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MILK SALES UP, CREAM SALES DOWN

The Nation's farmers marketed 117 billion pounds of milk in 1961, or about 50 percent more than in 1930, reports the United States Department of Agriculture. This increase in marketings reflects not only the 25-percent gain in output which occurred between 1930 and 1961 but also a substantial decrease in the use of milk on farms — from 22 billion pounds in 1930 to 8 billion pounds in 1961.

Two factors have accounted for the gradual rise in milk marketings — increasing production and a decreasing number of people on farms. The declining use of milk on farms where it is produced has resulted in an increase of 14 billion pounds in farm marketings of milk in 1961 over 1930, while increased milk output has added 25 billion pounds. The use of milk for production of farm-separated cream and for the retail sale of milk and cream by farmers also trended downward during 1930-61.

The USDA says that changes in marketing patterns moved slowly during the 1930's. The major shift in marketing of milk by farmers began during World War II. In 1940, about 43 percent of the total milk output was sold as whole milk and 30 percent as cream; farmers retailed almost 6 percent of their milk as fluid milk and cream and sold 1 percent as farm-churned butter. Approximately 20 percent of the milk was used on the farms where it was produced.

By 1950, only 15 percent of the milk remained on the Nation's farms; 85 percent was marketed — 64 percent as whole milk and 17 percent as farm-skimmed cream. Retail sales by farmers declined to 3 percent of marketings, and sales of farm-churned butter decreased from 1940.

The shift toward the sale of whole milk to plants and dealers was virtually concluded during the period 1950-60. Farm-churned butter almost completely disappeared from the market, and retail sales of milk and cream by farmers declined to less than 2 percent of production. Farm-separated cream decreased to 7 billion pounds of milk equivalent, while the sale of whole milk advanced to 108 billion pounds. By 1961, the sale of whole milk was predominant in all of the states except North Dakota, where cream accounted for 78 percent of sales from farms.

According to the USDA, the shift from the sale of farm-separated cream to whole milk brought farmers greater cash returns per hundredweight of milk products. The shift to the sale of whole milk was made possible by the following general changes: (1) the increase in the number of whole milk receiving plants that began during World War II as a result of the need for more efficient use of our food resources and (2) changed production methods — such as use of milking machines, mechanical refrigeration, and bulk tank coolers — which have enabled farmers to increase the size of their dairy herds and to sell milk to plants many miles distant.

The increased movement of whole milk off the farms has made available for human food a large amount of solids-not-fat that formerly would have been fed to animals on the farm. At

FEDERAL RESERVE BANK OF DALLAS
DALLAS, TEXAS

present, the quantity of skim milk left on the farm after the sale of farm-skimmed cream totals about 6 billion pounds, which is enough to make approximately 500 million pounds of nonfat dry milk. About 2 billion pounds of this product were made in 1961.

In addition to its use in nonfat dry milk, solids-not-fat which reaches the market is also used in skim milk and in low-fat fluid items, cottage cheese, ice cream, and low-fat frozen dairy products. Approximately 750 million pounds of nonfat dry milk are exported from the United States each year, the major portion of which is donated for relief or welfare purposes, according to the USDA.

In view of the long-time rise in milk marketings, the sharp drop in whole milk consumption in 1961 was of particular concern to the industry. In 63 of 71 major marketing areas, per capita usage of milk declined in 1961 from a year earlier, and in 29 of the areas, the decrease was as much as 10 pounds per person. The consumption of fluid cream products also declined. Somewhat offsetting these decreases were gains in per capita usage of skim milk and some specialty dairy products.

Citrus By-Products Replace Expensive Chemical

Citrus by-products have been substituted successfully for the expensive chemical beta-ionone in the experimental production of beta-carotene, an important source of vitamin A, according to the United States Department of Agriculture. Beta-carotene is used to supply vitamin A to pharmaceuticals and animal feeds and as a food coloring.

Either citrus pulp (at a cost of $35 a ton) or citrus molasses ($20 a ton) can replace beta-ionone ($9 a pound) in the experimental process, which involves fermentation by a carotene-producing mold. The USDA says that the lower cost possible with citrus by-products should make the fermentation process competitive with present-day chemical methods of synthesizing beta-carotene. The fermentation process provides a fiber-free, high-vitamin A product that is needed in mixed feeds, especially for poultry.

Bollworms Not Resistant to Insecticides

Since some Texas farmers had difficulty in controlling bollworms last year, indications were that these cotton insects might be developing a tolerance to commonly used chemicals. However, in tests by the Texas Agricultural Experiment Station, bollworms showed no resistance to the insecticides used for their control.

Bollworm larvae for the tests were collected over the State and reared on cotton leaves and an artificial diet. They were then treated with various insecticides at different dosages, and the rate of kill was recorded. The insecticides used were DDT, endrin, Sevin, toxaphene-DDT (2 to 1 ratio), and Strobane-DDT (2 to 1 ratio). The bollworms generally showed a good rate of kill from the treatments.

Since the population of tobacco budworms was unusually high at the time of the Texas A. & M. study, data were also kept on this insect. The bollworm and the tobacco budworm attack cotton in a similar manner. Comparative toxicity tests show the bollworm to be more susceptible than the tobacco budworm to DDT. This fact agrees with previous findings that tobacco budworms are harder to kill than cotton bollworms.

The study indicates that bollworms may be controlled with the usually recommended insecticides. However, if tobacco budworms are present, DDT alone will not provide sufficient control.

Properly Adjusted Cotton Picker Pays

Harvesting with a properly adjusted cotton picker will result in an extra $10 per bale, says B. G. Reeves, Extension Cotton Ginning and Mechanization Specialist at Texas A. & M. College. Mr. Reeves offers the following suggestions for more efficient operation of a cotton picker.

Doffers, or stripper bars, should be adjusted to remove all of the cotton each time. The spindle should not touch the doffer, and these

will be properly adjusted when light can scarcely be seen between them.

In order to keep the spindles free of plant and leaf juices, moisture pads should be adjusted so that they touch the entire picking surface of the spindle. Poor adjustment of the moisture pad causes the spindles to gum up, resulting in unsatisfactory doffing, staining, and soiling of the lint, as well as lower cotton grades.

Using too much water makes cotton more difficult to gin and can reduce grades, according to the cotton specialist. The use of excess water causes mud and trash to collect in the picker unit and to stain the cotton. The moisture pad should be adjusted properly, and barely enough water should be used to clean the spindles.

Mr. Reeves points out these two important facts: (1) Doffers and moisture pads should be adjusted to the spindles and should not be changed as field conditions change, and (2) only plain water, at the rate of 2 gallons per bale, should be used to clean the spindles. Oil is *not* recommended for picker spindles.

The specialist says that methods of making necessary cotton picker adjustments are described in the operator's manual and should be followed carefully.

"Frontier" Crimson Clover

Frontier, a new early-maturing annual crimson clover, is intended to fill a need on pastures grazed during the winter, according to the United States Department of Agriculture. The variety was developed by the USDA and the Mississippi Agricultural Experiment Station.

The new Frontier clover, which must be seeded each year, is expected to be particularly valuable in the South and along the West Coast, where forage producers have experienced difficulty in maintaining volunteer stands of crimson clover in pastures used for winter grazing.

Frontier was developed from a crimson clover variety introduced from Italy. In addition to its early maturity, the new clover has large seed, which helps to give it greater seedling vigor, faster fall and winter growth, and generally higher forage and seed yields than varieties now in use.

In the Mississippi studies, Frontier matured 3 weeks earlier than reseeding varieties tested. Under field conditions, it was 7 to 10 days earlier than other early varieties and 14 to 18 days earlier than late types. Consequently, the new crimson clover will permit earlier grazing than varieties now in use. Frontier crimson clover seed is expected to be available to growers in 1963.

New Cotton Spinning Machine

United States Department of Agriculture engineers have developed a radically new experimental cotton spinning machine that may be an important step toward eventual automation in cotton spinning mills. Although much additional research will be needed to perfect its operation, the prototype has demonstrated advantages that could lead to substantial savings of time and labor in spinning cotton yarn, according to the USDA.

The new machine, known as the SRRL Ringless Spinning Machine, spins cotton without the use of a bobbin, rings, or a traveler, which limit the rate of yarn production and the size and shape of yarn packages in present-day spinning. With the new SRRL Ringless Spinning Machine, the yarn is wound directly from the spindle into packages of any shape or size needed for later processing, thereby eliminating time and labor now required to change bobbins and to rewind the yarn.

Snail for Aquatic Weed Control

A large South American freshwater snail — now present in the continental United States only in Florida — may prove useful in controlling aquatic weeds in southern areas of this country, as well as in other tropical and subtropical regions of the world, according to the United States Department of Agriculture.

In a 3-month test made in 1961 at Fort Lauderdale, Florida, the snail did an excellent job of cleaning up coontail, southern naiad, Illinois pondweed, and salvinia — all of which are troublesome weeds in waterways in the southern part of the United States. The snail retarded growth and flowering of water hyacinth and partially controlled alligator weed, which

are among the major aquatic weed pests of the South.

According to the USDA, aquatic weed growth interferes with agriculture, navigation, transportation, fisheries, flood control, and recreation. In addition, it poses problems in hydroelectric power production.

Flooding Tolerance of Grasses

Bermuda, buffalo, switch, vine mesquite, and prairie cord grasses withstood up to 20 days of flooding in tests conducted by the Agricultural Research Service at Chickasha, Oklahoma. These species offer good possibilities for seeding on locations subject to flooding in the southern Great Plains, according to the Texas Agricultural Extension Service. Grasses with tolerance to intermittent flooding are needed in reservoirs being built for upstream flood prevention and for locations on farms and ranches where such flooding creates a vegetation problem.

The tolerance of grasses in six test areas was determined by E. D. Rhoades, the ARS Agricultural Engineer who conducted the Oklahoma experiments. Each test area was 40 feet by 90 feet, with a sloping floor and an earth-filled embankment on three sides. When filled from a nearby lake, these areas simulate flood-water-detention reservoirs. The depths of the water ranged from a few inches to 6 feet.

Grasses were established on the test plots and then flooded for 5, 10, or 20 days, beginning in mid-March, early May, and mid-June. They were mainly species which grow with limited moisture.

Mr. Rhoades found that none of the grasses were affected by flooding while they were dormant. During the growth period, however, the less-tolerant species — including eastern gama grass, weeping love grass, alkali sacaton, and bluegrass — were injured by short periods (5 days) of flooding and were destroyed by 20 days of flooding.

Preliminary tests indicate that the following grasses also have flooding tolerance: Virginia wild rye, reed canary grass, western wheatgrass, smooth brome, tall fescue, Johnson grass, panicum, Florida paspalum, knotgrass, and rice cut-grass. In contrast, flooding kills little bluestem, blue grama, side oats grama, and sand dropseed.

Recent Research Results

★ Relatively light infestations of bollworms caused substantial reductions in cotton yields in tests conducted by the Texas Agricultural Experiment Station. When an average of only 3.6 percent of the bolls was damaged, losses of 627 pounds of seed cotton per acre occurred. When approximately 10 percent of the bolls were infested, losses amounted to more than 800 pounds of seed cotton per acre. However, there were only slight reductions in the cotton quality. The Texas A. & M. study indicates that infestations of 8 to 10 larvae per 100 plants or damaged boll counts of 3 percent or greater are sufficient to cause sizable reductions in cotton yields.

★ Castor beans fertilized with 120 pounds of nitrogen, 40 pounds of phosphorus, and 40 pounds of potassium per acre produced the highest average seed yield in tests conducted on the Texas High Plains in 1961. According to the Texas Agricultural Experiment Station, nitrogen alone or with phosphorus did not increase outturns as much as did nitrogen in combination with both phosphorus and potassium. In order to produce profitable yields, castor beans require at least 80 to 120 pounds of nitrogen with phosphorus and potassium. The Hale castor-bean variety produced higher yields and showed greater response to fertilizer than did the Dawn or Baker 296 types.

★ Studies to provide information on skip-row yields of cotton in the El Paso Valley were made by the Texas Agricultural Experiment Substation at El Paso in 1958 and 1961. Yield comparisons of inside and outside rows of 1517C cotton were made in the combination fertility-irrigation tests. The effects of nitrogen, phosphorus, and two frequencies of irrigation water on yields and earliness were evaluated. In both tests, outside cotton rows produced 500 to 700 pounds more lint per planted acre than inside rows.