IS HAND-HARVESTED COTTON JUSTIFIED?

For more than a century, cotton has been priced on grade, which includes cleanliness (or trash content), says J. M. Ward, Assistant Professor with the Department of Agricultural Economics and Sociology at the Texas Agricultural Experiment Station. In the days when all of the cotton was hand-picked, high grades resulted from picking soon after the bolls opened and before the fiber became discolored from weathering. High grades produced yarns that were superior to those processed from low grades. Low grades were associated with field damage and late harvesting.

The trend toward mechanization of cotton harvesting has been under way for some time. According to Mr. Ward, it is difficult to justify the cost of hand harvesting. Even on a custom basis, the cost of machine picking is one-fourth lower than that of hand pulling. Machine picking and hand pulling have brought about the increased use of drying and cleaning facilities in gin plants. The manner in which these facilities are used, as well as the condition of the cotton seed when ginned, determines the mill processing performance of the ginned fiber.

Machine-picked cotton often is taken to gins equipped with dryers and overhead cleaners and goes through one or more stages of lint cleaning designed to gin fiber from this type of harvest. Hand-picked cotton may also be processed through the same series of machines. The similarity in treatment has a tendency to equalize the processing performance of the two types of harvest.

The Texas Agricultural Experiment Station made a study of the processing performance of both hand-harvested and machine-picked cotton grown under similar conditions in the Upper Gulf Coast and the Brazos Valley during the 1956, 1957, and 1958 crop years. Results of the 1956 tests are not used in this report because of the difference in testing procedures. Part of the tests of cotton from this crop was processed by one laboratory; and a check lot, by another. The results indicate that the levels of performance at these laboratories were markedly different. All of the tests of the 1957 and 1958 crops were made by the same laboratory, which offered a wider range of facilities.

Deltapine is the predominant type of cotton grown in both the Upper Gulf Coast and the Brazos Valley. Machine-picked and hand-harvested cottons of similar harvest periods were sampled at the gin, and spinning performance tests were run on each bale. These tests were analyzed on the basis of fiber properties, grade index, color, percentage of picker and card waste, and average break factor and appearance index of 22s and 50s yarn.

Analysis of the quality factors of the two methods of harvesting indicated only a small quality difference. The machine-picked cotton was superior to the hand-picked fiber in several of the quality factors.

In the 1957 and 1958 studies made in both the Upper Gulf Coast and the Brazos Valley,
fiber properties were similar for the machine-picked and hand-picked cotton. Moreover, there was little difference in any of the other factors except that the machine-picked cotton was graded slightly higher than the hand-pulled lint.

After allowance for the value of the spinning waste difference, the higher-priced, high-grade cotton apparently was overvalued in comparison with the lower-grade, machine-picked fiber, according to the study. The test in the Upper Gulf Coast shows that, after allowance for the spinning waste difference, the higher-grade, lint-cleaned cotton was overvalued $4 per bale. In one study in the Brazos Valley, when allowance was made for the spinning waste difference, the higher-grade Strict Low Middling cotton was overvalued $12 per bale, and in another test the higher-grade cotton was overvalued $6 per bale.

Changes in Packers and Stockyards Act Beneficial

Recent changes in the Packers and Stockyards Act extend protection to a greater number of livestock producers, states A. B. Wooten, Extension Economist with the Texas Agricultural Extension Service.

The act sets up rules for fair business practices, providing protection for both the farmer and the consumer, as well as for the livestock-and-poultry-marketing and the meatpacking industries. Formerly, only livestock markets engaging in interstate commerce and covering 20,000 or more square feet of space came under the jurisdiction of the act. Today, livestock markets of all sizes — together with dealers and other agencies handling livestock — engaged in interstate commerce must observe the rules.

Auctions continue to be an important outlet for livestock in Texas. “Posting” these livestock auctions will mean that the operators must meet several requirements. An operator must file a bond based on the volume of business transacted during the preceding 12 months, together with a schedule of rates and charges for all services rendered by the market. The Packers and Stockyards Act requires that the rates be just, reasonable, and nondiscriminatory. An operator must register with the United States Department of Agriculture within 30 days after his market is posted.

According to Mr. Wooten, the auction operator may neither finance livestock dealers nor guarantee prices to be received for livestock. On the other hand, he may protect the shipper’s interest if reasonable bids are not received at the time of sale. The operator may not permit auctioneers, weighers, starters, or clerks to buy out of consignment for any purpose. He should solicit buyers to attend sales and should see that bidding is open and competitive.

The auction operator should always represent the best interests of shippers to the market, sell all consigned livestock without misrepresenting quality, and provide equal treatment to all shippers. He must also install, maintain, and operate scales to assure correct livestock weights; keep complete and accurate records; and maintain a sound financial status at all times.

Larger Dairy Herds Cut Labor

Dairy farming is one of the greatest labor consumers among all farm operations, states A. M. Meekma, Extension Dairy Husbandman with the Texas Agricultural Extension Service. Currently, 52 man-hours are required to produce $100 worth of products on a dairy farm, compared with 22 man-hours to produce a like amount of products from beef cattle and 13 man-hours to produce $100 worth of broilers.

A study by research economists of the United States Department of Agriculture and the University of Minnesota reveals that an average of 129 man-hours a year is required to care for a cow in a 10-cow herd, while an average of only about 80 hours per cow is needed in a 30-cow herd.

Results of the study, made in southern Minnesota, show that 23.7 man-hours weekly were required in the summer and 35.2 man-hours weekly in the winter for a 15-cow herd. For a 20-cow herd, the labor requirements were 27.9 and 41.6 man-hours weekly for the respective periods. In the summer, an extra cow above 15 required 0.83 of an hour of care each week.
Considerably over half of this time was needed for milking.

Mr. Meekma points out that the use of a milking parlor is one means of saving time. This type of operation makes possible the installation of a pipeline milker at a much lower cost than in a stanchion barn. Another opportunity to reduce labor appears to be in connection with field work in the summer. Hay balers, choppers, combines, and other mechanical equipment will speed up harvesting jobs and perform them with less labor. Mr. Meekma believes that the best method for reducing the total labor required in the winter is through the use of such labor-saving devices as silo unloaders and gutter cleaners and the storage of baled hay near the feeding racks.

The Texas dairyman should study his operations with the labor-saving objective in mind. Records can be very helpful in making such studies.

"Blast" Rice Disease

An expanded research program on the "blast" disease of rice has been announced by the Louisiana State University Rice Experiment Station at Crowley.

According to Austin T. Harrell, Superintendent of the Station, and Dr. Charles N. Bollich, USDA Agronomist at the Station, the research will be in two branches: (1) plant breeding aimed at developing rice varieties which are resistant to the disease and (2) chemical control and prevention.

The blast disease reappeared in some areas of the Louisiana rice belt in 1955 after being unimportant in this country for many years. It became more widespread in 1958 and the latter part of the current season.

Milk-Heated Barns

Enough heat can be removed from cooling 200 gallons of fresh milk each day to help heat the milkroom or to preheat 50 gallons of milkroom wash water economically, points out the United States Department of Agriculture.

A system of pumps, pipes, valves, and controls utilizes the heat given off by the condenser of the milk tank refrigeration unit to preheat water, which can be stored in the tank of a conventional electric water heater. The system utilizes heat that is normally wasted in the cooling of the milk. Heat energy equivalent to about 4,000 kilowatt-hours of electricity annually can be removed from a daily output of 200 gallons of warm milk.

The cost of the equipment needed for preheating the wash water is about $175. If room heating is desired, specialized equipment can be installed at an additional cost of $150 to $200.

Fertilizing Carrots in the Winter Garden

Nitrogen should be applied at the rate of approximately 40 pounds per acre in order to obtain maximum yields of carrots in the Winter Garden area of Texas, according to the Texas Agricultural Experiment Station.

The fertilizer should be placed in a band under the plant row so that the nutrients will be in the region where most of the feeder roots grow. The practice of drilling or broadcasting the first fertilizer treatments is not as effective as banding beneath the plant row.

The choice of a nitrogen-furnishing fertilizer for carrots will depend largely on the unit cost. Urea compounds may be applied at planting time without sacrificing yield and will save the expense of sidedressing. The response to sodium nitrate on soils in the Winter Garden area was much lower than the response to other sources of nitrogen used in tests during both 1954-55 and 1956-57.

SAFETY STARTS WITH YOU!
"Monkey-faced" Lambs

"Monkey-faced" lambs, so called because of their appearance, do not result from any simple inherited characteristic. Rather, this condition may be the result of some unknown substance eaten by ewes in early pregnancy, reports the United States Department of Agriculture.

This Cyclopean-type malformation of lambs and the prolonged gestation that sometimes accompanies it have occurred in parts of southwestern Idaho for many years. Although chemical analysis of plants, soil, and water in the region and feeding of poisonous plants to ewes at breeding time have failed to suggest a cause for the condition, the USDA scientists still believe that the deformity may be due to a toxic substance consumed by the ewe at a critical stage in the embryo's development.

The scientists ruled out inheritance as a factor when they were unable to reproduce malformations in a breeding experiment in which 48 "carrier" ewes and 12 sons of "carrier" ewes were mated.

The deformity, which is always in the lamb's head, may vary from complete Cyclops to a slightly deformed upper jaw. The lambs usually are born alive but are killed because they have difficulty in nursing.

Associated with the deformity is prolonged gestation, in which the lambs grow to excessive size before birth. They may become two to four times normal size, are always severely malformed, and may cause the death of the ewes.

New Way to Apply Legume Inoculant

A new method of applying inoculant to legume seed, a method that gives particularly good results in dry soils, consists of mixing the seed and inoculant with corn syrup or molasses instead of water, points out the United States Department of Agriculture. Farmers generally inoculate legume crops — such as alfalfa, soybeans, and clover — with nitrogen-fixing bacteria cultures in order to obtain high-protein livestock feeds and provide high-quality organic material to build up soil nutrients for future crops.

When water is used, inoculation often is not effective in dry soils because the bacteria soon die from lack of moisture. The use of syrup or molasses aids in overcoming this difficulty by helping to keep the bacteria alive in the soils for as long as 2 to 3 weeks. If rain is not received during this period, farmers should re-inoculate the soil.

Infrared Heat for Crop Drying

Most farmers and ranchers, at one time or another, have had difficulty in getting their hay or grain dry enough to store before bad weather set in. Dr. David W. Rosberg, Associate Plant Pathologist with the Texas Agricultural Experiment Station, has solved much of this problem through the use of infrared heat.

The scientist says that the potential for drying crops with infrared heat appears unlimited. The method can be used on grasses or legumes, potatoes, onions, pecans, or any other crop that needs to have surface moisture removed quickly.

Dr. Rosberg has also been successful in controlling some plant diseases and insects in early tests with infrared.

Infrared rays heat only that which they touch, making possible and practical the use of small heating units mounted on standard processing equipment, without having to heat an entire area to dry a product or to control a disease.

Tests conducted by the Texas Agricultural Experiment Station indicate that (1) the time of herbicide application, (2) the soil moisture, and (3) the soil temperature are more important influences on the control of perennial broomweed than is the type of herbicide used. For best control, the soil moisture should be 1 percent or higher, and the soil temperature should be 60° to 80° Fahrenheit for early spring spraying.

The FARM AND RANCH BULLETIN is prepared in the Research Department under the direction of J. Z. Rowe, Agricultural Economist.