

FARM AND RANCH BULLETIN

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COTTON BURS IMPROVE PRODUCTIVITY OF IRRIGATED LAND

The use of cotton burs, or gin waste, on the farm has resulted in higher lint yields, increased efficiency of water utilization in crop production, and reduced losses from gin yard fires, say Harvey J. Walker and John Box, Assistant Agronomists with the Lubbock Agricultural Experiment Substation and the Texas Agricultural Extension Service, respectively.

The average annual production of 1.5 million bales of lint on 2 million acres of cotton on the South Texas Plains would yield approximately 375,000 tons of burs. This quantity of burs would provide an application of 4 tons per acre for 93,750 acres, or about 5 percent of the total acreage.

Experiments with cotton burs were conducted at the Lubbock substation during a 6-year period (1953-58) to determine their value in irrigated cotton production. Soils at the test locations are the Portales and Mansker series, which have a fine sandy loam texture. These soils tend to be shallow and range in depth from 18 to 30 inches over caliche, which is high in calcium carbonate. Rates of water intake, penetration, and drainage on these soils are excellent. Water erosion is not serious, because of the high water intake rate and slight slope. However, these soils are susceptible to wind erosion, especially if they are improperly managed.

For the Lubbock experiment, cotton burs were obtained from a nearby commercial gin. They were hauled from the gin in November and December, piled on the ground, and then spread on test plots the following January. A

farm manure spreader, calibrated for the desired rates, was used to apply the burs.

The study shows that burs applied annually increased the lint yield of cotton 36 pounds per ton of burs used. The greatest lint yield increases were obtained during the last 4 years of the 6-year test period. Following three annual applications of cotton burs on the same location, increased lint yields were obtained during the next 3 years without using burs. The residual effect of the burs in the first 3 years increased yields in the last 3 years by almost as much as in tests where burs were applied throughout the 6-year period.

Messrs. Walker and Box recommend the addition of 12 to 15 pounds of nitrogen for each ton of burs applied during the first 2 years. This amount provides sufficient nitrogen for plant growth, as well as for the microorganisms involved in the decomposition of the burs.

The experiments with burs and nitrogen fertilizer show that lint yields can be increased and maintained in a farming operation with the following schedule: In both the first and second years, apply burs plus 12 to 15 pounds of nitrogen per ton of burs used. In the third year, apply only burs. During the fourth, fifth, and sixth years, neither nitrogen nor burs need to be applied. This schedule should be repeated, beginning with the seventh year. These recommendations are not intended to replace any other adequate program with which yields are increased and maintained but are suggested for those farmers who use cotton burs on their land, according to Messrs. Walker and Box.

The Lubbock experiments also show that —

- After the cotton burs were applied, the method of land preparation had little effect on the benefits obtained from the burs.
- The use of the burs did not significantly affect the pH of the soil.
- The organic matter content of the soil was not increased appreciably with annual applications of 2, 4, or 6 tons of burs per acre during 1953-58.
- The phosphorus content of the soil apparently was increased slightly at the 6- to 12-inch depth with bur applications.
- The potassium content of the soil was high on both untreated and treated land at the beginning and end of the test period.

Building Plans Available From County Agents

Farmers who are planning new construction may profit by checking with their local county agricultural agents, according to W. S. Allen, Agricultural Engineer with the Texas Agricultural Extension Service. County agents can furnish information about the farm building service plan that is available from Texas A. & M. College.

The building plans are for typical farm service structures and homes that are recommended for many different farm situations throughout Texas. The plans were developed over a period of many years, on the basis of research and field experience.

Agricultural engineers at Texas A. & M. College point out that a farmer usually builds no more than one building of a particular type during his lifetime. Consequently, reliable information is necessary to help him plan and construct the most suitable structure for any one specific purpose.

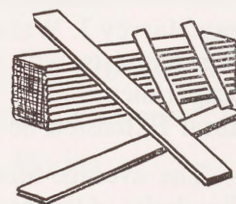
When selecting plans, the entire farm operation and the probable use of other buildings must be taken into consideration. Any building that does not permit the best use of labor and equipment or that is not suitable for its purpose

should be remodeled, according to Mr. Allen. When planning for a new building, consideration should be given to the flexibility and possible future needs of the structure. The agricultural engineer recommends visits to other farms where similar buildings are in use.

A catalog of over 500 building and equipment plans is available from the local county agricultural agent. The agent can assist the farmer in selecting the plan that will most nearly fit his needs. Farm building plans may be obtained, free of charge, from the office of the local county agricultural agent.

Useful Life of Wood Can Be Prolonged

Deterioration of exterior woodwork on buildings can be reduced by treating the wood with water-repellant preservatives, according to Bill Smith, Forester with the



Texas Agricultural Extension Service. Long-time tests show that surface treatments give worthwhile protection to wooden siding, steps, porches, exterior trim shutters, and other items exposed to rain seepage.

Studies begun in 1941 by the Southern Forest Experiment Station have shown that southern pine exterior woodwork treated with pentachlorophenol and a water repellent lasted at least four times as long as untreated material. Some of the treated material is still in use after 20 years.

For the tests, the wood was treated either by complete immersion in the liquid for periods of 3 to 60 minutes or by two brush applications at room temperature. The soaking procedure proved the better method, although the brush treatment was also effective.

According to Mr. Smith, home builders, repairmen, and others can treat the wood themselves. A tank or drum can be used for soaking or dipping the wood, or the material can be set on sawhorses for brush treatment. Each piece of wood should be cut to the correct size before treating. Any cuts made after the wood has been

treated should also be treated. Care should be taken to prevent spilling or dripping the preservative on the skin, clothing, or plants.

The forester also points out that an oil paint finish after wood treatment adds to the service life of exterior woodwork. When wood is to be painted, mineral spirits should be used as the carrier liquid with the pentachlorophenol and water repellent.

Concentrated pentachlorophenol is available from many chemical concerns and building supply houses. This concentrated product may be mixed with fuel oil, kerosene, or mineral spirits.

"Lepto" Is Costly

Leptospirosis is estimated to cost the Nation's cattle raisers \$112 million annually in unrealized income. In addition, the disease causes heavy losses in swine, according to the Louisiana Agricultural Extension Service. Human cases of "lepto" have been reported in widely scattered parts of the United States. Some of these have been caused by swimming in contaminated ponds and streams.

Danger signs of leptospirosis may resemble those of several other diseases. Therefore, livestock producers should have a veterinarian diagnose cases where animals have such symptoms as loss of appetite, breathing difficulty, a decrease in milk production, abortions, scouring, or jaundice.

The most satisfactory method of preventing lepto losses is to vaccinate livestock against the disease. Other measures include protecting feed and water facilities so that they cannot become contaminated by diseased stock; keeping animals away from low, wet pastures, ponds, and slow-moving streams; and having replacement stock blood-tested and isolated in order to protect the home herd.

Americans Eat More Vegetables Today

Americans today eat more vegetables per person than their grandparents did 50 years ago, points out the United States Department of Agriculture. Per capita vegetable consumption is about 15 percent greater today than it

was 50 years ago. There has been a decrease in consumption of fresh vegetables during the past half century, but this has been offset by a marked gain in consumption of processed vegetables.

According to the USDA, city householders consume more vegetables than do rural dwellers, although the difference is narrowing. Groups with high incomes are larger consumers of vegetables than those with lower incomes.

Per capita consumption of Irish potatoes, sweet potatoes, and dry beans and peas is substantially less today than it was a half century ago. On the other hand, increased use of Irish potatoes and sweet potatoes in various processed forms has halted the decline in consumption of these products in recent years.

According to the USDA, indications are that per capita consumption of potatoes and other vegetables may not change significantly during the next 10 years, although further shifts to processed forms are in prospect.

Rat-Killing Season Is Here!



Fall is rat control season, according to the Texas Agricultural Extension Service. During the summer months, the rat population is not as noticeable, since the rodents stay in fields near their food supplies. The pests also stay close to food supplies in the fall, but since the food has been moved into barns and cribs, the rat and mouse population is concentrated around the farmstead.

Although this concentration presents quite a problem to the farmer, it affords him the best opportunity for controlling these pests, say rodent control specialists with the United States Fish and Wildlife Service.

Sanitation is the first requirement for an effective rat control program. All debris, loose grain, and any other sources of shelter or food should be removed from the premises. Poison baits should then be placed in all areas which are likely to be frequented by rats or mice. Anti-coagulant-type poisons are especially recommended by the specialists.

Once the rodent population is under control, reinfestation can be prevented by continued sanitation measures and the use of a few poison baits. Occasional checks should be made to see that the baits are still in place.

This type of rodent control is effective on an individual farm basis, but much better results are obtained when the program is employed by every farmer in the neighborhood. Local county agricultural agents can be very helpful in organizing county-wide rodent control programs.

Pond Weeds Can Be Controlled

Pond weeds have ruined many good fishing spots, says Ed Cooper, Wildlife Specialist with the Texas Agricultural Extension Service. Although heavy weed growths can cause real problems, there are methods for solving them.

Careful planning before building a farm pond can help prevent the growth of annoying weeds. Large areas of shallow water should be avoided, since weeds frequently become troublesome where water is about 3 feet deep or less. Deeper water reduces the amount of sunlight penetration, thereby helping to prevent excessive plant growth.

Weeds growing beneath the water surface often can be controlled by the use of fertilizers. The fertilizer acts as a stimulant for the growth of microscopic plant and animal life which, in turn, reduces sunlight penetration. Fertilization is also helpful to the fish because they benefit from the increased food production.

Undesirable weeds often can be removed mechanically by cutting, pulling, raking, or other inexpensive methods. The weeds should be removed before they become too well established.

In recent years, chemicals have been developed for controlling many types of pond weeds. When used properly, they can be both effective and safe. On the other hand, improper use of chemicals can be dangerous to fish, wild animals, livestock, and human beings.

According to Mr. Cooper, the troublesome weed must first be identified, since there is no single chemical that is safe and effective for the

control of all pond weeds. For effective chemical control, the manufacturer's instructions should be followed carefully. Moreover, the right chemical should be applied at the correct stage of plant growth.



Publications

Oklahoma Agricultural Experiment Station,
Stillwater:

Rental Agreements and Resource Contributions on Irrigation Leases in Caddo County, Oklahoma, Bulletin B-558, by K. C. Davis and Harold Liles.

Economic Aspects of Intensive Hog Production Systems in Oklahoma, Bulletin B-560, by James S. Plaxico.

Woodward Sand Bluestem: Origin, Description, and Adaptation, Bulletin B-561, by Jack R. Harlan and William R. Kneebone.

Production and Income Variability of Alternative Farm Enterprises in Northwest Oklahoma, Bulletin B-563, by Robert W. Greve, James S. Plaxico, and William F. Lagrone.

A Statistical Analysis of the Relationship of Governmental Control Programs and Cotton Acreage in Southwestern Oklahoma, Bulletin B-564, by Leo V. Blakley and Roger P. Hill.

Effect of Fertilization and Lime on Yields of Alfalfa and of Crops Grown with It in an Eight-year Rotation, Bulletin B-565, by Horace J. Harper.

Effect of Marketing Services on Costs and Returns to Oklahoma Egg Producers, Bulletin B-572, by Bruce Hottel and K. C. Davis.

Dairy Farm Organization in Central and Northeast Oklahoma, Bulletin B-573, by Clark Edwards and H. W. Grubb.

Copies of these bulletins may be obtained by request to the experiment station.