

Agricultural

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Legumes for Higher Profits

Fertilized legumes are the backbone of any improved farm program in the Southwest. They add humus to the soil, break up plow sole, increase the water-absorbing capacity of the soil, reduce runoff, and thereby increase yields and profits. Biennial or perennial legumes are the most beneficial because they are deeper rooted and add more organic matter to the soil, but winter legumes and other annuals should be used when the longer-growing varieties cannot be fitted into the crop rotation.

Southwestern farmers face a difficult schedule this year in maintaining their program of planting legumes following cotton. The large cotton acreage, lateness of the crop, the probable shortage of labor for harvesting, and the inadequate supply of fertilizer are major obstacles in this year's campaign to clean up cotton fields, plow under stalks, and seed legumes before frost.

Nevertheless, the need for soil-conserving and soil-building legumes will be especially urgent this fall and winter. The acreage of row crops—cotton, corn, and sorghums—is

larger than usual; thus, more land is susceptible to erosion and depletion of organic matter and soil fertility. Extensive use of winter legumes is essential if profitable yields are to be obtained next year.

Sweet clovers, including Hubam, Madrid, and Evergreen, are excellent legumes for most areas of the Southwest except the lighter soils of east Texas and Louisiana, where Crimson clover is suggested. Singletary peas are also adapted to the eastern areas of the Southwest, while Austrian winter peas can be grown in central and western regions. Hairy vetch is adapted to a wide area and is recommended for most counties. Alfalfa, a perennial, is excellent for west Texas, especially under irrigation.

Agricultural leaders and specialists in Texas have prepared a map of the State showing recommended legumes, rates and dates of planting, and suggested fertilizer applications for each county. Copies of this map have been mailed to bankers, ginners, and seed and fertilizer dealers throughout the State and are also available from county

Corn following
corn



18 bu.
per acre

Corn following
legume



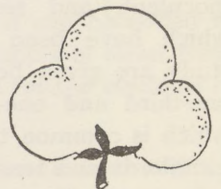
30 bu.
per acre

Cotton following
cotton



176 lb. lint
per acre

Cotton following
legume



296 lb. lint
per acre

agricultural agents. Other southwestern states have similar recommendations, which can be obtained from county agricultural agents.

All legume seeds should be inoculated before planting, to insure the presence of nitrogen-fixing bacteria. These organisms enable the legume plant to convert free nitrogen of the air into a form available to plants. Without this process, much of the value of legumes as a soil builder is lost. Moreover, many seedlings may die for lack of nitrogen if they cannot manufacture their own supply from the air.

Legumes should be planted as soon as possible after cotton harvest. Early seeding permits maximum plant growth, thus adding more organic matter to the soil and giving more effective protection from wind and rain. It is important that farmers place their orders now for legume seeds and fertilizers, to insure an adequate supply at planting time. All fertilizers are critically short, and if not already purchased, orders should be placed now. The supply of most legume seeds is expected to be sufficient to meet the demand, but local shortages may occur if farmers wait until fall to order.

Sharing the Cost of Legumes

A major obstacle to the seeding of legumes on many tenant-operated farms is the failure of the landlord and tenant to work out satisfactory arrangements for sharing the cost of seed and fertilizer.

In order to assist landlords and tenants who are anxious to work out a mutually beneficial legume program, Texas A. and M. College has given considerable study to an equitable division of the cost of legume seed, inoculant, and fertilizer. The suggestions which have been developed through this study are given below and are based on a one-third and one-fourth rental agreement, which is common throughout the Southwest. Landlords and tenants may not want to follow exactly this pattern of sharing the costs, but the suggestions should furnish a basis for arriving at a satisfactory agreement.

1. When the farm is operated under a 1-year rental agreement and payments are received from the Production and Marketing Administration for seeding of legumes and application of phosphate, it is suggested that the landlord pay all of the cost not covered by the PMA payments. If no PMA payments are received, it is suggested that the landlord pay two-thirds of the cost and the tenant, one-third.

2. If a long-term rental agreement is in effect and PMA payments are received, it is suggested that the landlord pay one-half and the tenant, one-half of the cost not covered by the PMA payments. If no PMA assistance is received, it is suggested that the landlord pay one-third and the tenant, two-thirds of the cost.

In all cases, it is suggested that the tenant furnish the labor and equipment for applying the phosphate and seed and for any other job which this practice would necessitate.

A farm water system should be large enough to deliver at least 350 gallons per hour, according to the Louisiana State University Extension service.

Grass Gets "Hungry," Too

Many pastures virtually starve to death during summer months for lack of essential plant food, and Louisiana State University specialists point out that the carrying capacity of many southwestern pastures can be increased as much as three times by proper fertilization.

When grasses are grown in a mixture including legumes, the legumes usually will provide sufficient nitrogen for the grasses, but in pasture mixtures containing only grasses, nitrogen is nearly always deficient. Even the legume and grass pasture mixtures sometimes require additional nitrogen, but phosphate is most likely to be needed on these pastures.

In south Texas, results of tests by the Texas Agricultural Experiment Station indicate that fertilization of King Ranch bluestem grown on low fertility soils pays big dividends.

Analysis of 3- and 4-year-old stands of unfertilized K.R. bluestem in south Texas during the summer of 1949 showed that the grass had a protein content of only 2.25 percent and a phosphoric acid content of only 0.13 percent. Dr. R. C. Potts, agronomist in charge of forage investigations, points out that a forage containing less than 6-percent protein and 0.33-percent phosphoric acid is not considered a satisfactory livestock feed unless supplemented with other high protein or high phosphoric acid feeds.

Fertilization of these stands of King Ranch bluestem with 64 pounds of nitrogen and 80 pounds of phosphoric acid per acre increased the protein content to 7.62 percent and the phosphoric acid content to 0.30 percent. This still left the phosphoric acid content of the grass below the level desired, but renovation of the area, plus fertilization, increased the phosphoric acid content to 0.35 and the nitrogen to 8.31 percent.

On the basis of dry forage production, the fertilization and renovation increased yields from 350 to 1,330 pounds per acre. It is significant to note that the application of nitrogen alone or phosphate alone gave very little increase in forage yields, but the combination of these two plant foods gave highly satisfactory results.

Farmers are urged to check with their county agricultural agents for the latest fertilizer recommendations. Each field and each pasture mixture should be considered separately, since the requirements differ widely.

Killing Persimmon and Sassafras Sprouts

Persimmon and sassafras sprouts commonly infest many fields and pastures, and their presence adds materially to the cost of breaking the land in preparation for a cultivated crop. Their control is made especially

difficult because hoeing and grubbing merely serve to increase the infestation.

Mowing the fields while they are in pasture, between row crops, is helpful in controlling these sprouts and perennial weeds but will not bring about complete eradication. However, the use of chemical weed killers has proved to be an effective supplementary method of control. Since only limited use can be made of the chemicals while crops are being grown on the land, it usually is more profitable to apply the chemical weed killers while the land is in pasture and a year or more before breaking the land for a row crop.

An Ammate solution, made by mixing 2 pounds of Ammate to 1 gallon of water, was the most successful treatment for killing persimmon and sassafras sprouts in tests made by the Texas Agricultural Experiment Station at Jacksonville. The sprouts should be cut off at or just below the ground and a small quantity of this solution poured directly on the stump. Tests have indicated that this treatment during the summer or early fall kills about 90 percent of persimmon and about 75 percent of sassafras sprouts. Similar treatments also have been used recently in controlling sweet gum sprouts and bear grass.

Summer Poultry Hints

Poultry growers are urged to feed a good growing ration to their pullets during the summer months in order to insure maximum egg production during the fall, when egg prices are usually highest.

The Louisiana Agricultural Extension Service recommends that the summer feeding program for pullets include whole oats and a good growing mash. These should be kept before the birds at all times in self-feeders, and if milk is available, it can be added to the ration. An abundant supply of clean, fresh water should be provided for the chickens at all times.

In view of the high cost of feed and the need for keeping expenses as low as possible, Louisiana State University poultry specialists suggest that short, tender, succulent grass,

soybeans, or Sudan grass be provided for the young pullets whenever possible. The top 2 inches of such feed usually has a higher protein content than commercially mixed growing mash. Use of this "pasture" can save as much as 20 percent on feed costs.

Parasites, particularly round worms, can be controlled by separating the pullets from the old flock and putting them on ground where no chicks have run for at least a year. If this is not possible or if pullets show signs of worm infestation, treat the flock for worms with one of the recommended medicines available from most feed stores.

Fly Control Pays Big Dividends

Control of flies on livestock during summer months is essential for highest production. For example, it has been estimated that beef cattle gains may be increased as much as 50 pounds or more per year if hornflies are kept under control. In the dairy herd, failure to control flies not only increases the danger of contaminating milk but may seriously reduce milk production.

Each kind of fly usually requires a specific control measure, and James A. Deer, assistant extension entomologist of the Texas Extension Service, suggests that livestockmen contact their county agricultural agents for latest recommendations. The more common insecticides in use are DDT and toxaphene, usually recommended as sprays or dips in a concentration of $\frac{1}{2}$ of 1 percent. Spraying with either of these materials will protect cattle from hornflies for a period of 20 to 45 days. It is important that the animals be covered thoroughly if sprays are used, in order to give maximum protection.

Insecticides Can Be Dangerous

Many of the improved insecticides being used by southwestern farmers are also highly poisonous to humans. Serious injury, and even death, may result from improper handling of materials such as parathion and TEPP.

The fact that these chemicals can be injurious to humans should not cause farmers to discontinue their use, because if properly

handled, they are safe and are an essential weapon in the farmer's fight to save his crops from destruction by insects. However, during the peak of the poisoning season, when almost every farmer is handling these materials frequently, it is easy to become careless or to disregard certain precautions in an effort to save time. For this reason, the Texas Agricultural Extension Service emphasizes the importance of following directions of the manufacturer carefully and completely in the handling of insecticides.

Keeping the poisonous material stored in a closed, tight container out of the reach of children is, of course, the first rule to be followed. Second, the operator should be careful to avoid inhaling dusts or sprays and, also, to avoid spilling any of the material on his hands or other exposed portions of the body. After using the more dangerous insecticides, clothing should be removed and washed before being worn again.

If any degree of illness is noted during or after using the insecticides, a doctor should be consulted immediately.

New Cleaning Device for Cotton

A new device for removing trash from seed cotton has been developed by The Batelle Memorial Institute of Columbus, Ohio. The patent rights to the invention have been assigned to the United States Department of Agriculture, which is now making application for a patent, and manufacture of the cleaner should begin relatively soon.

The cleaning device consists of two cylinders—one within the other. Air from a number of small pressure jets entering through the outside cylinder blasts trash from the cotton. The trash is then skimmed off through slots in the inside cylinder.

It is hoped that this improved method of cleaning seed cotton will be of help to ginners who are handling large amounts of mechanically harvested cotton.

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