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UNITED STATES DEPARTMENT OF LABOR

Frances Perkins, *Secretary*

BUREAU OF LABOR STATISTICS

Isador Lubin, *Commissioner (on leave)*

A. F. Hinrichs, *Acting Commissioner*

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# Hours and Earnings in the Fertilizer Industry, January 1943

Prepared in the

DIVISION OF WAGE ANALYSIS

ROBERT J. MYERS, *Chief*



*Bulletin No. 751*

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LETTER OF TRANSMITTAL

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UNITED STATES DEPARTMENT OF LABOR  
BUREAU OF LABOR STATISTICS,  
*Washington, D. C., August 19, 1943.*

THE SECRETARY OF LABOR:

I have the honor to transmit herewith a report on hours and earnings in the fertilizer industry in January 1943. This report was prepared by Edward B. Morris, in the Bureau's Division of Wage Analysis, Robert J. Myers, Chief.

A. F. HINRICHS, *Acting Commissioner.*

HON. FRANCES PERKINS,  
*Secretary of Labor.*

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*Bulletin No. 751 of the  
United States Bureau of Labor Statistics*

[Reprinted from the MONTHLY LABOR REVIEW, August 1943]

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**Hours and Earnings in the Fertilizer Industry,  
January 1943<sup>1</sup>**

*Summary*

WAGE earners in the fertilizer industry earned, on an average, 55.0 cents an hour, exclusive of premium pay for overtime, in January 1943. There was a marked regional difference in wage levels, average hourly earnings being 76.5 cents in the North and 45.2 cents in the South. Negroes, who make up a large part of the working force in the industry and are usually found in jobs with lower skill requirements, averaged 45.9 cents an hour as compared with 72.5 cents for white employees. Office workers averaged 70.7 cents an hour.

That the wage level in the fertilizer industry is relatively low is indicated by the fact that 2.0 percent of the wage earners in January 1943 were paid less than 30 cents an hour, 21 percent earned from 30 to 40 cents, inclusive, while approximately one-half of the employees received less than 47.5 cents an hour.

*Characteristics of the Industry*

The fertilizer industry is made up of "establishments primarily engaged in the manufacture of commercial fertilizer and super-phosphates or mixing of fertilizer materials."<sup>2</sup> Among the establishments excluded from the industry are those engaged in the merchandising of fertilizer materials in the natural state or of tankage from meat-packing establishments used without further processing, and in the mining and grinding of phosphate rock for sale to fertilizer plants.

The industry in 1939 consisted of 764 establishments, according to the Census of Manufactures, but the average number of wage earners employed during the year was only 18,744. The plants were scattered among 39 States, with a marked concentration, however, in the Southern area. Fifty-four percent of the total number of wage earners were employed in plants situated in Virginia, North Carolina, South Carolina, Georgia, Alabama, and Florida.<sup>2</sup>

The majority of fertilizer plants have few employees. Of the 764 plants in the industry in 1939, 226 had fewer than 5 wage earners; 274 had from 6 to 20 wage earners; 173 had from 21 to 50 wage earners; and 91 had 51 or more wage earners. Although most of the plants are relatively small, concentration of ownership is an important factor in the industry. A few companies, each operating a number of plants, account for a very appreciable segment of total output and play an important role in the determination of industrial policy. A larger group of companies, operating two plants or more, may be considered intermediate in size.

<sup>1</sup> Prepared in the Bureau's Division of Wage Analysis by Edward B. Morris.

<sup>2</sup> Census of Manufactures, 1939.

An integrated fertilizer plant consists of three manufacturing units— an acid department, a superphosphate department, and a mixing department. Sulphuric acid is manufactured in the acid department for use of the superphosphate department. In the superphosphate, wet-mixing, or acidulation department, phosphate rock is ground and mixed with the sulphuric acid. The mixture is dumped into a concrete "den" and left there until the chemical reaction is completed. In the dry-mixing department, the superphosphate is combined with other purchased fertilizer materials in accordance with the desired formulas. The various ingredients are mixed thoroughly to secure uniformity and the resulting product is bagged and then tagged for shipment.

The principal kinds of fertilizer plants may be described in terms of these departments. Acid-making plants have all three departments. Superphosphate plants, which purchase their acid requirements, ordinarily have superphosphate and dry-mixing departments, although superphosphate production is included in the fertilizer industry whether or not the plant produces mixed fertilizers. Dry-mixing plants purchase their superphosphate and conduct only the dry-mixing operations. Tabulated with this latter group are a few plants that process ammoniates (nitrogen-bearing materials) in addition to mixing fertilizers.

The fertilizer industry exhibits wide seasonal variations in production and employment. Farmers generally buy their fertilizers only a short time before applying them to the soil. The more common formulas are usually mixed in advance, but much of the mixing is done to the order of the user. Consequently, there is a marked peak of activity in the spring and a somewhat lesser peak in the fall. The spring peak starts early in the year in the deep South and moves northward thereafter. While the spring peak may be delayed or advanced by the weather, it occurs usually during March or April. The usual fall peak is in September or October. This seasonal variation is clearly indicated by the Bureau's index of employment in the fertilizer industry for the years 1939 to 1943 (table 1). During these years the index numbers for March and April have been substantially higher, except in 1942, than those for either February or May, and, except in one year, the index numbers for September and October have been somewhat higher than those for either August or November.

**TABLE 1.—Indexes of Employment in the Fertilizer Industry, by Months, 1939–43**

[1939=100]

Month	1939	1940	1941	1942	1943
January.....	96.8	98.9	97.8	113.2	114.5
February.....	100.9	102.9	106.5	144.6	138.2
March.....	137.6	143.2	133.0	156.7	158.6
April.....	166.6	164.6	168.7	147.1	<sup>1</sup> 154.8
May.....	116.7	121.3	119.7	118.8	
June.....	74.4	83.6	86.6	96.2	
July.....	69.3	75.4	85.1	85.5	
August.....	69.8	76.4	84.6	91.8	
September.....	92.7	90.2	103.9	103.0	
October.....	92.7	91.2	97.8	102.6	
November.....	86.1	86.6	95.3	103.9	
December.....	96.3	89.7	100.4	109.4	

<sup>1</sup> Preliminary.

Seasonal fluctuation in employment has been accompanied by an interesting variation in the level of average hourly earnings. Hourly earnings for the spring peak tend to fall below earnings for earlier and later months. For example, in each of the years shown, the level of hourly earnings for March was from 1.7 to 4.4 cents below the level for January of the same year, and from 4.6 to 6.0 cents below the average hourly earnings for May (table 2). This phenomenon may be explained by the hiring of additional workers at minimum rates during the busy season, and by the fact that increased activity occurs earlier in the South, where wage rates are generally lower than elsewhere. The fall peak is less pronounced in terms of the employment index, and has a less consistent effect on the level of hourly earnings.

TABLE 2.—Average Hourly Earnings<sup>1</sup> in the Fertilizer Industry, by Months, 1939-43

Month	1939	1940	1941	1942	1943
January.....	\$0.393	\$0.420	\$0.429	\$0.495	\$0.573
February.....	.379	.404	.421	.470	.551
March.....	.349	.384	.408	.478	.552
April.....	.349	.379	.417	.498	1.586
May.....	.409	.430	.468	.529	.....
June.....	.429	.443	.486	.549	.....
July.....	.444	.449	.494	.591	.....
August.....	.446	.466	.517	.601	.....
September.....	.442	.469	.514	.593	.....
October.....	.420	.442	.501	.589	.....
November.....	.451	.451	.507	.583	.....
December.....	.428	.435	.501	.579	.....

<sup>1</sup> Including additional earnings from penalty rates for overtime.

<sup>2</sup> Preliminary.

### Union Organization in the Fertilizer Industry

Slightly over one-fourth of the workers in the fertilizer industry work under the terms of union agreements. The greater proportion of workers under agreement are found in California, Florida, Illinois, Maryland, Massachusetts, New York, Ohio, Pennsylvania, Tennessee and Virginia. Little or no union organization prevails in Alabama, Georgia, Louisiana, Michigan, New Jersey, North Carolina, and South Carolina.

The principal unions in this industry are the National Council of Chemical and Allied Industries Unions (composed of federal labor unions directly affiliated with the A. F. of L.), and District 50, United Mine Workers of America, which is not affiliated with either the A. F. of L. or the C. I. O. The former union represents slightly over half of the workers under agreement; the latter approximately one-third. A number of other unions have some representation in the industry.

### Methods of Wage Payment

Wage payment on a time basis predominates in the fertilizer industry. In January 1943, all but 1.5 percent of the plant workers were paid on an hourly, weekly, or monthly basis. One percent of the workers were paid piece rates, while the earnings of the remaining one-half of 1 percent of the workers were determined by some other form of incentive wage system.

Practices with respect to payment for overtime work cannot be determined precisely from the information secured during the course of the survey. On the basis of the wage data collected, however, certain inferences can be drawn.<sup>3</sup> Thus, 61 percent of the plants in which overtime hours were worked during the pay-roll period, and in which overtime pay practice could be determined, paid time and one-half after 40 hours; in 16 percent of the plants slightly different practices with respect to overtime premium pay prevailed. Straight-time rates for overtime hours were paid in 23 percent of the plants.

Only straight-time hourly earnings are shown in this report. Weekly earnings, however, include the additional compensation derived from extra rates for overtime.

### *Nature and Scope of Survey*

This survey of wages and hours in the fertilizer industry was undertaken by the Bureau of Labor Statistics as part of its established program of securing basic information on the wage structure of American industries. A previous survey of wages in this industry was made by the Bureau in 1938.<sup>4</sup> The present survey was specifically requested by the Wage and Hour and Public Contracts Division of the U. S. Department of Labor, for use in a minimum-wage determination under the Fair Labor Standards Act.

Because of the urgent need for current data, a pay-roll period during January 1943 was selected for study. It will be recalled that by comparison with the peak spring and fall seasons, employment in January is substantially lower and the general level of wages somewhat higher.

The basic data for the present survey were obtained very largely by means of mail questionnaires which were sent to practically all of the firms in the industry. A few of the larger firms were visited by representatives of the Bureau for the purpose of obtaining their assistance in the compilation of the data desired. Over 700 reports were received. Many of the returns, however, were from firms that had ceased business, employed no wage earners, or were improperly classified as being in the fertilizer industry. A relatively small number of usable returns were received too late for inclusion in the tabulation, or were omitted for other reasons. The data presented in this report are based on returns from 308 plants with 10,226 factory workers and 679 office employees.

The information requested on the questionnaire for individual workers included such items as race, sex, job title, shift, total hours worked, rate of pay, earnings at the regular rate of pay, and total earnings including extra or premium overtime earnings. Information as to the type of plant and whether the plant shipped goods outside of the State was also requested.

<sup>3</sup> The data collected for each worker included total hours actually worked, rate of pay, earnings at regular rates for total hours shown, and total earnings including premium pay for overtime. It was thus possible to determine the rate of premium pay in most of the plants in which overtime hours were worked.

<sup>4</sup> Serial No. R. 864: *Wages and Hours in the Fertilizer Industry, 1938.*

## Average Hourly Earnings of Plant Employees

The average straight-time hourly earnings of plant workers in the 308 establishments covered in the survey amounted to 55.0 cents<sup>5</sup> in January 1943 (table 3). Considerable light is thrown on the composition of this average by the distribution of individual earnings shown in table 4. Thus, 23.2 percent of the workers earned less than 40.0 cents an hour and almost as large a proportion of workers had earnings within the 2.5 cent interval from 40.0 to 42.5 cents. Although 55.5 percent of the workers received 42.5 cents or more an hour, only 13.7 percent earned as much as 77.5 cents.

TABLE 3.—Number of Plants, Number of Workers, and Average Hourly Earnings of Plant Workers in Fertilizer Industry, by Region, State, and Race, January 1943

Region and State	Number of plants	Total		White		Negro	
		Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings
United States.....	308	10, 226	\$0. 550	3, 279	\$0. 725	6, 947	\$0. 459
North.....	113	3, 166	. 765	2, 073	. 806	1, 093	. 679
California.....	16	174	. 787	157	. 778	17	(1)
Connecticut.....	4	82	. 630	24	. 580	58	. 652
Illinois.....	4	175	. 771	121	. 786	54	. 733
Indiana.....	4	80	. 549	45	. 530	35	. 578
Maine.....	5	105	. 562	104	. 561	1	(1)
Maryland.....	11	694	. 778	203	. 929	491	. 712
Massachusetts.....	6	148	. 805	141	. 808	7	(1)
New Jersey.....	9	485	. 749	369	. 797	116	. 583
New York.....	9	182	. 756	155	. 777	27	. 626
Ohio.....	13	330	. 709	196	. 737	134	. 665
Pennsylvania.....	15	271	. 702	143	. 708	128	. 694
Other States <sup>1</sup> .....	17	440	. 935	415	. 954	25	. 443
South.....	195	7, 060	. 452	1, 206	. 595	5, 854	. 418
Alabama.....	16	603	. 378	82	. 479	521	. 360
Arkansas.....	4	94	. 383	11	(1)	83	. 377
Florida.....	30	1, 306	. 513	335	. 717	971	. 438
Georgia.....	42	1, 266	. 369	199	. 454	1, 067	. 353
Mississippi.....	7	348	. 372	51	. 432	297	. 362
North Carolina.....	33	948	. 428	108	. 543	840	. 410
South Carolina.....	25	964	. 413	80	. 612	884	. 391
Tennessee.....	5	198	. 449	101	. 472	97	. 425
Texas.....	9	108	. 340	35	. 369	73	. 325
Virginia.....	20	1, 131	. 599	201	. 709	930	. 570
Other States <sup>2</sup> .....	4	94	. 335	3	(1)	91	. 334

<sup>1</sup> Number of workers too small to justify presentation of an average.

<sup>2</sup> Includes 1 plant in Arizona, 2 in Delaware, 1 in District of Columbia, 1 in Iowa, 2 in Michigan, 1 in Minnesota, 1 in Missouri, 1 in Montana, 1 in Nevada, 1 in Oregon, 1 in Rhode Island, 1 in Vermont, and 3 in Washington.

<sup>3</sup> Includes 1 plant in Kentucky, and 3 in Louisiana.

Wide regional variations in hourly earnings exist in the industry. Wage earners in the North earned an average of 76.5 cents an hour in January 1943, as against an average of 45.2 cents for workers in the South. In the North, 70.1 percent of the workers received 67.5 cents an hour or more, and 96.7 percent earned at least 42.5 cents an hour. The corresponding percentages in the South were 6.2 and 30.6.

To some extent, the regional difference in hourly earnings was due to the lower earnings of Negro workers, who accounted for 83 percent of the labor force in the South as against approximately one-third of the labor force in the North. These differences were also strongly

<sup>5</sup> The inclusion of the extra earnings resulting from premium overtime pay would increase this average by 3.7 cents.

influenced by the fact that Negro workers tend to be employed in the lower-paid occupations, whereas white workers are generally found in the supervisory and higher-paid occupations. White workers enjoyed an advantage in earnings over Negroes of 12.7 cents in the North and 17.7 cents in the South. The general difference in hourly earnings in favor of Northern workers amounted to 21.1 cents for white workers and to 26.1 cents for colored.

Although the general North-South wage difference is very marked, intraregional variations in levels of earnings are also relatively wide. Thus, as table 3 shows, average hourly earnings by State in the North ranged from 54.9 cents in Indiana to 80.5 cents in Massachusetts. The range in the South was from 34 cents in Texas to 59.9 cents in Virginia.

TABLE 4.—Percentage Distribution of Plant Workers in Fertilizer Industry, by Average Hourly Earnings, Region, and Race, January 1943

Average hourly earnings	United States			North			South		
	Total	White	Negro	Total	White	Negro	Total	White	Negro
Under 30.0 cents	2.0	1.2	2.4	( <sup>1</sup> )	( <sup>1</sup> )	-----	2.9	3.2	2.8
Exactly 30.0 cents	8.3	3.6	10.5	( <sup>1</sup> )	-----	0.1	12.1	9.7	12.4
30.1 and under 32.5 cents	.1	( <sup>1</sup> )	.1	-----	-----	-----	.1	.1	.1
32.5 and under 35.0 cents	1.4	.5	1.8	0.1	0.1	-----	1.9	1.2	2.1
35.0 and under 37.5 cents	9.9	2.8	13.3	1.2	.5	2.6	13.9	6.7	15.4
37.5 and under 40.0 cents	1.5	.3	2.0	-----	-----	-----	2.1	.7	2.4
40.0 and under 42.5 cents	21.3	5.3	29.0	2.0	1.1	3.7	30.2	12.6	33.8
42.5 and under 47.5 cents	6.9	3.7	8.3	1.6	1.6	1.6	9.2	7.3	9.6
47.5 and under 49.5 cents	6.2	5.9	6.4	5.7	5.6	5.8	6.5	6.3	6.5
49.5 and under 52.5 cents	6.6	4.9	7.4	4.3	4.9	3.1	7.7	5.1	8.2
52.5 and under 57.5 cents	3.8	5.2	3.1	6.3	5.6	7.7	2.6	4.6	2.2
57.5 and under 62.5 cents	5.9	6.7	5.5	8.7	5.8	14.1	4.6	8.3	3.9
62.5 and under 67.5 cents	4.4	7.3	3.1	11.0	7.2	18.1	1.5	7.5	.2
67.5 and under 72.5 cents	8.0	14.0	5.2	23.3	18.5	32.4	1.1	6.0	.1
72.5 and under 77.5 cents	3.2	8.1	1.0	7.9	9.3	5.2	1.1	5.7	.2
77.5 and under 82.5 cents	1.6	3.7	.6	4.2	4.4	3.8	.4	2.5	( <sup>1</sup> )
82.5 and under 87.5 cents	2.2	6.2	.2	5.5	7.9	1.1	.6	3.4	.1
87.5 and under 92.5 cents	1.6	4.8	.1	4.2	6.2	.5	.4	2.8	-----
92.5 and under 97.5 cents	1.2	3.7	( <sup>1</sup> )	3.3	4.0	.1	.3	1.6	-----
97.5 and under 102.5 cents	2.3	7.2	-----	6.5	10.0	-----	.4	2.5	-----
102.5 and under 107.5 cents	1.6	4.9	( <sup>1</sup> )	4.2	6.4	.1	.4	2.4	( <sup>1</sup> )
107.5 cents and over	1.6	4.9	( <sup>1</sup> )	4.2	6.4	.1	.4	2.4	( <sup>1</sup> )
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers	10, 226	3, 279	6, 947	3, 166	2, 073	1, 093	7, 060	1, 206	5, 854
Average hourly earnings	\$0. 550	\$0. 725	\$0. 459	\$0. 765	\$0. 806	\$0. 679	\$0. 452	\$0. 595	\$0. 418

<sup>1</sup> Less than a tenth of 1 percent.

Because the minimum-wage levels prescribed by the Fair Labor Standards Act<sup>6</sup> affect only those plants engaged in interstate commerce, plants not so engaged might be expected to have somewhat lower average hourly earnings. To test this assumption, the plants included in the survey were classified on the basis of whether or not they make shipments in interstate commerce. Table 5 shows a distribution of employees by average hourly earnings in these two plant groups. A marked difference in hourly earnings is evident, amounting to 17.2 cents in the North and 10.7 cents in the South. It will be observed that more than 11 percent of the workers in the intrastate plants in the South earned less than 30 cents an hour in January 1943.

<sup>6</sup> At the time of the wage survey, the fertilizer industry was subject to the statutory minimum wage of 30 cents an hour under the Fair Labor Standards Act. In addition, minima of 30 cents in the South, 50 cents in the Far West, and 40 cents in the remainder of the country had been established under the Public Contracts Act for production on Government contracts amounting to \$10,000 or more.

TABLE 5.—Percentage Distribution of Fertilizer-Plant Workers by Average Hourly Earnings, Region, and Whether Products Are Shipped Outside State, January 1943

Average hourly earnings	United States			North			South		
	Total <sup>1</sup>	Plants shipping outside State	Plants not shipping outside State	Total <sup>2</sup>	Plants shipping outside State	Plants not shipping outside State	Total <sup>3</sup>	Plants shipping outside State	Plants not shipping outside State
Under 30.0 cents.....	2.0	(4)	9.3	(4)	(4)	0.3	2.9	0.1	11.4
Exactly 30.0 cents.....	8.3	5.3	19.5	(4)	(4)		12.0	8.0	23.9
30.1 and under 32.5 cents.....	1.4	(4)	.1				.1	.1	.1
32.5 and under 35.0 cents.....	.1	1.6	.4	0.1	(4)	.3	1.9	2.5	.5
35.0 and under 37.5 cents.....	9.9	8.8	13.8	1.2	1.4		14.0	12.5	17.0
37.5 and under 40.0 cents.....	1.5	1.4	1.5				2.1	2.2	1.9
40.0 and under 42.5 cents.....	21.3	20.7	24.3	2.0	1.8	3.2	30.2	30.3	29.0
42.5 and under 47.5 cents.....	6.9	6.8	7.2	1.6	1.4	2.5	9.2	9.6	8.2
47.5 and under 52.5 cents.....	6.2	5.6	8.9	5.7	3.2	23.0	6.5	6.8	5.7
52.5 and under 57.5 cents.....	6.6	7.5	3.3	4.3	2.6	15.5	7.7	10.1	.5
57.5 and under 62.5 cents.....	3.8	4.0	3.1	6.3	5.1	14.7	2.6	3.4	.5
62.5 and under 67.5 cents.....	5.9	7.0	1.8	8.7	8.7	8.5	4.6	6.1	.2
67.5 and under 72.5 cents.....	4.4	5.0	2.3	11.0	11.1	11.2	1.5	1.9	.2
72.5 and under 77.5 cents.....	8.0	9.6	2.2	23.3	25.2	10.2	1.1	1.4	.3
77.5 and under 82.5 cents.....	3.2	3.9	.9	7.9	8.4	4.0	1.1	1.5	.2
82.5 and under 87.5 cents.....	1.6	1.9	.4	4.2	4.6	1.5	.4	.5	.2
87.5 and under 92.5 cents.....	2.2	2.6	.4	5.5	6.0	2.3	.6	.9	
92.5 and under 97.5 cents.....	1.6	2.0	.1	4.2	4.8	.5	.4	.6	.1
97.5 and under 102.5 cents.....	1.2	1.4	.4	3.3	3.5	1.5	.3	.3	.1
102.5 and under 107.5 cents.....	2.3	2.9	.1	6.5	7.4	.5	.4	.6	
107.5 cents and over.....	1.6	2.0	(4)	4.2	4.8	.3	.4	.6	
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers.....	10, 226	8, 021	2, 167	3, 166	2, 760	400	7, 060	5, 261	1, 767
Average hourly earnings.....	\$0. 550	\$0. 584	\$0. 419	\$0. 765	\$0. 787	\$0. 615	\$0. 452	\$0. 478	\$0. 371

<sup>1</sup> Includes 33 workers in 3 plants which did not report whether they shipped outside the State.

<sup>2</sup> Includes 6 workers in 1 plant which did not report whether they shipped outside the State.

<sup>3</sup> Includes 32 workers in 2 plants which did not report whether they shipped outside the State.

<sup>4</sup> Less than a tenth of 1 percent.

### Average Hourly Earnings as Related to Community Size, Company Affiliation, and Type of Product

Levels of hourly earnings in the fertilizer industry differed considerably by size of community in January 1943. In the industry as a whole, the average hourly earnings of workers in plants in communities with a population of less than 10,000 amounted to 42.1 cents, as compared with an average of 45.1 cents for plants in communities of 10,000 and under 100,000 population, and 66.6 cents in communities of 100,000 and over. In the North, the range in level of earnings between the smallest and largest community size was from 60.6 cents to 80.1 cents, or a difference of 19.5 cents, while in the South the range was from 36.5 cents to 54.8 cents, a difference of 18.3 cents an hour (table 6).

**TABLE 6.—Number of Plants, Number of Workers, and Average Hourly Earnings in Fertilizer Industry, by Region and Size of Community, January 1943**

Region and size of community (population)	Number of plants	Number of workers	Average hourly earnings
United States.....	308	10,226	\$0.550
Under 10,000.....	123	2,319	.421
10,000 and under 100,000.....	83	2,983	.451
100,000 and over.....	102	4,924	.666
North.....	113	3,166	.765
Under 10,000.....	34	513	.606
10,000 and under 100,000.....	15	320	.761
100,000 and over.....	64	2,333	.801
South.....	195	7,060	.452
Under 10,000.....	89	1,806	.365
10,000 and under 100,000.....	68	2,663	.411
100,000 and over.....	38	2,591	.548

In terms of company affiliation, average hourly earnings in the large and intermediate companies<sup>7</sup> were considerably higher than earnings in single-plant companies. In the North, the large companies led with average hourly earnings of 83.3 cents, while in the South the intermediate companies had the highest average, 53.7 cents (table 7).

From the standpoint of type of manufacture, acid-mixing plants had higher average hourly earnings than either superphosphate or dry-mixing plants in both regions. In the industry as a whole, acid-mixing plants paid an average of 61.0 cents per hour, superphosphate plants an average of 54.2 cents, and dry-mixing plants an average of 47.7 cents.

**TABLE 7.—Number of Plants, Number of Workers and Average Hourly Earnings in Fertilizer Industry, by Region, Size of Company, and Type of Plant, January 1943**

Size of company and type of plant	United States			North			South		
	Number of plants	Number of workers	Average hourly earnings	Number of plants	Number of workers	Average hourly earnings	Number of plants	Number of workers	Average hourly earnings
Large companies.....	74	3,813	\$0.591	20	1,291	\$0.833	54	2,522	\$0.462
Intermediate companies.....	75	3,070	.601	40	1,030	.735	35	2,040	.537
Small companies.....	159	3,343	.457	53	845	.694	106	2,498	.374
Acid-mixing plants.....	42	4,560	.610	12	1,387	.862	30	3,173	.499
Superphosphate plants.....	38	1,597	.542	14	614	.742	24	983	.416
Dry-mixing plants.....	228	4,069	.477	37	1,165	.649	141	2,904	.406

It should be pointed out that the differences in plant average wage levels by size of community, company affiliation, and type of plant do not necessarily reflect accurately the differences in wage rates. For example, acid-mixing plants have a more complex occupational structure than either of the other two types of plants, and the higher wage levels in these plants mirror, at least in part, the somewhat larger employment of relatively higher-skilled workers. Moreover, to take another instance, the wage advantage apparently enjoyed by workers in communities of more than 10,000 inhabitants probably is due, in some measure, to the fact that acid-mixing plants are found mainly in the larger communities.

<sup>7</sup> As previously pointed out, the term "large companies" refers to a small group of multiplant firms that exert a dominant influence on the industry; the term "intermediate companies" refers to a larger group of firms with two or more plants each, but not comparable in size with the large companies.

## Hourly and Weekly Earnings and Hours of Labor, by Occupation

Table 8 provides a detailed picture, by region and race, of average hourly earnings in the principal occupations found in the fertilizer industry. This same table also shows average hours worked in each occupation as well as average weekly earnings. It is important to notice that the data on average weekly earnings include premium overtime compensation.

TABLE 8.—Average Hourly Earnings, Weekly Hours, and Weekly Earnings in Fertilizer Industry, by Region, Occupation, and Race, January 1943

Region and occupation	Number of workers			Average hourly earnings			Average weekly hours			Average weekly earnings <sup>1</sup>		
	Total	White	Negro	Total	White	Negro	Total	White	Negro	Total	White	Negro
United States.....	10, 226	3, 279	6, 947	\$0. 550	\$0. 725	\$0. 459	40. 6	43. 3	39. 4	\$23. 82	\$33. 63	\$19. 20
Acid-chamber men.....	153	63	90	. 568	. 740	. 460	48. 5	45. 4	50. 6	29. 83	35. 58	25. 80
Baggers.....	227	45	182	. 521	. 622	. 498	41. 9	38. 7	42. 6	22. 93	25. 19	22. 37
Bag printers.....	77	29	48	. 518	. 606	. 466	42. 1	40. 5	43. 1	22. 89	25. 45	21. 34
Bag sewers.....	242	44	198	. 524	. 660	. 493	43. 2	43. 9	43. 0	23. 93	30. 99	22. 37
Bag stowers.....	149	21	128	. 451	. 573	. 432	38. 0	36. 4	38. 3	17. 98	21. 71	17. 37
Car runners and conveyor operators.....	130	23	107	. 493	. 716	. 446	45. 0	44. 3	45. 2	23. 77	32. 92	21. 80
Carpenters.....	107	96	11	. 814	. 829	(?)	46. 3	46. 6	(?)	40. 25	41. 97	(?)
Den diggers.....	242	10	232	. 418	(?)	. 409	41. 7	(?)	41. 6	18. 51	(?)	18. 11
Dry-mixer operators.....	170	52	118	. 543	. 609	. 514	46. 3	46. 5	46. 3	26. 90	30. 35	25. 38
Foremen.....	496	453	43	. 795	. 820	. 584	48. 3	47. 5	57. 2	40. 62	40. 89	37. 68
Laborers.....	4, 526	1, 077	3, 449	. 529	. 735	. 461	39. 2	40. 6	38. 7	22. 12	32. 14	19. 00
Maintenance workers, miscellaneous.....	159	145	14	. 937	. 969	(?)	47. 0	46. 9	(?)	48. 37	49. 82	(?)
Maintenance men's helpers.....	84	47	37	. 633	. 747	. 498	47. 2	45. 7	49. 1	32. 76	37. 34	26. 95
Mechanics.....	118	109	9	. 839	. 869	(?)	49. 7	49. 5	(?)	45. 98	47. 38	(?)
Rock grinders.....	84	28	56	. 557	. 749	. 462	50. 4	49. 9	50. 6	31. 31	42. 14	25. 90
Scalmen.....	207	76	131	. 462	. 547	. 414	42. 0	41. 1	42. 5	20. 65	23. 73	18. 86
Shovelers, hand.....	837	131	706	. 459	. 636	. 426	34. 6	34. 8	34. 5	16. 60	22. 99	15. 42
Superphosphate mixers.....	114	42	72	. 590	. 689	. 538	46. 5	43. 2	48. 5	29. 82	32. 03	28. 53
Truckers, hand.....	898	119	779	. 412	. 538	. 391	33. 4	35. 8	33. 1	14. 26	20. 06	13. 37
Truck and tractor drivers.....	267	114	153	. 532	. 576	. 500	48. 3	47. 8	48. 7	27. 92	29. 64	26. 64
Watchmen.....	308	274	34	. 476	. 485	. 398	45. 7	46. 1	42. 4	23. 12	23. 78	17. 78
Miscellaneous plant workers.....	631	281	350	. 659	. 814	. 534	43. 7	44. 0	43. 4	30. 80	38. 38	24. 72
North.....	3, 166	2, 073	1, 093	. 765	. 806	. 679	41. 0	42. 2	38. 7	33. 20	36. 28	27. 38
Acid-chamber men.....	40	35	5	. 916	. 924	(?)	41. 7	42. 1	(?)	39. 48	40. 29	(?)
Baggers.....	92	35	57	. 684	. 688	. 682	41. 4	39. 1	42. 9	29. 63	28. 10	30. 58
Bag printers.....	18	14	4	(?)	(?)	(?)	(?)	(?)	(?)	(?)	(?)	(?)
Bag sewers.....	86	38	48	. 710	. 694	. 724	43. 4	44. 2	42. 7	32. 45	32. 80	32. 24
Bag stowers.....	27	12	15	. 684	(?)	(?)	39. 4	(?)	(?)	27. 79	(?)	(?)
Car runners and conveyor operators.....	42	20	22	. 764	. 782	. 746	41. 1	43. 3	39. 2	32. 42	34. 98	30. 09
Carpenters.....	39	39	---	1. 002	1. 002	---	42. 7	42. 7	---	45. 08	45. 08	---
Den diggers.....	44	9	35	. 642	(?)	. 645	37. 9	(?)	36. 8	25. 18	(?)	23. 89
Dry-mixer operators.....	73	36	37	. 722	. 696	. 749	44. 5	46. 4	42. 7	34. 01	34. 45	33. 58
Foremen.....	209	201	8	. 977	. 983	(?)	44. 3	44. 2	(?)	44. 89	44. 98	(?)
Laborers.....	1, 419	964	455	. 740	. 768	. 673	39. 7	41. 3	36. 4	31. 38	34. 18	25. 44
Maintenance workers, miscellaneous.....	72	70	2	1. 071	1. 081	(?)	44. 9	44. 5	(?)	51. 35	51. 21	(?)
Maintenance men's helpers.....	26	17	9	. 834	(?)	(?)	44. 6	(?)	(?)	39. 94	(?)	(?)
Mechanics.....	60	59	1	. 929	. 933	(?)	48. 6	48. 3	(?)	49. 23	49. 06	(?)
Rock grinders.....	28	15	13	. 745	(?)	(?)	46. 9	(?)	(?)	35. 37	(?)	(?)
Scalmen.....	36	23	13	. 683	. 700	(?)	41. 4	41. 4	(?)	29. 25	30. 09	(?)
Shovelers, hand.....	202	116	86	. 644	. 670	. 608	35. 1	35. 3	34. 9	23. 40	24. 53	21. 80
Superphosphate mixers.....	37	11	26	. 775	(?)	. 754	46. 2	(?)	44. 8	38. 89	(?)	36. 32

See footnotes at end of table.

TABLE 8.—Average Hourly Earnings, Weekly Hours, and Weekly Earnings in Fertilizer Industry, by Region, Occupation, and Race, January 1943—Continued

Region and occupation	Number of workers			Average hourly earnings			Average weekly hours			Average weekly earnings		
	Total	White	Negro	Total	White	Negro	Total	White	Negro	Total	White	Negro
North—Continued.												
Truckers, hand.....	169	67	102	\$0.596	\$0.650	\$0.559	37.4	37.9	37.0	\$23.08	\$25.77	\$21.31
Truck and tractor drivers.....	71	46	25	.707	.716	.690	44.3	44.4	44.1	33.25	33.50	32.78
Watchmen.....	102	94	8	.648	.649	(?)	45.7	(?)	(?)	31.12	31.34	(?)
Miscellaneous plant workers.....	274	152	122	.848	.921	.750	43.2	44.4	41.7	39.05	44.09	32.78
South.....	7,060	1,206	5,854	.452	.595	.418	40.4	45.2	39.5	19.62	29.07	17.67
Acid-chamber men.....	113	28	85	.466	.543	.442	50.8	49.4	51.3	26.41	29.69	25.33
Baggers.....	135	10	125	.411	(?)	.413	42.1	(?)	42.5	18.37	(?)	18.63
Bag printers.....	59	15	44	.453	(?)	.442	43.1	(?)	43.1	20.71	(?)	20.38
Bag sewers.....	156	6	150	.420	(?)	.420	43.1	(?)	43.1	19.23	(?)	19.23
Bag stowers.....	122	9	113	.397	(?)	.403	37.7	(?)	38.4	15.81	(?)	16.26
Car runners and conveyor operators.....	88	3	85	.380	(?)	.381	46.9	(?)	46.7	19.64	(?)	19.66
Carpenters.....	68	57	11	.701	.727	(?)	48.4	49.3	(?)	37.48	39.85	(?)
Den diggers.....	198	1	197	.374	(?)	.374	42.6	(?)	42.7	17.03	(?)	17.08
Dry-mixer operators.....	97	16	81	.418	(?)	.418	47.7	(?)	47.9	21.55	(?)	21.63
Foremen.....	287	252	35	.680	.705	.537	51.3	50.1	59.5	37.51	37.64	36.55
Laborers.....	3,107	113	2,994	.431	.406	.431	38.9	34.5	39.1	17.90	14.69	18.02
Maintenance workers, miscellaneous.....	87	75	12	.834	.875	(?)	43.8	49.2	(?)	45.90	48.53	(?)
Maintenance men's helpers.....	58	30	28	.549	.654	.441	48.4	47.5	49.4	29.55	34.59	24.15
Mechanics.....	58	50	8	.749	.797	(?)	50.8	50.8	(?)	42.61	45.41	(?)
Rock grinders.....	56	13	43	.472	(?)	.407	52.1	(?)	52.8	27.79	(?)	24.11
Scalemen.....	171	53	118	.416	.480	.388	42.1	41.0	42.6	18.84	20.97	17.88
Shovelers, hand.....	635	15	620	.399	(?)	.400	34.4	(?)	34.5	14.44	(?)	14.53
Superphosphate mixers.....	77	31	46	.502	.633	.430	46.7	41.0	50.5	25.46	27.44	24.12
Truckers, hand.....	729	52	677	.383	.370	.382	32.5	33.0	32.5	12.21	12.70	12.17
Truck and tractor drivers.....	196	68	128	.476	.491	.467	49.8	50.1	49.6	25.99	27.02	25.44
Watchmen.....	206	180	26	.391	.400	.322	45.7	46.2	42.1	19.16	19.84	14.44
Miscellaneous plant workers.....	357	129	228	.518	.685	.425	44.0	43.5	44.3	24.47	31.66	20.41

<sup>1</sup> Includes extra earnings from overtime.

<sup>2</sup> Number of workers too small to justify the presentation of an average.

An examination of table 8 indicates that the average of 55 cents an hour for all plant workers in January 1943 was composed of a wide range of occupational averages, varying from 41.2 cents an hour for hand truckers to 93.7 cents an hour for maintenance workers (other than carpenters and mechanics). Carpenters averaged 81.4 cents and mechanics 83.9 cents an hour. Laborers, the most important occupational group in terms of number of workers, were paid an average of 52.9 cents an hour.<sup>8</sup>

In the North, hand truckers, with an average of 59.6 cents an hour, earned less than any other occupational group, while miscellaneous maintenance men earned \$1.07 an hour. Carpenters also received slightly over \$1.00 an hour. Laborers were paid 74.0 cents an hour.

Occupational averages in the South were at a substantially lower level than in the North, ranging from 36.3 cents an hour for hand truckers to 83.4 cents an hour for miscellaneous maintenance men. Carpenters averaged 70.1 cents an hour, while mechanics earned an average of 74.9 cents. Laborers were paid 43.1 cents an hour.

<sup>8</sup> The relatively high rate for laborers, compared with other unskilled occupations, is partly explained by the fact that many plants reported workers as "laborers" when perhaps more specific titles could have been used.

In every occupation shown for the country as a whole, Negro workers received lower hourly earnings than white workers. The difference ranged from 7.6 cents an hour for truck and tractor drivers to 28.7 cents for rock grinders. In the North, white workers received higher average hourly wage rates than Negroes in 7 of the 9 occupations for which comparisons can be made. In the Southern region, white workers had a wage advantage over the Negro employees in most occupations. The advantage ranged from 0.8 cents to 26.0 cents in the 10 occupations which permit a racial comparison. Only in the case of laborers did Negro workers have higher hourly earnings. For this occupation, the difference amounted to 2.5 cents.

Wage earners in the fertilizer industry as a whole worked an average of 40.6 hours a week in January 1943, as table 8 shows. Average hours were 41 in the North and 40.4 in the South. White workers had longer average hours than Negro employees, with the average difference amounting to 3.9 hours in the industry as a whole, 3.5 hours in the North, and 5.7 hours in the South.

Average hours in the industry were measurably lowered by the relatively short average hours of laborers, hand shovelers, and hand truckers, the three largest occupational groups. Workers in 12 of the 22 occupational categories shown in table 8 had average hours of more than 45 a week; these groups were, in general, composed of the more skilled employees. The tendency for average hours to be relatively low among workers in the essentially unskilled occupations can be observed in both regions.

The average plant worker in the fertilizer industry had weekly earnings of \$23.82 in January 1943, including amounts received as premium pay for overtime. Table 8 shows that the average white worker earned \$33.63 and the average Negro worker \$19.20. Average weekly earnings in the North were \$33.20 (\$36.28 for white workers and \$27.38 for Negroes) and in the South \$19.62 (\$29.07 for white employees and \$17.67 for Negroes). The average difference between white and Negro workers in average weekly earnings in the industry and in both regions was greater than the difference in average hourly earnings. This was due primarily to the fact that white workers had longer average hours.

In the industry as a whole, miscellaneous maintenance workers received the highest average weekly earnings (\$48.37) and hand truckers the lowest (\$14.26). Laborers averaged \$22.12. The average for mechanics was \$45.98, about \$5 above the average for working foremen. The same general pattern of occupational weekly earnings was found in both the North and the South, but on a somewhat lower level in the latter region.

### *Earnings and Hours of Office Employees*

In addition to plant employees, data were secured on the hours and earnings of 679 clerical workers employed by 184 of the 308 establishments covered by the survey. Summary information for these employees is shown in table 9.

Clerical employees in the industry as a whole earned an average of 70.7 cents an hour in January 1943. The average for male workers was 76.1 cents, as compared with 64.7 cents for female employees. It is interesting to observe that the level of earnings of clerical workers

in the North (73 cents) exceeded the level in the South by only slightly more than 4 cents an hour. This difference, of course, is much smaller than the differential previously shown for plant employees.

The average office employee, as table 9 reveals, worked 42.3 hours a week at the time of the wage survey. The average in the South was appreciably greater than in the North—43.9 hours as against 40.5 hours. Average hours for men in both regions were greater than for women.

The average weekly earnings of office workers, including any amounts derived from premium overtime pay, amounted to \$30.73—\$34.69 for men and \$26.59 for women. The average weekly earnings of both male and female office employees in the South were somewhat higher than in the North because of the longer average hours worked.

TABLE 9.—Average Hourly Earnings, Weekly Hours, and Weekly Earnings of Clerical Workers in Fertilizer Industry, by Region, Occupation, and Sex, January 1943

Region and occupation	Number of workers			Average hourly earnings			Average weekly hours			Average weekly earnings <sup>1</sup>		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
United States.....	679	347	332	\$0.707	\$0.761	\$0.647	42.3	43.9	40.6	\$30.73	\$34.69	\$26.59
Bookkeepers.....	117	60	57	.749	.852	.626	43.7	46.3	40.9	33.11	40.03	25.83
Clerks.....	332	238	94	.707	.741	.616	41.9	42.5	40.4	30.73	32.85	25.35
Stenographers and typists.....	133	7	126	.670	(*)	.664	40.5	(*)	40.3	27.42	(*)	27.02
Miscellaneous office workers.....	97	42	55	.706	.732	.682	44.3	48.1	41.5	32.40	37.51	28.51
North.....	320	140	180	.730	.823	.655	40.5	41.0	40.0	29.82	34.33	26.30
Bookkeepers.....	55	21	34	.735	.873	.640	41.9	44.8	40.0	30.91	39.24	25.76
Clerks.....	140	99	41	.757	.806	.640	39.9	40.0	39.5	30.64	32.79	25.46
Stenographers and typists.....	77	4	73	.672	(*)	.669	40.2	(*)	40.1	27.02	(*)	26.82
Miscellaneous office workers.....	48	16	32	.735	.883	.658	41.1	42.0	40.7	30.66	38.47	26.76
South.....	359	207	152	.689	.723	.638	43.9	45.8	41.4	31.55	34.93	26.93
Bookkeepers.....	62	39	23	.760	.842	.607	45.3	47.1	42.2	35.07	40.45	25.94
Clerks.....	192	139	53	.673	.699	.599	43.4	44.3	41.1	30.79	32.90	25.27
Stenographers and typists.....	56	3	53	.668	(*)	.657	41.0	(*)	40.6	27.98	(*)	27.29
Miscellaneous office workers.....	49	26	23	.681	.656	.714	47.5	51.8	42.7	34.11	36.91	30.94

<sup>1</sup> Includes extra earnings resulting from penalty rates for overtime.

<sup>2</sup> Number of workers too small to justify the presentation of an average.