2,500 or more. It is interesting to note that average hourly earnings in the Florida fruit canneries in towns of less than 2,500 were higher than those of any other group, irrespective of State, size of community, or product, with the exception of juice plants in the large towns in southern California.

Texas.—Texas workers, whether in fruit or juice canneries, had the same average hourly earnings, 25.2 cents. There were none in the fruit canneries who received less than 25 cents an hour, but 8.3 percent in the juice canneries did so. This group with earnings below

25 cents were all in canneries in towns of less than 2,500 population. The heavy concentration of workers at 25 cents is especially marked in Texas, where 97.3 percent of the employees in fruit canneries, and 80.7 percent of those in juice canneries, received 25 cents an hour.

California.—California differs radically from the other two citrus-canning States in the matter of hourly earnings. The average earnings per hour were 45.7 cents; no employee received less than 25 cents, only 1.9 percent of the total received less than 35 cents; about 85 percent were paid 40 cents an hour or more, 26 percent receiving at least 50 cents.

TABLE XXXIX.—*Distribution of all employees according to hourly earnings, 1939 season, by State and population group—CITRUS-FRUIT PRODUCTS*

Hourly earnings (cents)	CITRUS FRUITS				CITRUS-FRUIT JUICES					CITRUS FRUITS AND JUICES
	Florida		Texas		California	Florida		Texas		Florida
	Towns of under 2,500	Towns of 2,500 and over	Towns of under 2,500	Towns of 2,500 and over	Towns of 2,500 and over	Towns of under 2,500	Towns of 2,500 and over	Towns of under 2,500	Towns of 2,500 and over	Towns of 2,500 and over
Total	825	998	100	192	374	224	488	201	519	1,929
Average earnings (cents)	31.7	30.2	25.4	25.2	45.7	27.9	29.5	23.2	25.9	27.6
	<i>Percent of employees</i>									
Under 20	3.8	10.8						25.9		9.4
20	1.2	.9					1.2	3.5		1.9
21, under 25	7.2	4.7						.5		8.6
25	11.6	16.6	96.0	97.9	0.3	55.8	18.4	59.7	88.8	21.9
26, under 30	28.1	29.2			.8	19.6	23.4	2.5	.2	28.0
30	7.4	5.2	3.0	.5		7.6	43.6	3.0	5.8	7.9
31, under 35	14.8	10.3			.8	10.3	3.3	1.0	1.3	10.1
35	1.9	2.5		1.6		3.5	3.1	5.3	1.0	3.3
36, under 40	9.5	4.9			9.9	.4	1.4		.2	4.7
40	1.9	2.3			29.1	.4	.6	1.0	.8	1.1
41, under 45	3.9	3.0			2.7		.8	.5	.2	1.2
45	.7	1.0	1.0		21.9	.4		.5	.4	.4
46, under 50	1.9	3.2			5.3	.4	.2			.7
50 and over	6.1	5.3			25.7	1.8	1.6	1.0	.2	.8

In Citrus-Juice Canneries.—Though a little over two-thirds of the citrus plants included in this study were juice canneries, the number of workers in juice plants was less than a third of all employees covered. A comparatively small group of men operating machines can turn out large quantities of juice, and relatively few key men are required. The key men had higher rates of pay than those in less responsible positions, though in Florida the average was only half a cent above that for maintenance and custodial employees, 33.7 cents an hour compared to 33.2 cents. Almost three-fifths of the employees in Florida juice plants were general unskilled workers with average hourly earnings of 27.2 cents.

In Texas juice canneries the key men averaged 30.8 cents an hour, but 80 percent of the employees were general laborers, with an average of 24.4 cents.

Over three-fourths of the employees in the California juice canneries were general unskilled laborers. Their average hourly earnings were 44.3 cents. There were too few key men in the California plants to make an average for them significant. California had a few piece workers in its juice canneries, chiefly men doing burring. Work in citrus-juice canneries is paid almost entirely on a time-work basis.

In Citrus-Fruit Canneries.—The number of workers in fruit canneries is much greater per plant and in relation to output than the number in juice canneries. The fruit must be peeled, and the segments or sections must be cut apart and placed in the cans with considerable care to prevent breaking them. Hand labor still is required for most of this work of preparation, so the proportion of women piece workers usually is large, particularly in Florida.

In the Florida citrus-fruit canneries over two-thirds of the employees, in Texas over two-fifths, were piece workers. In the Florida canneries putting up fruit only, these piece workers had higher hourly earnings (32.2 cents) than time workers had (28 cents). The preparers (practically all the piece workers) had an average of 31.9 cents. The next largest group were the general unskilled workers, whose average was 27.7 cents. Those in key positions averaged 30.7 cents an hour.

No records of hours worked were available for the piece workers in Texas citrus-fruit canneries. Practically all other workers for whom records were secured averaged 25 cents an hour. There were too few key men for the computation of an average for that group.

In Fruit and Juice Canneries.—In the Florida plants canning both citrus fruits and juices, 65 percent of the employees were piece workers. In comparison with the piece workers in plants canning fruit only, this group had low hourly earnings. Their average was 26.9 cents, compared to 29.1 cents for the time workers. The preparers (largely piece workers) also averaged 26.9 cents, slightly below the 27.5 cents of the general unskilled group. The few key men averaged 35.1 cents an hour.

THE DRIED-FRUIT INDUSTRY

As has been said in the statement on scope of the entire fruit-and-vegetable-preserving study, there were included 41 dried-fruit-packing plants that packed, on the basis of United States census figures for 1937, over three-fifths of the country's dried fruit and gave some employment to 7,237 persons. The industry is concentrated in California, from which State all the 1937 apricot, fig, peach, pear, and raisin packing was reported. California also packs most of the prunes, though other Pacific coast States report some volume. Apples are the only fruit dried in a number of sections of the country. New York and Washington apple-evaporating plants were included in the survey.

The drying of fruit, whether by the California sun or by dehydration when done in connection with the orchard, is not covered by this study. Only when the fruit is delivered to the packing house is the operation considered an industrial rather than a farming process. While varying in technical details, the handling of the various kinds of California dried fruits is essentially the same. Apple evaporating is a distinct industry.

PREPARATION OF DRIED FRUIT

Dried prunes, for example, are received and weighed and are graded for size on shaker tables. They may be stored until the packing line begins to run. Prunes are then sorted by hand as they pass on moving belts before women. Then follows a heat processing, during which the fruit is immersed in hot water or steam for a few minutes. The prunes are then ready for packing in bags, cartons, or boxes. Wooden box packs are compressed and closed.

The Government standards call for a maximum moisture content in dried products. Often apricots are given a special processing to attain the correct degree of swelling.

When raisins reach the packing house they are weighed and the quality is determined by a sample test. They pass through a mechanical stemmer operated by one or two men and from there go to the shaker table, where they are freed from stems and waste. Raisins are then graded by agitated screens and go through a mechanical recleaner. They are then ready for packing.

Apples are sent to the evaporating plant from the orchards. There they are peeled and cored by machine, and then pass before women trimmers who trim out any blemishes. From this they go to a slicing machine and then to kilns for evaporating. After drying they are kept loose until ready for bagging. They are stored in large bags and packed in retail-sized containers in the warehouse.

Women comprise half the workers in the dried-fruit plants surveyed.

LENGTH OF PACKING SEASON

Twenty-seven California plants reported the length of their operating season in 1937. For 26 it was three-fourths or more of the year and for 1 it was less than half the year. Within this period 50 percent or more of the annual pay roll was disbursed in 14 weeks in 20 plants, whereas in the remaining 7 plants from 40 percent to 49 percent was disbursed in this period. While pay-roll volume is not synonymous with production volume, it is indicative of that volume and would lead to the belief that most of the California dried-fruit-packing plants would be considered "seasonal industries" according to the regulations of the Administrator, and be subject to the exemptions under section 7 (b) (3) of the Fair Labor Standards Act.¹⁸

The evaporating of apples takes place over a period of much shorter duration. Of the nine plants reporting weeks over which the drying and packing were done, three operated 10 but under 14 weeks, one on 30 days in 14 weeks, four averaged 72 days in 15 and under 26 weeks, and one as many as 108 days in 29 weeks. As apples are brought to the evaporating plants as fresh fruit, evaporating plants may be covered by section 13 (a) of the Fair Labor Standards Act, that is, if "within the area of production (as defined by the Administrator)" they are not covered by the wage and hour provisions of the act; otherwise they are, though covered, permitted the same hours exemption for 14 weeks as other perishable fruit industries.

Busy Season.

While spoilage occurs in dried fruit or fresh apples in the packing house, the urgency of speed in preparation that is found in canneries does not exist in packing houses. Instead of a sharp peak load, operation becomes intensive gradually at the end of the summer months. In California there were 5 weeks when pay rolls were four-fifths or more of the maximum, with preceding and later weeks showing a gradual increase and decrease. In Washington and New York for 8 weeks the pay rolls were four-fifths or more of maximum, indicating a fairly steady period of employment on apples.

¹⁸ SECTION 526.90 TEMPORARY REGULATION OF ADMINISTRATOR RELATING TO EXEMPTIONS FOR INDUSTRIES OF A SEASONAL NATURE UNDER SECTION 7 (B) (3) OF THE FAIR LABOR STANDARDS ACT.

(a) Subject to objection by any person interested as hereinafter provided in paragraph (d), the Administrator (without prejudice to the possible subsequent inclusion of other industries as of a seasonal nature within the meaning of sec. 526.3) temporarily until January 31, 1939, finds the following industries to be of a seasonal nature:

Industries which both:

- (1) Engage in the handling, extracting, or processing of materials during a season or seasons occurring in regularly, annually recurring part or parts of the year; and cease production, apart from the work of maintenance, repair, and clerical employees, in the remainder of the year because of the fact that, owing to climate or other natural conditions, the materials handled, extracted, or processed in the form in which such materials are handled, extracted, or processed, are not available in the remainder of the year; and which
 - (2) Produce 50 percent or more of their annual output in a period or periods amounting in the aggregate to not more than 14 workweeks.
- (b) Such industries may, until January 31, 1939, for a period or periods of not more than 14 workweeks in the aggregate, employ employees 12 hours in any workday and 56 hours in any workweek without payment of time and one-half; provided, however, that such employees receive compensation for employment in excess of 12 hours in any workday, or for employment in excess of 56 hours in any workweek, as the case may be, at a rate not less than one and one-half times the regular rate at which they are employed. Industries seeking exemption beyond January 31, 1939, must make application pursuant to Section 526.4.

Since this report went to press, this amendment was revised to read "receives for packing or storing 50 percent or more of the annual volume in a period or periods amounting in the aggregate to not more than 14 workweeks."

LOCATION OF PACKING PLANTS

The majority of the California dried-fruit plants were in cities of 50,000 and over; about a fifth were in rural communities. Five of the latter had a combined pack of less than 10 percent of the product of all reporting in the State; New York's apple-drying plants were almost all in rural communities, and those reported in Washington were equally divided between rural and city areas.

TABLE XL.—*Distribution of plants and of total pack in 1937 according to size of community, by State—DRIED FRUITS*

State	All plants reporting		Plants in areas with population of—						
			Under 2,500		2,500, under 5,000		5,000, under 10,000		
	Number of plants	Amount of pack (pounds)	Number of plants	Amount of pack (pounds)	Number of plants	Amount of pack (pounds)	Number of plants	Amount of pack (pounds)	
Total:	Number	1 37	723, 005, 697	11	63, 904, 169	2	20, 452, 541	5	100, 945, 252
	Percent	100. 0	100. 0	29. 7	8. 8	5. 4	2. 8	13. 5	14. 0
California:	Number	29	710, 647, 197	5	55, 225, 669	2	20, 452, 541	5	100, 945, 252
	Percent	100. 0	100. 0	17. 2	7. 8	6. 9	2. 9	17. 2	14. 2
New York:	Number	4	1, 070, 000	4	1, 070, 000				
	Percent		100. 0		100. 0				
Washington:	Number	4	11, 288, 500	2	7, 608, 500				
	Percent		100. 0		67. 4				

State	Plants in areas with population of—						
	10,000, under 50,000		50,000, under 100,000		100,000 and over		
	Number of plants	Amount of pack (pounds)	Number of plants	Amount of pack (pounds)	Number of plants	Amount of pack (pounds)	
Total:	Number	2	3, 680, 000	14	429, 590, 803	3	104, 432, 932
	Percent	5. 4	0. 5	37. 8	59. 4	8. 1	14. 4
California:	Number			14	429, 590, 803	3	104, 432, 932
	Percent			48. 3	60. 5	10. 3	14. 7
Washington:	Number	2	3, 680, 000				
	Percent		32. 6				

¹ Excludes 4 plants (2 in California and 2 in New York) that reported location but not complete pack figures for 1937.

While no effort was made to check the statements of rural apple driers as to distance from which apples were brought, the plants were situated in the heart of apple sections. Some stated that apples brought from more than 10 miles were not accepted.

In 1939 Season.

A comparison of the hours worked by all employees in 1938 and in 1939 shows the influence of the Fair Labor Standards Act. In 1939 only 3 percent of California dried-fruit-packing employees worked over 56 hours, as compared with 12 percent in 1938. As some plants may have been subject to the 44-hour provisions of the act, it is of interest to find that the proportion of all workers employed over 44 hours dropped from 64 percent in 1938 to 11 percent in 1939.

In Washington evaporating plants, 8 percent in 1939 as compared with 15 percent in 1938 worked over 56 hours. New York firms reduced the proportion working over 56 hours from 20 percent to 11 percent.

TABLE XLII.—Hours worked by all employees, 1938 and 1939 seasons, by State—*DRIED FRUITS (identical plants in most cases)*

Hours worked in pay-roll week recorded	Number and percent ¹ of employees											
	California				New York				Washington			
	1938		1939		1938		1939		1938		1939	
	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent
Total.....	5,294	100.0	6,242	100.0	130	100.0	210	100.0	662	100.0	694	100.0
Under 40.....	1,226	23.2	1,663	26.6	8	-----	24	11.4	108	16.3	177	25.5
40.....	218	-----	359	-----	15	11.5	35	16.7	3	-----	5	-----
Over 40, under 42.....	132	-----	187	-----	-----	-----	-----	-----	16	-----	10	-----
42.....	17	-----	201	-----	-----	-----	1	-----	-----	-----	5	-----
Over 42, under 44.....	185	-----	306	-----	24	18.5	7	-----	70	10.6	27	-----
44.....	112	-----	2,799	44.8	10	-----	54	25.7	2	-----	18	-----
Over 44, under 48.....	703	13.3	224	-----	42	32.3	40	19.0	107	16.2	101	14.6
48.....	1,544	29.2	97	-----	-----	-----	1	-----	14	-----	7	-----
Over 48, under 56.....	513	9.7	178	-----	4	-----	25	11.9	235	35.5	232	33.4
56.....	30	-----	27	-----	1	-----	-----	-----	7	-----	55	-----
Over 56, under 60.....	138	-----	38	-----	1	-----	-----	-----	43	-----	10	-----
60, under 80.....	397	-----	118	-----	25	19.2	22	10.5	55	-----	47	-----
80 and over.....	79	-----	45	-----	-----	-----	-----	-----	2	-----	-----	-----

¹ Computed for chief groups only.

EARNINGS

Season of 1938.

Thirty-six plants, employing 6,085 wage earners, reported hourly earnings for the fall of 1938. The average was 50 cents for men and 39.8 cents for women. While relatively few men received as little as 35 cents, nearly four-fifths (78.3 percent) were paid 50 cents or more.

In California dried-fruit packing, men averaged 51.5 cents, with nearly a two-fifths concentration at 50 cents. The average earnings of California women were 41.7 cents, with a concentration of about 10 percent at 33½ cents, another at 40 cents, and more than a third receiving 42 cents an hour.

In Washington the average earnings of men were 35.9 cents, and of women 31.1 cents. The concentration points of men's earnings were at 32½ cents and 35 cents, of women's earnings at 27½ and 32½ cents.

In New York apple evaporating, men averaged 33.7 cents an hour and women 25.1 cents.

As for weekly earnings, the average for men in the week recorded was \$25 in California, \$18.95 in New York, and \$18.35 in Washington. The average for women in the same week was \$16.65 in California, \$10.65 in New York, and \$14 in Washington.

TABLE XLIII.—*Distribution of total, men, and women employees according to hourly earnings, 1938 season, and figures for women by State—DRIED FRUITS*

Hourly earnings (cents)	Number reported			Number of women with hourly earnings as specified in—		
	All employees	Men	Women	California	New York	Washington
Total	6,085	3,005	3,080	2,568	92	420
Average earnings (cents)	44.7	50.0	39.8	41.7	25.1	31.1
Under 15	5		5			5
15, under 17	2		2			2
17, under 18	1		1			1
18, under 19	2		2			2
19, under 20	2		2			2
20	3		3			3
21, under 22	3		3			3
22, under 23	9		9			9
23, under 24	5		5			5
24, under 25	9		9			9
25	22		22	9		13
26, under 27	125	6	119	16	91	12
27, under 28	14	1	13	2		11
28, under 29	74	6	68	2		66
29, under 30	20	3	17	1		16
30	13	1	12			12
31, under 32	71	13	58	26	1	31
32, under 33	15	2	13	2		11
33, under 34	174	96	78	3		75
34, under 35	307	1	306	300		6
35	43	5	38	15		23
36, under 37	186	72	114	89		25
37, under 38	57	1	56	41		15
38, under 39	126	55	71	58		13
39, under 40	34	1	33	26		7
40	36	1	35	23		12
41, under 42	683	231	452	444		8
42, under 43	69	1	68	61		7
43, under 44	961	10	951	946		5
44, under 45	50	6	44	40		4
45	87	9	78	77		1
46, under 47	164	105	59	59		
47, under 48	33	4	29	28		1
48, under 49	41	9	32	30		2
49, under 50	34	9	25	25		
50	23	4	19	17		2
51, under 52	1,078	1,053	25	24		1
52, under 53	46	26	20	20		
53 and over	774	750	24	24		
	684	524	160	160		

Season of 1939.

Almost all employees in California dried-fruit packing earned over 30 cents an hour in 1939; about three-fifths received 50 cents and more. These earnings were due to the State minimum-wage regulation and union agreements rather than the minimum wage in the Fair Labor Standards Act.

In Washington rural evaporated-apple plants paid 10 percent of their employees less than 25 cents an hour in 1939, and paid a third less than 30 cents. Plants in towns of 2,500 and over paid more than three-fifths of their employees 30 to 35 cents an hour. No one in these town packing houses received under 30 cents an hour. With

the exception of one small plant, all New York evaporating plants were in rural communities; an eighth of the workers in these rural canneries received under 25 cents an hour and over seven-tenths earned exactly 25 cents.

TABLE XLIV.—*Distribution of all employees according to hourly earnings, 1939 season, by State and population group—DRIED FRUITS*

Hourly earnings (cents)	Employees with hourly earnings as specified in—					
	California		New York		Washington	
	Towns of under 2,500	Towns of 2,500 and over	Towns of under 2,500	Towns of 2,500 and over	Towns of under 2,500	Towns of 2,500 and over
Employees with hours reported	413	5,829	197	1 13	552	142
Average earnings (cents)	44.1	48.6	26.2		32.8	36.5
	<i>Percent of employees</i>					
Under 20					3.3	
20					.7	
21, under 25			12.7		6.2	
25		0.1	71.6		1.1	
25, under 30	0.2	.1			22.3	
30	6.5	.3	8.6		7.1	0.7
31, under 35	21.1	3.6			23.6	35.9
35	4.1	1.1	2.5		12.5	26.8
36, under 40		2.0			10.0	14.1
40	21.1	9.7	2.5		4.3	5.6
41, under 45	1.2	16.6			4.2	11.3
45	1.2	4.3			1.1	3.5
46, under 50	1.2	2.0			.4	.7
50 and over	43.3	60.2	2.0		3.4	1.4

¹ Average and distribution not computed; base too small.

Annual Earnings and Number of Weeks Worked.

In spite of the longer operating period of dried-fruit plants, only one-sixth of the 10,293 workers who were given any employment in 1937 in the 32 plants that had complete records had worked as many as 39 weeks in the year. Less than one-fourth (24 percent) had a half-year or more of work. As many as 43 percent worked under 8 weeks in the year.

In California any employer of 4 or more workers in each of 20 weeks comes under the State unemployment compensation law. All but 1 of the 27 firms reporting did employ 4 or more persons in 20 weeks. In Washington the requirement for employer coverage is employment of 8 or more persons for each of 20 weeks; only 1 of the 3 plants reporting met this requirement. In New York an employer must give work to 4 or more persons on each of 15 days; all evaporated-apple plants surveyed were covered under the New York unemployment compensation act.

As to the individual earnings in the year: In California, 52 weeks of work brought earnings averaging \$1,078.40; 39 weeks, \$552.85; 26 weeks, \$400.45. Only 31 percent of California packing-house employees with year's earnings reported earned \$300 or more. Members of this group alone were eligible for State unemployment compensation. In Washington 38 percent earned \$200 or over and therefore were eligible for compensation in that State. Very few earned \$500

TABLE XLV.—Average year's earnings of employees in 1937, by weeks worked and by State—DRIED FRUITS

State	Total reported	Weeks worked in year													
		Under 4 weeks	4, under 8 weeks	8, under 12 weeks	12, under 16 weeks	16, under 20 weeks	20 weeks	21, under 26 weeks	26 weeks	27, under 33 weeks	33, under 39 weeks	39 weeks	40, under 46 weeks	46, under 52 weeks	52 weeks
Total:															
Number of employees.....	10,293	2,188	2,225	1,356	955	512	107	455	82	382	311	51	367	782	520
Percent distribution.....	100.0	21.3	21.6	13.2	9.3	5.0	1.0	4.4	0.8	3.7	3.0	0.5	3.6	7.6	5.1
Average year's earnings.....	\$272.45	\$20.40	\$81.60	\$151.60	\$210.05	\$278.05	\$310.50	\$350.85	\$375.20	\$424.85	\$530.35	\$552.85	\$612.35	\$849.40	\$1,079.50
California:															
Number of employees.....	9,464	2,061	2,105	1,214	704	465	102	399	57	335	308	51	366	781	516
Percent distribution.....	100.0	21.8	22.2	12.8	7.4	4.9	1.1	4.2	.6	3.5	3.3	0.5	3.9	8.3	5.5
Average year's earnings.....	\$282.65	\$20.95	\$83.25	\$156.65	\$220.00	\$279.90	\$314.60	\$361.80	\$400.45	\$437.95	\$530.75	\$552.85	\$612.15	\$849.30	\$1,078.40
New York:															
Number of employees.....	193	25	40	59	64	1	-----	-----	-----	3	-----	-----	-----	-----	1
Percent distribution.....	100.0	13.0	20.7	30.6	33.2	0.5	-----	-----	-----	1.6	-----	-----	-----	-----	0.5
Average year's earnings.....	\$124.15	\$23.90	\$65.95	\$128.50	\$154.75	(¹)	-----	-----	-----	(¹)	-----	-----	-----	-----	(¹)
Washington:															
Number of employees.....	636	102	80	83	187	46	5	56	25	44	3	-----	1	1	3
Percent distribution.....	100.0	16.0	12.6	13.1	29.4	7.2	0.8	8.8	3.9	6.9	0.5	-----	0.2	0.2	0.5
Average year's earnings.....	\$165.10	\$8.00	\$46.05	\$93.65	\$191.60	\$257.40	(¹)	\$273.00	\$317.70	\$318.45	(¹)	-----	(¹)	(¹)	(¹)

¹ Not computed; base too small.

DRIED FRUIT

or more in Washington apple-evaporating plants. New York evaporating plants employed their largest groups 8 to 12 or 12 to 16 weeks, in which periods they averaged \$128.50 and \$154.75, respectively. In New York employee eligibility is based on the multiple of the weekly benefit amount earned in the calendar year; this cannot be ascertained from assembled data.

TABLE XLVI.—Year's earnings of individual employees in 1937, by State—
DRIED FRUITS

Year's earnings	Number and percent of employees with earnings as specified							
	Total		California		New York		Washington	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Employees reported.....	10,416	100.0	9,587	100.0	193	100.0	636	100.0
Average earnings.....	\$270.80		\$280.80		\$124.15		\$165.10	
Under \$5.....	465	4.5	408	4.3	3	1.6	54	8.5
\$5, under \$10.....	369	3.5	341	3.6	1	.5	27	4.2
\$10, under \$25.....	769	7.4	715	7.5	7	3.6	47	7.4
\$25, under \$50.....	982	9.4	901	9.4	26	13.5	55	8.6
\$50, under \$75.....	836	8.0	792	8.3	15	7.8	29	4.6
\$75, under \$100.....	764	7.3	707	7.4	25	13.0	32	5.0
\$100, under \$200.....	2,073	19.9	1,828	19.1	95	49.2	150	23.6
\$200, under \$300.....	1,142	11.0	966	10.1	12	6.2	164	25.8
\$300, under \$400.....	667	6.4	613	6.4	3	1.6	51	8.0
\$400, under \$500.....	488	4.7	469	4.9	3	1.6	16	2.5
\$500, under \$600.....	340	3.3	335	3.5	2	1.0	3	.5
\$600, under \$700.....	276	2.6	273	2.8			3	.5
\$700, under \$800.....	286	2.7	286	3.0				
\$800, under \$1,000.....	433	4.2	431	4.5			2	.3
\$1,000, and \$1,500.....	464	4.5	460	4.8	1	.5	3	.5
\$1,500 and over.....	62	.6	62	.6				

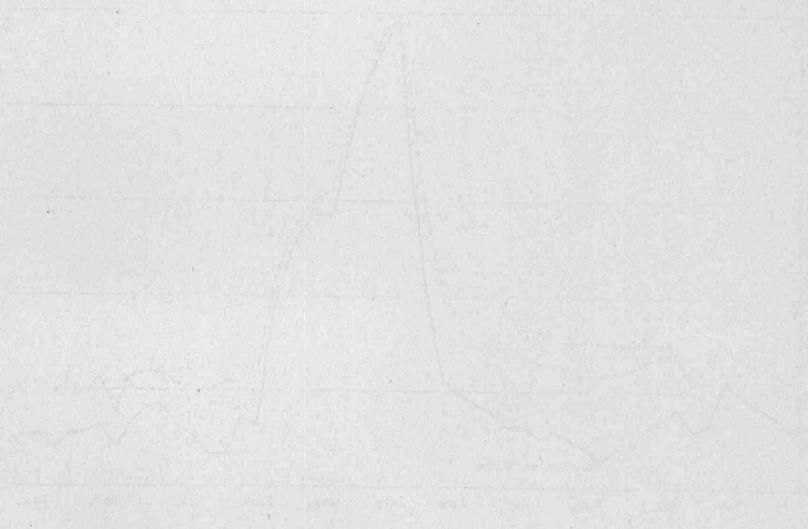
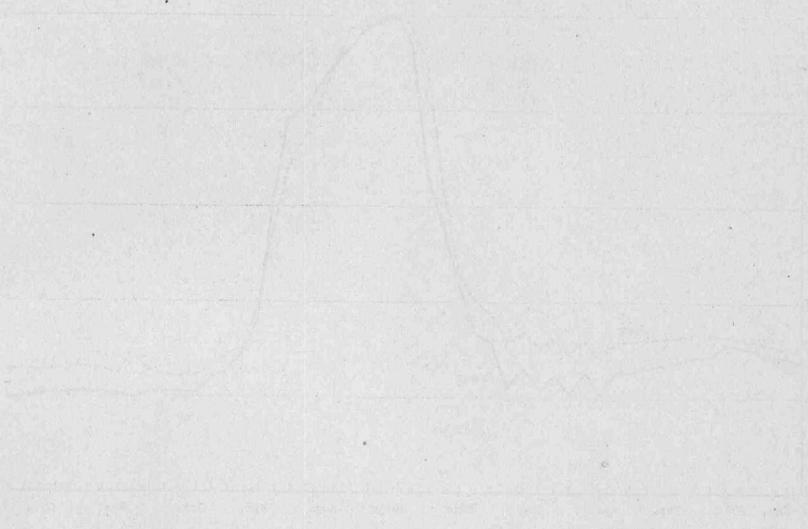


Chart III.—Employment trends for men and women in pineapple canneries, 1938

(Maximum week = 100)

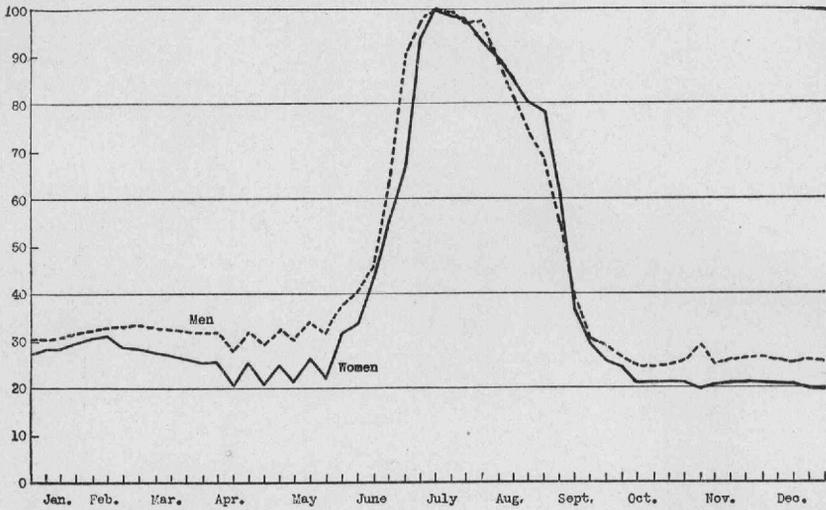
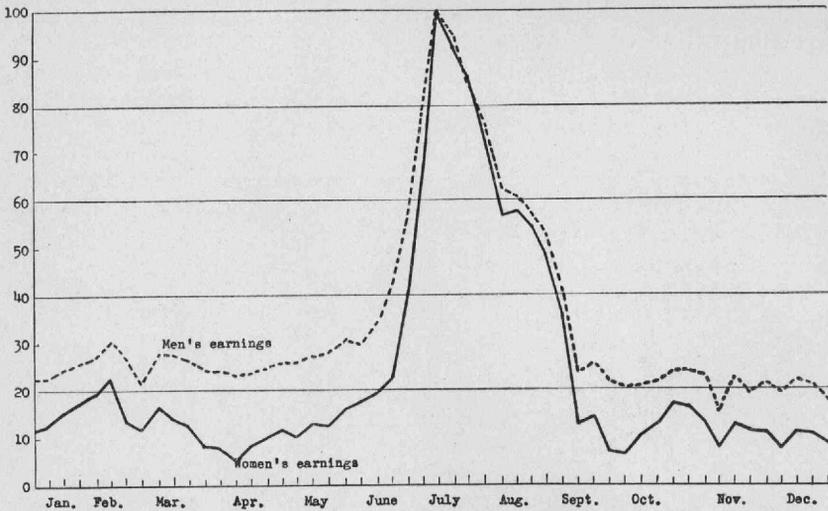


Chart IV.—Pay-roll trends for men and women in pineapple canneries, 1938

(Maximum week = 100)



NOTE.—Charts III and IV, prepared for the report on Hawaiian woman-employing industries and not redrawn for the present canning study, have the familiar arithmetic scale and for that reason the curves cannot be compared with Charts II-A to II-G. (See note 7 on p. 27.)

HAWAIIAN PINEAPPLE-CANNING INDUSTRY

While the survey of Hawaiian canneries was carried on as part of a general survey of woman-employing industries in Hawaii in 1939, the data obtained were the same as those called for in the canning survey of 1938 in Continental United States. Because the industry is subject to the same Federal labor legislation as other seasonal industries and is a competitor of other canned-fruit industries, the material is incorporated as a part of the Nation-wide canning study.

The pineapple industry of Hawaii ranks next to the sugar industry in the sales value of its products. The average pack in recent years has been 6 million cases. Three of the canneries in Honolulu (Oahu) pack about 80 percent of the output; the four other canneries, on Maui and Kauai, the remainder.

The survey covered two large Honolulu canneries and two smaller canneries on Maui. While the latter were in rural areas, some fruit was obtained beyond the 10-mile radius used to define "area of production" by the Administrator of the Fair Labor Standards Act.

Length of Canning Season.

The three canneries reporting days on which canning was done in 1938 operated 214 days, 122 days, and 69 days, respectively.

There is no period when some pines are not maturing, but for about 8 weeks in midsummer—the end of June to about the middle of August—the canneries are running at full speed, with two and three shifts a day and for much of the time 7 days a week.

Employment figures week by week for the year 1938 were available for two large canneries. In these two plants there were more than 6,000 persons employed in 12 weeks and more than 9,000 in 8 of these weeks. Taking the peak week, in which there were 11,613 employed, as 100 percent, an index of employment for the 52 weeks has been computed. In 37 of the 52 weeks the index of employment is 35 percent or less of the maximum. This is apparent from a glance at the plateau on either side of the peak of chart III.

Chart IV gives a picture of the trend of total earnings. It is significant to note that earnings rise more sharply and fall even more precipitously than employment. For only 1 week besides the peak were earnings as much as 90 percent of the maximum, for 1 week they were about 85 percent, for 2 weeks about 75 percent, and for 5 weeks from 50 to 60 percent of the maximum. Thus there were 42 weeks in which total earnings were less than 50 percent of the maximum. For 22 weeks the pay roll was less than 20 percent of the maximum, for 14 weeks it was 20 and under 25 percent, and for 6 weeks it was 25 to 40 percent.

Occupations.

On the plantations women help to prepare the slips, suckers, and crowns for planting, and during the harvesting some are engaged in cutting the crowns from the pines before the fruit is sent to the

cannery, but the employment of women in the fields is relatively unimportant. In the canneries, however, women are almost as numerous as men, and the preparation of the fruit and the packing into cans are primarily women's work.

The numbers of men and women employed in the four canneries from which records were obtained are shown here by the general occupational classes used for the tabulation of the data.

<i>Type of work</i>	<i>Total</i>	<i>Women</i>	<i>Men</i>
All types.....	12, 650	5, 975	6, 675
Cannery.....	8, 861	5, 318	3, 543
Warehouse.....	2, 404	451	1, 953
Supervisory.....	264	149	115
Maintenance.....	556	27	529
Outside.....	421	-----	421
Factory office.....	144	30	114

All occupations concerned with the handling, preparation, and processing of the fruit are included in cannery labor. Men usually are employed for the unloading of the fruit, the handling of empty cans, the operations connected with the ginaca machine, in the processing and cooking rooms, and as roustabouts in carrying, trucking, and generally helping to maintain a smooth and steady flow of work. The canning industry is highly mechanized and there is little heavy work. Most of the women's jobs are simple, and dexterity and speed rather than skill seem to be the prime requisites.

The cannery operations begin on the receiving platform, where the pineapples are dumped into bins and then fed to the ginaca machines. Pines are fed singly to these machines, which grip the fruit, force it against revolving knives that cut away the shell and eyes, hold it while a rapidly dashing plunger extracts the core, and then dispatch it to a conveyor as a symmetrical doughnut-like cylinder completely denuded of its field shape and color. Other mechanical devices strip and salvage all bits of fruit remaining in the shell for the crushed-pineapple juice and by-products divisions.

Endless belts carry the pineapple cylinders past rows of white-capped, aproned, and rubber-gloved women who inspect the fruit and cut out with sharp knives particles of shell or foreign matter that the ginaca did not reach. In another department the crushed and broken bits salvaged from the shell are similarly inspected along belts. Automatic machines cut the cylinders into slices and these move on to the packing or canning tables, where women select and pack the slices by hand into trays of "fancy," "standard," and other grades. The trimming and packing operations are the work of women, but from here on the processing is largely in the care of men.

The trays of cans pass under machines that automatically add the proper quota of syrup, through exhaust boxes that expel air bubbles to covering and seaming machines that seal them, and then through the steam-pressure cooking equipment. After cooling they are ready to go to the warehouse. Most of the processing is carried on by automatic machines, and the men who set up and serve these machines as mechanics are in the higher-wage groups.

Cans are stacked in the warehouse and stored until shipment. In many cases labels and boxes are manufactured in the warehouse. Labeling is a machine operation and women are employed to a considerable extent tending the machines and packing the cans into the shipping cases or boxes. Women make up about one-fifth of the

employees in the warehouse. Some of the warehouse jobs, such as printing, certain box-making operations, and care of the machines, are skilled, but much of the work is of an unskilled nature. The maintenance group includes the janitors, matrons, engineers, firemen, and general mechanics, responsible for the upkeep of the plant and its equipment. Only 27 women were reported in this group—too few for a separate job tabulation of wages; this was true also of the women who were factory office clerks. The factory clerical group includes such workers as pay-roll, shipping, and production clerks. The administrative and selling offices were not covered. Outside labor includes chiefly men working in the cannery yard, general employees on the receiving and loading platforms, truck drivers, and helpers.

A high standard of sanitation and good working conditions seemed to be generally accepted as a part of the pineapple-cannery morale. Service facilities in the way of toilets, locker rooms, rest rooms, and cafeterias are decidedly above the general industrial standards maintained by mainland plants.

Race.

The pineapple canneries recruit their labor supply chiefly from workers whose racial descent is other than Caucasian. Race was reported for all workers but about 2 percent. The largest group of women and of men employees—about two-fifths in each case—were Japanese. Chinese formed about one-fifth of the women and one-seventh of the men. Hawaiians were 7 percent of the men and 14 percent of the women. Caucasians were represented among women employees by slightly less than 10 percent; Filipinos and Koreans by less than 5 percent. Of these races, Caucasians comprised 13 percent and Filipinos 19 percent of the men workers.

Earnings by race, in unpublished figures, indicate that racial equality where earning opportunity is concerned is a practice as well as a policy. In the four groups where numbers were large enough to show a normal distribution—Caucasian, Hawaiian, Chinese, and Japanese—there is no significant variation. The earnings of the Caucasian women were a little lower than those of other races, but among the men a higher proportion of the lunas (foremen) were Caucasian, which tends to place this group at the top for men, and this is true also of the mechanics. Except for this occupational difference, the variations by race in the wage picture in the pineapple canneries are only minor.

Source of Seasonal Labor.

When cannery employment skyrockets in midsummer, the extra seasonal labor is not recruited to any extent from the usual industrial or agricultural sources. Managers reported that housewives, maids, and high-school and college girls make up most of the extra female supply. Maids flock from their regular jobs to the canneries, and during the canning season many openings for domestics go unfilled. Wives who do not seek employment outside the home at any other time report to the cannery year after year for a few weeks of work to help to swell the family budget.

For the extra men, the young Filipinos who work at odd jobs in the towns and have irregular employment on the sugar and pineapple plantations serve as one important source. Most of the other males

are young men without regular jobs or students who are a part of the surplus labor supply seeking employment wherever it may be forthcoming.

Hours Worked in Pay-Roll Week.

The hours worked and the week's earnings as tabulated for a 1-week period are for one of the high-peak weeks of the season and are not representative of any season but this. The hourly rates, however, are typical.

The summary table that follows shows for three canneries the hours worked by all men and women, by cannery workers, and by warehouse workers in one peak week.

TABLE XLVII.—*Distribution of women and men according to hours worked in one week in 1939—PINEAPPLE CANNING*

Hours worked in pay-roll week recorded	Women			Men		
	All employees	Cannery labor	Warehouse labor	All employees	Cannery labor	Warehouse labor
Employees with hours reported:						
Number	5,289	4,742	343	6,256	3,248	1,893
Percent	100.0	100.0	100.0	100.0	100.0	100.0
Under 20	3.6	3.7	3.8	2.6	2.3	3.9
20, under 30	4.7	4.9	4.4	4.4	3.5	7.4
30, under 40	18.6	18.0	36.2	14.8	12.6	25.2
40, under 42	7.3	4.4	47.8	13.3	8.1	27.1
42, under 44	40.6	44.8	1.5	11.4	12.4	12.8
44, under 46	5.2	3.8	4.1	11.5	11.1	11.1
46, under 48	17.3	18.3	2.3	12.3	16.6	5.5
48, under 50	1.5	1.5	-----	10.1	13.7	1.0
50 and over	1.3	.6	-----	19.6	19.8	6.1

In all the canneries the scheduled hour or work plan was an 8-hour day for 5 days with 4 hours on Saturday, making a 44-hour week. Time in excess of these limits usually was paid for at time and a half and double time. In the week for which pay rolls were taken, well over one-half (57 percent) of the men and about one-fourth (24 percent) of the women in the cannery departments worked more than scheduled hours; in the warehouse about 20 percent of the men and 3 percent of the women worked more than regular hours. It is significant that even in a peak period large proportions worked less than 44 hours. The percent of women working 48 hours and more in the canneries was very small.

Hourly Earnings.

In the Honolulu canneries the minimum hourly rate was 30 cents for women and 37.5 cents for men, while in the Maui canneries it was 26 cents for women and 32.5 cents for men. Hourly rates have increased materially since the Women's Bureau survey of 1927, which showed 44 percent of the women to be receiving 15 cents an hour. In 1939 as many as 85 percent of the women received at least 30 cents an hour.

For the women as a whole, the median—that is, the midpoint in a distribution of earnings—is 31.6 cents, following the dominating group of cannery labor. There is a marked concentration of earnings at 30

and under 35 cents, a reflection of the 30-cent minimum rate for women that was the standard in Oahu canneries. Except for women whose jobs included some type of supervisory activity, the percent with earnings of as much as 35 cents is decidedly small. An unpublished tabulation of hourly earnings on a racial basis shows only a slight deviation from the pattern for the group as a whole, as the median for each race falls in the 31-and-under-32-cent interval. Table XLVIII gives the hourly earnings, in 5-cent intervals, of the men and the women in four canneries, by occupational group.

For the men the minimum hourly rate in the two largest canneries in Honolulu, which had a preponderance in numbers, was 37.5 cents; on Maui the minimum was 32.5 cents. For all men the median earnings were 40.2 cents. The largest numbers of men—about 40 percent—had hourly earnings of 37 and under 40 cents, with the proportion over 45 percent if only the men in the cannery and warehouse (over four-fifths of all men employed) are considered. Men in the warehouse who are on piece work, usually the stacking or breaking of can piles, had a median of 50.3 cents. In the cannery occupations only about 11 percent of the men had earnings of as much as 45 cents an hour.

TABLE XLVIII.—Hourly earnings of workers, by sex and occupational group—
PINEAPPLE CANNING

WOMEN								
Hourly earnings (cents)	All women	Cannery labor	Warehouse labor	Supervisory				
Number of women reported	5,975	5,318	451	149				
Average earnings (cents)	31.6	31.6	30.4	36.9				
	<i>Percent of women</i>							
Under 30	14.7	14.2	25.9	0.7				
30, under 35	79.0	82.6	65.9	16.8				
35, under 40	3.8	1.3	6.4	63.8				
40, under 45	1.3	.9	1.8	4.0				
45, under 50	1.0	.8		8.7				
50 and over	.3	.1		6.0				
MEN								
Hourly earnings (cents)	All men	Cannery labor	Warehouse labor			Outside	Supervisory	Office (factory)
			Time work	Piece work (or both time and piece)	Maintenance			
Number of men reported	6,699	3,542	1,663	290	525	420	110	109
Average earnings (cents)	40.2	39.7	38.4	50.3	47.5	48.0	53.8	46.3
	<i>Percent of men</i>							
Under 30	0.1	0.1	0.2		1.3	0.5		
30, under 35	4.9	7.3	3.5		18.9	.5		1.8
35, under 40	43.4	49.0	56.8	12.4	15.0	15.0	1.8	4.6
40, under 45	28.2	32.5	23.0	22.1	20.6	28.1	9.1	40.4
45, under 50	9.5	6.2	12.7	14.1	17.7	9.0	16.4	11.0
50, under 55	6.1	3.1	2.5	16.2	10.5	23.6	30.0	22.0
55, under 60	2.9	1.0	.7	13.8	7.8	9.0	11.8	12.8
60, under 65	1.4	.4	.2	5.2	5.7	2.6	9.1	4.6
65 and over	3.5	.5	.3	16.2	17.5	11.7	21.8	2.8

¹ Of the 57 women not shown by department, 30 were factory office workers.

Week's Earnings.

Week's earnings in a peak week indicate what the industry offers to its employees in the busiest season of the year. For women in the Hawaiian pineapple canneries the amounts received in one of the heaviest production weeks of the year tended to concentrate at \$13 and under \$14, with about 43 percent of the women in this interval. Of all the women in the pay-roll week taken, 70 percent had received \$10 and under \$15. Only in supervisory jobs were as many as one woman in every five paid \$15 or more for the week; in these jobs two-thirds of the women earned \$15 and under \$20 and about one-sixth earned \$20 or more. The median earnings of women in the cannery were \$13.40 and in the warehouse \$12.20. Hours were shorter in the warehouse, which accounts partly for the lower median.

The busy season of which the week's earnings are representative showed a concentration of men's wages in the intervals from \$15 to \$20, more men being in the \$15 and \$16 groups than any other. Two-thirds of the men had week's earnings of less than \$20. Earnings of those in the supervisory, maintenance, outside, and office departments were decidedly higher than those in the cannery and warehouse. A distribution by race showed no significant variation from the general earnings figures.

Year's Earnings.

For most of the workers the period over which earnings in the pineapple canneries are spread is short, so it is to be expected that the amounts would be relatively low. The summary table of total earnings shows that almost one-half of the employees had worked for the firm in less than 12 weeks. Only about one-sixth of the men and one-tenth of the women had earnings spread over the entire year. The average earnings of men and of women by number of weeks over which the work was spread are shown in table XLIX.

Since the employees were concentrated most heavily at 8 and under 12 weeks, followed by 52 weeks, earnings are shown in greater detail for these groups in the same table.

The 52-week workers show a much greater discrepancy between the sexes in the amounts earned than do the groups with less employment, women's median earnings being only 42 percent of those of men.

In the 8-to-12-week group women who earned as much as \$125 were few in number, comprising less than 2 percent of all women in the group. Men had a much wider range of earnings and larger proportions were in the higher wage intervals.

TABLE XLIX.—Number of weeks worked and amount earned in year, by men and women—PINEAPPLE CANNING

WEEKS WORKED IN YEAR AND AVERAGE EARNINGS

Number of weeks	Women			Men		
	Number reported	Percent	Average earnings	Number reported	Percent	Average earnings
Total	4, 142	100.0	\$115.00	5, 171	100.0	\$169.00
Under 4	191	4.6	15.00	316	6.1	16.30
4, under 8	536	12.9	50.70	721	13.9	67.40
8, under 12	1, 217	29.4	92.65	1, 422	27.5	128.00
12, under 16	580	14.0	115.00	610	11.8	177.00
16, under 20	142	3.4	137.00	179	3.5	248.00
20	18	.4	(1)	19	.4	(1)
21, under 26	105	2.5	174.00	127	2.5	280.00
26	23	.6	(1)	33	.6	(1)
27, under 33	329	7.9	209.00	254	4.9	354.00
33, under 39	142	3.4	254.00	217	4.2	440.00
39	20	.5	(1)	37	.7	486.00
40, under 46	75	1.8	294.00	98	1.9	562.00
46, under 52	333	8.1	358.00	245	4.7	586.00
52	431	10.4	370.00	893	17.3	891.00

EARNINGS FOR WORK IN 8 AND UNDER 12 WEEKS

Total earnings	Women		Men	
	Number	Percent	Number	Percent
Employees reported	1, 217	100.0	1, 422	100.0
Average earnings	\$92.65		\$128	
Under \$25			1	0.1
\$25, under \$50	24	2.0	5	.4
\$50, under \$75	181	14.9	60	4.2
\$75, under \$100	572	47.0	243	17.1
\$100, under \$125	419	34.4	353	24.8
\$125, under \$150	5	.4	434	30.5
\$150, under \$175	5	.4	208	14.6
\$175, under \$200	4	.3	54	3.8
\$200, under \$300	6	.5	55	3.9
\$300, under \$400	1	.1	8	.6
\$400 and over			1	.1

EARNINGS FOR WORK IN 52 WEEKS

Total earnings	Women		Men	
	Number	Percent	Number	Percent
Employees reported	431	100.0	893	100.0
Average earnings	\$370		\$891	
Under \$300	1	0.2	2	0.2
\$300, under \$400	306	71.0	5	.6
\$400, under \$500	57	13.2	35	3.9
\$500, under \$600	19	4.4	117	13.1
\$600, under \$700	25	5.8	96	10.8
\$700, under \$800	12	2.8	93	10.4
\$800, under \$900	4	.9	108	12.1
\$900, under \$1,000	2	.5	124	13.9
\$1,000, under \$1,500	4	.9	234	26.2
\$1,500, under \$2,000	1	.2	45	5.0
\$2,000, under \$2,500			20	3.2
\$2,500 and over			5	.6

1 Not computed; base too small.

U. S. DEPARTMENT OF LABOR
 Washington
 WOMEN'S BUREAU

Date _____
 Agent _____

BRANCH OR INDEPENDENT CANNERY SCHEDULE

1. Firm _____ 2. Factory address _____
 Street City
 3. Head of firm _____ 4. Person interviewed and title _____
 5. Number of lines of production _____ Line capacity _____
 6. Pack year ending December 31, 1937.*

a Products	b Total output	c Period packed		d Days packed	e Children employed	
		From—	To—		Boys under 16	Girls under 18

7. Did this factory fill Government contract since Jan. 1, 1936? _____
 Product _____
8. Source of seasonal labor: _____ Approximate percent of total
- (a) Persons not usually employed in industry (housewives, students, teachers, etc.) _____
 - (b) Agricultural workers living in country _____
 - (c) Migratory workers _____
 What do these workers do when not canning? _____
 - (d) Industrial labor supply _____
 What do these workers do when not canning? _____
 - (e) Other sources—Name _____
9. Are any occupations organized? _____
10. Does independent canner operate another business so that canning is but an incidental interest? _____ If so, what business? _____

*If books are closed on fiscal basis, take year ending in 1938 and note month.

III.

Product packed	1938				1939			
	Total output ¹	Period packed		Days packed	Total output	Period packed		Days packed
		From—	To—			From—	To—	
a.								
b.								
c.								
d.								
e.								
f.								
g.								
h.								
i.								
j.								
Total								

¹ Indicate whether standard or actual cases.

Total number of weeks in 1938 that plant gave employment to 1 or more persons exclusive of supervisory, clerical, maintenance, and custodial staff.....

IV. (a) Describe changes made since 1938 in equipment or product.....

.....

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.....

(b) How have changes affected numbers employed or productivity per employee?

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.....

.....

V. Distance of cannery from fields or orchards—1939.

1. Longest distance to cannery -----

Specify crop							
(a) From fields owned or controlled by cannery							
(b) From other sources							

2. Usual radius within which most of each is grown.

(a) From fields owned or controlled by cannery							
(b) From other sources							

3. What percent of raw materials comes from fields owned or controlled by company? ----- Is this a usual distribution? -----

4. Has there been any change since 1938 in source of various products? -----
If so, describe -----

VI. Source of labor supply.

	Percent of men	Percent of women	Remarks
1. Migrants			1. -----
2. Farmers and members of farm families			2. -----
3. Other agricultural wage earners			3. -----
4. Industrial workers at other seasons			4. -----
5. Housewives other than farms			5. -----
6. Local casuals (other than agricultural)			6. -----
7. Students and young unemployed other than from farms			7. -----

VII.

	1937	1938	1939
1. Total cost			
2. Total labor cost			
3. Labor cost per case (if available)			

Specify items wherein firm's cost accounting differs from items listed in instructions (a) (Total cost) -----

(b) (Total labor cost) -----

4. Give labor cost per case by product where available -----

Agent ----- Date -----

