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More Bolls Per Stalk

One of the easiest and most profitable ways for southwestern farmers to meet the cotton production goal of 1951 is to produce more bolls per cotton plant. More bolls per stalk mean more bales per acre and larger profits per bale.

Essential steps in a program to produce more boles per stalk include planting improved cotton varieties on land adapted to cotton production, proper use of legumes and fertilizer, and—most important—carrying out an effective early season cotton insect control program. Early season control of thrips, leafhoppers, boll weevils, and other insects helps to insure the development of healthy, vigorous plants that fruit early and hold the first crop of bolls.

The accompanying photograph illustrates this point. The cotton plant on the right of the man holding the stalks is from a field that received early season applications of insecticides, while the one on his left is from a field which received no treatment for insects.

The importance of holding this early crop of bolls is emphasized by the fact that 90 percent of *all* bolls set by the plant during the entire season usually are set during the first month of bloom. If insects destroy the early bolls or stunt the growth of the plant during the first few weeks of growth, no amount of poisoning later in the season can make a full crop. But when early season insect control permits the first crop of bolls to mature, continued applications throughout the season can be profitable. For example, the Texas Agricultural Experiment Station found that in 1950, even though continued insect infestations caused by migrations from untreated fields required as many as 12 applications of insecticides, the net profit was $91 per acre more than on untreated fields.

These facts present a strong case for following a rigid early season cotton insect control program in 1951. Many farmers proved the value of such a program to their own satisfaction during the very bad cotton insect

K. P. Ewing, entomologist, U. S. Bureau of Entomology and Plant Quarantine, Waco, Texas, compares a typical plant from an early season treated plot (on his right) with a plant from an untreated plot. Early season treatment resulted in the crop maturing 2 to 3 weeks earlier and with twice as many bolls per plant. Increased profit per acre, $78.

year of 1950 by harvesting a bumper crop while their neighbors harvested very little cotton because of extensive insect damage.

The program was even more successful when practiced on a community-wide basis. Several entire communities in Texas which carried out the recommended control program in 1950 had average increases in yield of lint over untreated fields of 213 pounds per acre and an estimated average increase in net profit per acre of $78.

The cotton insect control program can be divided into three phases: (1) early season control, (2) late-season control, and (3) early stalk destruction and farm clean-up.

Early Season Control

Details of the early season insect control program are given in publications by state experiment stations and can be obtained from county agricultural agents. In general, the program calls for from two to four applications of insecticides at 7-day intervals, with the first application usually made when the cotton is in the 4-leaf stage. In some cases, earlier applications may be needed to prevent loss of stand by thrips, aphids, cutworms, or army worms.

A second important point in the early season program is that the last application should be made at least 30 days before the bollworm usually appears. Discontinuing applications at that time permits beneficial insects to build up in sufficient numbers to give some protection against bollworms.

As mentioned earlier, individual farms receive considerable benefit from early season control measures, but this program is most effective when practiced on a community- or county-wide basis. Such action is particularly beneficial, since it kills off larger numbers of the first generation of boll weevils and prevents the migration of all insects from untreated fields to treated areas; the larger the area treated, the greater the benefits.

Late-Season Control

Late-season applications of insecticides should be made according to the severity of infestation. Any time that the number of insects and amount of injury to plants become dangerous, application should be made whether or not early season control measures were followed. Specific information regarding rates of application and insecticides for late-season control is given in *Guides for Controlling Cotton Insects in Texas, 1951,* Bulletin C-182; *Cotton Insect Control,* Arizona, Bulletin C-179; and similar publications from other states. Copies of these bulletins are available from county agricultural agents.

The Texas Extension Service emphasizes the importance of making late-season applications at 5-day intervals. It is pointed out that a cotton plant normally grows from 1 to 1½ inches per day; thus, in 5 days from 5 to 7 inches of new growth have been produced which, of course, are not covered with insecticide. This new growth is particularly attractive to the cotton insects.

It is important to remember that if adequate early season control measures have been taken, the need for late-season control is materially reduced. This is especially true if the early season program has been conducted on a community-wide basis. Killing the first generations reduces subsequent numbers of insects, permits the development of healthy, vigorous plants better able to withstand insect damage, and permits the development of the crop from 2 to 3 weeks earlier, which in many cases brings maturity ahead of late-season damage. Moreover, the amount of insecticide needed per acre increases materially as the size of plant increases and, thus, the cost of late-season control is much higher.

Early Stalk Destruction

It may seem early to talk about stalk destruction for the 1951 crop, but the effectiveness of this control measure is, in part, dependent upon action taken this spring. Planting the crop early and controlling insects throughout the growing season permit earlier maturity and harvest and, thus, enable

growers to destroy and plow under stalks earlier in the fall. The early plow-up of stalks prevents the building up of cotton insects late in the season and reduces the number that will survive the following winter.

Sprays are becoming more popular with farmers because they permit *timely* application of insecticides—so essential for effective insect control—while applications of dust are frequently delayed for days or weeks by unfavorable weather.

The importance of the insect control program in meeting the cotton production goal for 1951 cannot be overemphasized. It is estimated that in 1950 cotton insects caused a reduction in yield of 11 percent in Texas, 18.5 percent in Louisiana, and 17 percent in Oklahoma. In Arizona and New Mexico the losses were very small, but total value of the loss for the five states is estimated at nearly $160,000,000.

Some growers may feel that insects will not be as much of a threat in 1951 because of the severe weather during the past winter. However, examination of surface ground trash at Tallulah, Louisiana, at mid-February showed 91 percent of all boll weevils found to be alive; and according to Rudolph G. Strong, assistant entomologist of Louisiana State University, there are indications that as many boll weevils may be present this year as in 1950, and perhaps more.

Long-Staple Cottonseed to be Purchased

Plans for purchasing up to 5,000 tons of registered and certified cottonseed from the 1951-crop of Amsak and Pima 32 varieties of American-Egyptian cotton are being developed by the Commodity Credit Corporation, according to a recent announcement by Secretary of Agriculture Brannan. This program is being undertaken in accordance with a request by the Munitions Board to assure production of sufficient extra-long-staple cotton to fill military and essential civilian requirements in an emergency.

Test Irish Seed Potatoes for Freeze Damage

Irish potatoes should be tested for freeze damage before planting, according to Louisiana State University specialists. Potatoes that were not properly protected during the recent cold weather may not be suitable for planting.

The test recommended consists of warming the potatoes to room temperature (about 70° F.) and then cutting them in half. If the cut surface turns pink in color within 15 to 30 minutes, the tubers have been seriously injured and are not suitable for planting. The specialists point out that some of the seed potatoes may be found to have a pinkish-purple coloring when they are cut open. This is not the result of freeze damage and is not believed to be a sign of damage to the potato. The freeze damage will show up only after the cut surface of the seed has been exposed to the air at least 15 minutes.

Unless they have been severely damaged, Irish potatoes affected by the cold may be quite suitable for eating, even though they will not sprout and, thus, are not suitable for planting.

Approximately 90 percent of all the farms and ranches in Texas now have central station electric service. Experts say that there are 250 profitable ways for using electricity on the farm.

Anhydrous Ammonia Fertilizer Tests

A series of anhydrous ammonia fertilizer tests were made at the Texas Agricultural Experiment Station's Bluebonnet Farm in central Texas in 1950. The tests covered most of the important money crops grown on the Grand Prairie soils of central Texas and were designed to test the value of anhydrous ammonia, a relatively new and comparatively cheap form of nitrogen fertilizer.

In all of the tests, fertilizer was applied as a sidedressing and at rates varying from 20 to

80 pounds of nitrogen per acre; in the case of corn, an application rate of 100 pounds per acre also was tested.

The following results were obtained during this first year of experiments:

Cotton—Increases in yield were sufficient to more than pay the cost of the fertilizer at all rates of application tested. The increase from 60 to 80 pounds of nitrogen per acre gave the most significant increase in yield, amounting to 99 pounds of seed cotton per acre. Increases in yield between no fertilizer and 20, 40, and 60 pounds of nitrogen per acre were relatively small. Fertilizer was applied to cotton in early June as a sidedressing, and moisture conditions during the season were favorable for maximum utilization of fertilizer.

Corn—Increases in corn yields were not sufficient to pay for the cost of the fertilizer at any of the rates used in the tests.

Sorghum for grain—Application at the rate of 20 pounds of nitrogen per acre gave a very profitable gain in yield—532 pounds of grain—but heavier applications of nitrogen were not profitable.

Broadcast sorghum for hay—This test was made on broadcast Hegari planted for hay. Application of the anhydrous ammonia was made in early June, when the plants were approximately 6 inches high. Applications of 20, 40, and 60 pounds of nitrogen per acre increased the tonnage of hay sufficiently to offset the cost of fertilizer. The most significant increase in returns above the cost of fertilizer, $18.60 per acre, was on the plot receiving 20 pounds of nitrogen per acre.

More Good Roughage for Dairy Cows

Dairy farmers throughout the United States could maintain the present level of milk production and also produce the milk at lower cost by feeding their cows more high-quality roughage and less grain, according to Dr. Ralph E. Hodgson of the United States Department of Agriculture.

Throughout the Nation the average dairy cow gets enough nutrients from roughage for body maintenance and for about 33 percent of her milk production, according to Dr. Hodgson's calculations. In the 14 southern states, however, the average cow gets only enough forage nutrients for 10 percent of her milk production in addition to her maintenance. Dr. Hodgson called attention to the fact that roughages can be produced cheaper than grains and, also, that more total digestible nutrients would be available for winter feeding on southern dairy farms if better methods were used in preserving forage crops.

Cotton farmers are reminded that treating planting seed will aid in securing a better stand and will also help control angular leafspot and soreshin.

Treat Early for Hornflies

Tests have shown that control of hornflies on cattle increases gains from 10 to 20 pounds per month, according to James A. Deer, assistant extension entomologist of Texas A. & M. College.

These tiny, grayish-black flies will begin to bother cattle in the next few weeks, and since they multiply very rapidly, early application of control measures is essential. Spraying or dipping with an 0.5-percent DDT solution made by adding 8 pounds of 50-percent wettable DDT to 100 gallons of water or spraying with an 0.5-percent toxaphene solution made by adding 10 pounds of wettable toxaphene to 100 gallons of water will protect cattle for a period of 20 to 45 days. The first application should be made when the hornfly population reaches about 25 flies per animal. If the first spraying or dipping is done early and thoroughly, the number needed during the summer may be reduced greatly.

The *Agricultural News Letter* is prepared in the Research Department under the direction of CARL H. MOORE, Agricultural Economist.