AGRICULTURAL NEWS LETTER

THE FEDERAL RESERVE BANK OF DALLAS

Volume IV | Dallas, Texas, September 15, 1949 | Number 9

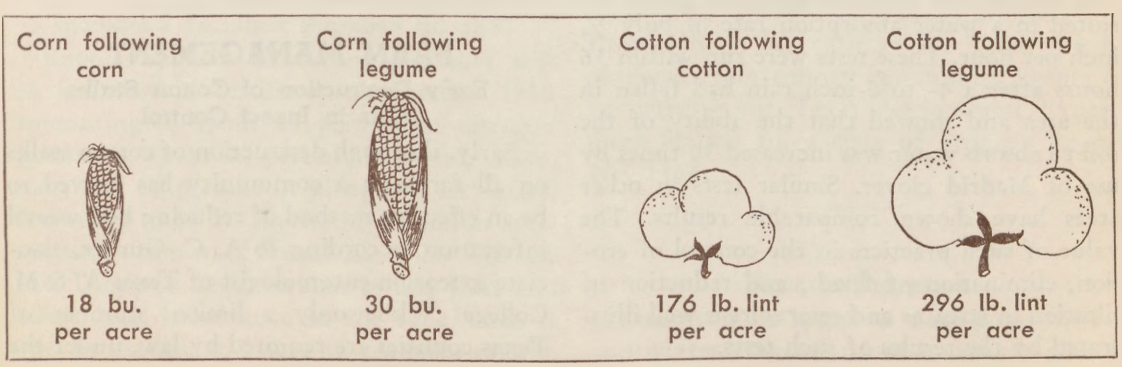
LEGUMES INCREASE FARM INCOME

Legumes, such as Hubam and Madrid clover, alfalfa, hairy vetch, and singletary peas, increase farm income through higher yields of cotton, corn, grain sorghums, wheat, and other crops by building soil fertility and aiding in the control of erosion. They are also valuable as cash crops when harvested for seed or hay. A striking illustration of increased cotton yields resulting from the use of Hubam clover is found in a 3-year experiment at the Texas A. & M. Experiment Station at Temple, where the use of this legume increased cotton yields more than 100 percent. This higher yield meant an increase in income per acre of nearly $40 on the basis of 10-year average prices of cotton and cottonseed. Use of Hubam clover in the rotation also reduced materially the amount of root rot infestation. In the check plot where cotton was grown continuously, nearly 40 percent of the cotton plants were dead by early September, while in the field where a rotation of cotton and Hubam clover was followed, less than 4 percent of the plants were dead by early September. An average of 352 pounds per acre of Hubam clover seed, valued at about $35, was harvested annually, further increasing farm income.

Results similar to those experienced at the Temple station have been obtained in many areas throughout Texas, but more typical yield increases for cotton and corn are illustrated below.

In the Wichita irrigated valley in north Texas, results of a 12-year experiment showed that the addition of alfalfa to the rotation increased the gross income $23.04 per acre per year, based on 1947 farm prices. A 4-year rotation, including alfalfa as a legume for two years followed by one year of cotton and one year of feterita, produced an average annual return per acre of $92.04, while a rotation of cotton, oats, and feterita yielded an average annual return of only $58.68.

Results of experiments at College Station, Nacogdoches, and Tyler indicate that plowing under vetch and other legumes increased the yield of cotton 40 to 60 percent. These increases in cotton yields gave a return of $1.50 to $3.00 for each dollar spent for vetch seed and fertilizer for the vetch crop. The use of Austrian winter peas on a blackland farm near Lancaster, Texas, increased the yield of cotton 40 percent, and at Grapevine, Texas,



the use of vetch as a legume in a rotation with corn increased corn yields as much as 200 percent. Similar results have been obtained by hundreds of Texas farmers.

Use of legumes increases soil fertility and reduces erosion, thereby increasing the potential earning capacity of the farm, as well as present income. Legumes, when properly inoculated, have the ability to extract nitrogen from the air and store it in the soil in a form that can be utilized by other plants. Thus when a legume crop is plowed under, it adds not only valuable humus to the soil but also large quantities of nitrogen. It has been estimated that the amount of nitrogen added to the soil by plowing under a vetch crop—including the nitrogen in the plant, as well as that taken from the air and stored in the soil —may be as high as 90 pounds per acre. At present fertilizer prices, this would be the equivalent of commercial nitrogen fertilizer costing about $25.

The increased amount of organic matter returned to the soil by legumes, plus the fact that their roots penetrate several feet into the ground, breaking up hard pans and loosening the soil, increases the water-holding capacity and reduces runoff. In tests conducted by the Soil Conservation Service in Tarrant County, it was found that on a field which had been sown to Madrid clover for two years and on which there was a volunteer stand of Madrid clover at the time of the test the soil absorbed water at the rate of 7½ inches per hour. In contrast to this high rate of infiltration, a test on a part of the same field which was in Sudan grass (oats had been grown on this side of the field the previous year) resulted in a water absorption rate of only ¼ inch per hour. These tests were run within 36 hours after a 4- to 6-inch rain had fallen in the area and showed that the ability of the soil to absorb water was increased 30 times by use of Madrid clover. Similar tests in other areas have shown comparable results. The value of such practices in the control of erosion, elimination of floods, and reduction of siltation in streams and reservoirs is well illustrated by the results of such tests.

Maximum benefit from use of legumes as soil-building crops, as well as higher yields of legume seed and hay, has been obtained when fertilizer was applied liberally. Apparently the legume facilitates the use of fertilizers by subsequent crops by making the plant food more available. A Freestone County, Texas, farmer harvested about 300 pounds of vetch seed per acre from the field that received an application of 200 pounds of 20-percent superphosphate per acre and reported that the field which received no fertilizer did not produce enough seed to harvest. At Nacogdoches the application of 400 pounds of 4-8-4 fertilizer per acre to the vetch crop increased cotton yields the following year 20-percent more than unfertilized vetch.

Legumes should be planted in the fall for best results, except sweet clovers (Hubam, Melilotus indica, Madrid, or other biannuals), which should be sown in the late winter or spring. They are usually planted following cotton or corn and, therefore, serve as a winter cover crop. The spring-seeded clovers are usually overseeded on small grains.

It is important that the legume chosen for use in the rotation be one that is adapted to the soil and climatic conditions of the community. Considerable study has been devoted to this problem, and representatives of several agencies interested in improving Texas agriculture have prepared a map showing the areas adapted to the various legumes. On the reverse side of the map is shown the time of planting, rate of seeding, and fertilizer recommendations. Copies of this map may be obtained by writing the Research Department of the Federal Reserve Bank of Dallas or county agricultural agents.

FARM MANAGEMENT

Early Destruction of Cotton Stalks Aids in Insect Control

Early, thorough destruction of cotton stalks on all farms in a community has proved to be an effective method of reducing boll weevil infestation, according to A. C. Gunter, associate extension entomologist of Texas A. & M. College. While only a limited number of Texas counties are required by law, under the

pink bollworm control program, to destroy cotton stalks immediately following cotton harvest, the results of stalk destruction, wherever practiced, have demonstrated that it reduces boll weevil infestation materially the following year. For example, in 1947 in Williamson County, Texas, destruction of cotton stalks was completed immediately following harvest under an organized program participated in by most farmers of the County. Surrounding counties had no such program of stalk destruction. The following year field surveys revealed that Williamson County farmers had an average of less than 10 percent punctured squares in their cotton fields, while cotton fields in surrounding counties had an average of 30 to 40 percent punctured squares. Lower Rio Grande Valley farmers estimate that their early clean-up program, followed on a community-wide basis in connection with pink bollworm control, results in an average increase of one-fourth bale per acre. Mr. Gunter says that plowing under cotton stalks early—not later than the first frost—is the most dependable method of controlling boll weevils.

Stalks should be cut low and into small pieces to facilitate working them into the soil, thus adding valuable organic matter to the land. Plowing the stalks under early in the fall permits the plant food contained in this organic matter to be made available for a crop the following season. Furthermore, early destruction of cotton stalks facilitates the seeding of a legume or small grain crop, which will conserve soil and water and add further to the plant food available for subsequent crops.

Increased Fertilizer Supplies for 1950

Reports indicate that there probably will be increases in fertilizer supplies for 1950 amounting to about 25 percent in nitrogen fertilizers, 10 to 12 percent in potash materials, and 15 percent in phosphate fertilizers, according to M. K. Thornton, extension agricultural chemist of Texas A. & M. College. Mr. Thornton urges farmers to buy their fertilizer well in advance of the time when it will be needed, to insure an adequate supply.

Recommended Oat Varieties for Texas

Strains of red oats or improved varieties derived from crosses of red oats are generally satisfactory for Texas farmers, according to Dr. J. E. Adams, head of the Department of Agronomy of Texas A. & M. College. The Red Rustproof group is the most widely adapted, while the early maturing Fulghum varieties can be used for spring seeding in certain areas.

In the Red Rustproof group, which are moderately hardy and suitable for either fall or spring seeding over most of Texas, New Nortex and Ferguson 922 are generally recommended for northcentral and Rolling Plains areas. Ranger, Rustler, Alber, and Camellia are rust-resistant varieties adapted to south Texas. They are lacking in cold-resistance and should not be grown north of Austin.

Stanton, a yellow grain variety, is more winter hardy than New Nortex and is also resistant to leaf rust but is susceptible to Helminthosporium blight. This variety has given satisfactory yields in the northcentral and Low Rolling Plains areas.

In the early maturing Fulghum group of oats, Fultex, a leaf rust-resistant variety especially suited for combine harvesting, produces grain of high test weight and is well adapted to fall or winter seeding in the Plains area and for spring seeding in northcentral Texas. Victorgrain, a variety similar to Fultex, has not yielded as well under Texas conditions.

Wintok, Fulwin, and Tennex are the most winter-hardy varieties of oats but because of their high susceptibility to rusts are not well adapted to Texas conditions. Additional information on oat varieties for Texas can be obtained from county agricultural agents or by writing the Texas Agricultural Experiment Station for a copy of Progress Report No. 1164.

Hints to Dairymen

Dairymen are urged to make plans for fall and winter grazing and, if necessary, plan to

supplement pastures with plenty of high-quality hay and silage. R. E. Burleson, associate extension dairy husbandman of Texas A. & M. College, says that small grains make excellent fall and winter grazing. He recommends at least one acre of this pasture for each cow in the herd.

LIVESTOCK DISEASES

Hog Cholera Still a Menace

Hog cholera continues to take a heavy death toll of swine on southwestern farms, although the use of a strict sanitation program and vaccinations can provide complete control of this menace to the swine producer. Outbreaks of the disease have occurred in recent months, indicating that many farmers are not taking the necessary precautions to prevent infection of their hogs.

Vaccination when properly administered by a trained veterinarian is effective in preventing hog cholera. There is no cure once the disease has attacked the animals, and farmers are urged to consult their local veterinarian or county agricultural agent for details of a successful vaccination program.

Report on Control of Foot and Mouth Disease

The Mexican-United States Commission for the eradication of foot and mouth disease has announced the completion of the first vaccination of all susceptible animals in the quarantine zone of Mexico. This is considered a major accomplishment in the program to eradicate the disease from the area. To reach this milestone, Commission technicians vaccinated 13,071,533 cattle, sheep, goats, and swine. The quarantine zone comprises more than 200,000 square miles. A second round of vaccination has covered about 55 percent of the quarantined zone in recent months. A third vaccination is starting four months after the second, as experience and testing have shown that the Mexican vaccine gives immunity for about that length of time.

FARM PRICES

Cottonseed Price Reports Available

Texas cotton growers are urged to make use of free cottonseed market news reports issued by the Production and Marketing Administration, United States Department of Agriculture, Dallas, Texas. These reports provide growers with an accurate indication of current cottonseed prices, enabling them to keep in closer touch with market prices for this important commodity.

The cottonseed report may be obtained by writing local United States Department of Agriculture cotton classing offices or Mr. John McCollum at 1104 South Ervay Street, Dallas 1, Texas.

American-Egyptian Cotton Loan Rates

Loan rates on 1949-crop American-Egyptian cotton with staple length of 1 3/8 inches or longer have been announced by the United States Department of Agriculture. The rates are based on grade No. 2, 1½ inches, and are 58.1 cents per pound, net weight, in the New Mexico-West Texas area and 57.85 cents per pound, net weight, in the Arizona-California area.

ANNOUNCEMENTS

The 1949 State Fair of Texas will be held in Dallas, October 8-23. Over $65,000 in premiums will be awarded livestock exhibitors, and most of the livestock breeding associations have scheduled sales for the fair, according to Ray Wilson, livestock manager.

Publications

Texas Agricultural Experiment Station, College Station:

Wheat Varieties for the Texas Panhandle, Progress Report 1170, by Kenneth B. Porter and Charles J. Whitfield.

Clovers for Texas Pastures, Bulletin No. B-168, by R. R. Lancaster.

Grain Storage for Texas, Bulletin No. C-266, by W. S. Allen.

Cotton Defoliation Tests in the Lower Rio Grande Valley, Progress Report 1179, by J. S. Morris and W. R. Cowley.

Copies of these publications may be secured by request to the publisher.