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COTTON HARVESTING ON THE TEXAS HIGH PLAINS

Each year, cotton farmers are confronted with the problem of maintaining or improving the quality of their product and, at the same time, reducing production costs. Most farmers in a given region realize that their cotton must meet certain standards of fiber quality in order to compete with man-made fibers or with cotton grown in other areas. Moreover, production costs also must be considered.

According to the Texas Agricultural Experiment Station, studies have shown that harvesting with mechanical strippers is one of the best ways to lower production costs in the High Plains area of the State. On the other hand, stripping usually results in reduced fiber quality. The extent to which production costs and fiber quality are lowered by machine stripping varies greatly from year to year and from farm to farm.

Fiber quality of the shorter-stapled cotton (approximately 1 inch or less) is not affected adversely by the actual stripper harvesting operation. Acceptable fiber quality can be obtained by stripper harvesting if most of the cotton on the plant at the time of harvest is of good quality.

Since machine stripping is not a selective harvesting method and because all cotton on the plant is harvested at one time, the operation must be delayed until all bolls on the plant are open or dry. Therefore, with stripper harvesting, there is a period of waiting during which weathering occurs. In addition, fibers of more or less diverse quality are mixed or blended into one lot.

Data for the Texas A. & M. study were obtained from 10 small-plot experiments at the Lubbock station during 1952-57. Harvesting systems compared in these experiments were (1) hand snapping at the first harvest and then stripping the remaining crop and (2) stripping the entire crop in one operation. All plots received the same cultural treatments and crop management practices. Cotton used in the experiments was produced with methods adapted to harvesting with mechanical strippers.

The economic returns from the cotton were calculated on the basis of lint only. Returns from the seed were not taken into consideration, inasmuch as they represent only a small portion of the income from the crop and the harvesting method has relatively little effect on the income from seed. The Government loan rates for the Lubbock area were used in determining the lint value.

Comparisons were made of total yield, lint value per acre, and pounds of harvested cotton required for a 500-pound bale. Cotton yields were calculated from the weight of the harvested cotton and did not include cotton lost either before or during the harvesting operation. Less loss usually would be expected when the cotton is hand-snapped and then stripped than when the once-over stripper harvesting system is used. In the study, however, the losses were not consistently and substantially greater in the case of the once-over stripper harvesting

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system to result in significantly different yields from those obtained with the other system.

Although hand-snapped cotton generally had the highest gin turnout, the subsequent stripping operation required a much larger amount of seed cotton to make a 500-pound bale. Consequently, the over-all gin turnout was about the same for cotton that was hand-snapped and then stripped as for cotton that was stripped in one operation.

The harvesting system which combined hand snapping and machine stripping returned $13.39 more gross lint value per acre than the once-over stripper harvesting system. However, when the harvesting costs were deducted, the once-over stripper harvest returned a lint value of $12.95 more per acre.

The two factors which determine profit — price and production cost — may vary from year to year, and such changes may shift the advantage to one cotton harvesting system or the other. For example, the trend toward a wider spread between prices of high-grade and low-grade cotton has shifted the advantage toward hand snapping in recent years. In the case of cotton going into the Government loan program, this advantage may be counteracted by the reduction in the discount for such cotton if it includes the Light Spotted grade. Both the current market prices for cotton and the Government loan rates should be considered carefully in the selection of a cotton harvesting system.

The net return from any farming operation is largely dependent upon managerial efficiency. This fact is especially true with regard to mechanical operations. Machine stripping is more demanding on managerial skills than is harvesting with hand labor—not only in the harvesting operations but also throughout the production of the crop. The utilization of stormproof cotton varieties, relatively high planting rates, and proper cultural methods to leave the field in suitable condition for stripper operation is especially important when the stripper harvesting method is used.

Proper timing of the harvesting operation is another major factor. A drying period of 2 to 3 weeks after frost is needed to condition the cotton plants properly for stripper harvest. If harvesting is delayed further, the plants deteriorate, and the broken stems and branches gathered with the stripped cotton, together with weathering, lower fiber quality. Use of defoliants or desiccants may allow earlier stripper harvesting; however, if these chemicals are applied too early, the fiber may be damaged.

In general, the managerial practices used in the High Plains experiments were adapted to the stripper harvesting method. The Texas A. & M. study points out that other factors which are important in the selection of a cotton harvesting system are difficult to evaluate experimentally — such as the possibility of price changes, certain costs connected with the employment of hand labor, and lease or rental agreements.

Gin Yard Grouping of Cotton Profitable

The practice of ginning cotton in the order of its arrival at the gin needs to be revised because of the ever-increasing use of mechanical harvesting equipment, according to B. G. Reeves, Extension Cotton Ginning and Mechanization Specialist with the Texas Agricultural Extension Service.

Machine-harvested cotton generally has a higher moisture and trash content than hand-picked cotton, and each type requires different settings of gin machinery and drying equipment. A modern gin turns out a bale of cotton every 6 to 10 minutes; thus, there is not time to make needed adjustments on an individual-bale basis.

A number of Texas gins have followed the practice of grouping seed cotton on the gin yard according to the method of harvesting or by moisture content. This grouping practice has proved profitable to both the ginner and the grower, as the grower has received a better selling price for his cotton and the ginner has been able to do a better job of ginning. Ginning performance is best when the lint has a moisture content of 5 to 7 percent. Mr. Reeves says that drying to this level gives a smooth sample and allows proper cleaning.

He suggests that local farmers and ginners get together and work out a procedure for

grouping cotton in the gin yards. In some cases, hand-picked cotton has been ginned during the day and machine-harvested cotton has been ginned at night. Under the grouping plan, trucks and trailers usually are back in the fields as soon as they were under the old system of ginning on a first-come, first-served basis.

Livestockmen Should Prepare Now For Winter

Winter is not far away, and farmers and ranchers should make preparations now for carrying their livestock until next spring. B. J. Ragsdale and G. O. Hoffman, Extension Range Specialists with the Texas Agricultural Extension Service, offer the following suggestions for helping livestock owners prepare for the months ahead.

1. Defer using rangelands which need more and better perennial forage grasses until the end of the growing season. This deferment will insure seed production and natural revegetation, as well as increase the vigor of existing plants. Vegetation produced before frost will furnish winter forage as insurance against a hard winter.

2. Utilize grain and hay stubble fields to facilitate deferment of native rangeland. Plan for temporary winter pastures to supplement native range.

3. Maintain an intensive fall livestock selection program in order to cull low producers and lessen pressure on pasture grazing.

4. Secure hay and grain as supplemental winter feeds.

5. Continue measures for preventing and controlling range fires.

6. Plan for harvesting seed from tall perennial grasses.

Rural Zoning Need Cited

Reagan Brown, Extension Rural Sociologist with the Texas Agricultural Extension Service, believes that rural zoning would aid in more orderly planning for land use in the State. He points out that forward-thinking citizens are coming more and more to believe that difficulties will be encountered by towns or counties which leave their future to chance and fail to conserve the basic things so vital to their well-being. Communities, towns, or counties which fail to plan for the future are permitting their resources and particular advantages to be wasted, exploited, or even destroyed.

In his work with leaders of organized rural communities throughout the State, Mr. Brown has found that many communities are experiencing haphazard growth patterns. Once peaceful agricultural areas have now become hodgepodges of industrial activity. In many cases, valuable farm land is being used where less productive soil would have served the same purpose.

The sociologist believes that rural zoning can be a real help in developing rural areas in an orderly manner. At present, Texas has no rural zoning law; and before local towns or counties can pass their own zoning ordinances, the Texas Legislature must pass enabling legislation.

Low-Level Antibiotic Feeding For Dairy Cattle

In response to inquiries of Texas dairymen concerning routine low-level feeding of antibiotics to dairy herds, A. M. Meekma, Extension Dairy Husbandman with the Texas Agricultural Extension Service, points out that the Food and Drug Administration has approved the feeding of aureomycin to dairy cattle at the level of 0.1 milligram daily per pound of body weight. The clearance merely means that, if aureomycin is fed at the recommended level, no antibiotic carries through to the milk.

Recent research by the Tennessee Agricultural Experiment Station found no detrimental effects from routine low-level antibiotic feeding, but neither did the study note any advantages as far as milk production was concerned. Moreover, there were no significant differences between the antibiotic-fed animals and those not fed antibiotics in resistance to mastitis, foot rot, or other bacterial infections. Body weight changes were not affected.

Under good management conditions, feeding aureomycin to milking cows apparently

has no advantages, according to Mr. Meekma. On the contrary, the dairyman may (1) run the risk of having his milk condemned because of faulty feed mixing, (2) cause the creation of antibody-resistant disease organisms in his herd, or (3) raise his feed costs.

Recent Research Results

★ Studies at the Blackland Experiment Station at Temple, Texas, show that steers implanted with stilbestrol at the beginning of the dry-lot fattening period made slightly more gain than did those implanted prior to a 148-day pasture period and reimplanted for the dry lot. However, stilbestrol implantation, whether for pasture or for dry lot only or for both pasture and dry lot, increased gains significantly. Steers implanted only at the start of the pasture period were the most desirable in carcass grade, while those implanted only for the feed-lot period were the least desirable.

★ The United States Department of Agriculture reports that a three-way attack is being made on Halogeton, a poisonous weed which is infesting about 10.5 million acres in the semiarid West. Research is under way to (1) develop grasses and shrubs to reseed ranges after Halogeton is removed, (2) find insects that attack the weed, and (3) discover weaknesses in the weed that may offer new possibilities for control.

★ During the 1958-59 season, pre-emergence chemicals were used at Crystal City, Texas, for controlling henbit, a troublesome winter weed in many vegetables grown in the Winter Garden area. According to the Texas Agricultural Experiment Station, good weed control without crop injury was obtained with 3 pounds of EPTC per acre and 4 pounds of CDEC applied shortly after planting spinach. Similar results were obtained with 3 pounds of EPTC per acre and 6 pounds of CDEC applied soon after planting onion seedbeds. In addition, satisfactory results were obtained with 6 pounds of CIPC per acre in a spray immediately after the first irrigation of transplanted onions. Vegetable growers should limit exploratory use of these chemicals to small acreages until the safety and reliability of the treatments are more fully established.

★ In tests conducted at the Texas Agricultural Experiment Substation at McGregor, cotton lint yields during 1956-59 and stripper-harvesting characteristics obtained in 1959 recommend the planting of Lankart 57, Western Stormproof, Northern Star No. 5, and CA 119 varieties in central Texas where strippers are to be used in harvesting.

Leukosis Control

Leukosis, the Nation's number one poultry killer, can be controlled only at the two levels of production — the breeder level and the grower level, according to Dr. R. W. Moore, Assistant Professor of Veterinary Medicine with the Texas A. & M. College System. The disease cannot be controlled by the application of antibiotics to mature birds.

Leukosis is caused by a group of viruses characterized by an exceedingly long incubation period. In most cases, birds become infected during the first 5 weeks of their lives. Once a bird reaches maturity, it stands very little chance of contracting the disease.

Control of leukosis at the breeder level consists of breeding birds with as much natural resistance to the disease as possible. Although this method is not completely successful, it has been a major factor in increasing livability of laying birds. In cases where birds purchased from a reputable dealer still develop a considerable amount of leukosis, the potency of the virus usually was so great that it overcame the natural resistance of the birds.

Control of the disease at the grower level consists of isolating all young birds from mature birds. Whenever possible, young chicks should be cared for by a separate caretaker. Raising more than one group of birds on the same litter is also dangerous.

Dr. Moore points out that leukosis is very costly but, through the use of proper control methods, the poultryman can greatly reduce losses from this disease.