Agricultural
NEWS LETTER

FEDERAL RESERVE BANK OF DALLAS

Vol. 9, No. 10 DALLAS, TEXAS October 15, 1954

Don't Give Away Stored Grain

Hundreds of southwestern farmers will "give away" as much as 10 percent of the grain they have stored from this year's harvest. Rats, weevils, and other insects will take a toll in virtually every storage bin unless adequate precautions are taken to protect the grain.

The first step in protecting stored grain is the use of a storage place that is constructed in such a manner as to give maximum protection from rodents and insects. The building or bin should be rat-proof and provided with suitable ventilation. Steel structures are the easiest to make rat-proof but may be the most expensive. Properly constructed wooden bins can be used satisfactorily if they are placed well above the ground, in order to give circulation underneath the building and to permit the use of rodent barriers—strips of tin to prevent rats and mice from climbing supporting piers.

In the case of rice, storage bins should have provisions for artificial drying of the grain by the circulation of air through the areas.

The second step in protecting stored grain is making certain that the storage bins are cleaned adequately and disinfected before placing the grain in the bins. All old grain should be swept out; all debris cleaned from corners of the bins; and the walls, ceilings, and floors swept thoroughly and sprayed with DDT, methoxychlor, or TDE. About 2 gallons should be applied to every 1,000 square feet of surface.

The job is not complete when the grain has been stored properly in a well-cleaned and disinfected bin. Weevils and other insects are present on most farms and will infect stored grain if proper precautions are not taken. Grain should be inspected at least every 2 weeks for the presence of weevils. A probing rod should be used in order to sample the grain in the bottom of the bin. This also will enable the farmer to watch for overheating of newly stored grain.

If weevils or other insects are detected, a suitable fumigant should be applied immediately. A number of fumigants are on the market and can be purchased from a feed store or drugstore. One of the more common is made by mixing one part carbon tetrachloride with three parts of ethylene dichloride. Ten gallons of this material are recommended for fumigating 1,000 bushels of grain sorghum stored in a wooden structure. Seven and one-half gallons should be ample if the building is of steel construction. Other grains will require similar amounts.

The fumigant should be sprayed over the surface of the grain with a coarse spray. It then will penetrate into the stored material, usually giving effective control to a depth of 10 to 12 feet. The bin should be closed up airtight for at least 24 hours following

treatment, in order to give the fumigant time to penetrate all areas. Some entomologists recommend keeping the bin closed for 4 or 5 days and reopening it for an airing before entering to make the next 2-week test.

Extreme care should be exercised when applying the fumigant. The fumes from such material are harmful to humans and should not be inhaled. A mask should be worn when applying such materials.

Many farmers follow the practice of fumigating grain as soon as it has been stored to destroy any infestation that may have occurred during harvest. The same procedure should be followed as that for grain which has been in storage for several weeks.

The small cost and the relatively little time required to give proper care to stored grain will more than repay the farmer for his effort. It is estimated that each rat eats well over $2 worth of grain each year. A severe infestation of weevils not only may destroy a substantial portion of the grain but also may lower the grade to the point where the sale price is only half that which could have been received if the grain had been cared for properly.

Rice growers should inquire of local county agricultural agents as to the newest developments in storing rice. This grain requires special care because of its high perishability and high moisture content at the time of harvest.

A New "Formula" for Dairy Calves

Dairymen have long sought a suitable replacement "formula" for dairy calves. It is not economical to feed dairy calves on whole milk if the dairyman is producing Grade A milk. However, dairy calves frequently do not do well on substitute rations.

In a recent test by Texas A. & M. College, a so-called milk-replacer formula was used very successfully in growing dairy calves. The first results of the feeding program, which is still under way, are reported in the Station's Progress Report 1710.

The formula used consisted of 537½ pounds of nonfat dried milk solids (dried skim milk), 450 pounds of dried whey, 10 pounds of Aurofac 2A, and 2½ pounds of Quadrex "10" (stabilized Vitamin A and D supplement). This formula mixture was kept in a dry place until time to mix the feed for the calves. Then, it was mixed with water to form a gruel.

The formula contains approximately the same percentage of protein as whole milk. The cost of the formula at present wholesale prices is approximately $11.40 per 100 pounds. Dried skim milk can be substituted for the dried whey, pound for pound, up to nearly 99 percent of the ration.

In these tests, two groups of calves—one composed of Jerseys and the other, of Holsteins—were fed the milk-replacer formula after 12 days of age. The first 5 days, all calves were given the colostrum milk from the mother cows, and from 5 to 12 days of age, the ration was shifted gradually from whole milk to the milk replacer. A few of the calves were changed abruptly at 5 days of age from colostrum milk to the milk replacer without any apparent detrimental effects.

The calves fed the milk-replacer formula showed a substantially faster rate of gain during their first 60 days than similar calves did on whole milk. This is a period when dairy calves frequently show very slow rates of gain when being fed milk replacers. Compared with the control group of calves, which were fed whole milk until they were 4 weeks old and then fed reconstituted skim milk, the calves fed the milk-replacer formula gained from 11 to 21 percent faster.

The specialists in charge of these tests indicate that the results during this first period of feeding should be fairly reliable, in view

of the number of calves included and the conditions under which the tests were carried out. They emphasize the fact that the milk-replacer formula is relatively simple to prepare and, compared with other milk substitutes, is relatively easy to feed. Additional tests are being conducted to compare this simplified milk-replacer formula with some of the leading commercial formulas and several of the more complicated experimental formulas.

Insured Loans for Soil Conservation and Water Facilities

A new type of credit for financing soil conservation measures and for developing irrigation systems and farmstead water supplies is now available through the Farmers Home Administration. An amendment to the Water Facilities Act by the recent Congress provides this additional credit service to farmers.

In general, loans under this provision can be made to pay the cost of materials, equipment, and services directly related to the application or establishment of soil and water conservation practices, water facilities, or drainage. These include the construction or repair of terraces, dikes, and ponds; pasture improvement; the basic application of lime and fertilizer; and tree planting.

The loans are made through the local Farmers Home Administration office. However, funds for the loans are derived from either local lenders or a group of national private lenders. In either case, the funds come from private sources rather than from appropriations.

To illustrate the procedures in obtaining such a loan: If a country banker has a customer who needs a loan for any of the above-mentioned practices, he may direct this customer to the local Farmers Home Administration supervisor. The customer makes the necessary application for the loan, and the bank furnishes the local Farmers Home Administration office with a letter indicating its willingness to provide the funds for such a loan. After proper processing, the bank is informed that funds should be advanced to cover the loan. In turn, the Farmers Home Administration provides the bank with a written guarantee for the full face amount of the loan.

The loan is serviced by the Farmers Home Administration, and the payments, including instalments and interest, are made directly to the bank once a year. The interest rate currently is 3½ percent to the lending agency and 4½ percent to the borrower, with 1 percent going for loan insurance and servicing.

Loans can be made to some tenants, provided they have suitable leasing arrangements to insure their operation of the farm during the period of pay-out on the loan. All loans must be made to the operator of the farm. They cannot be made to absentee owners.

Actual terms and conditions of these loans will vary with the location and the purpose for which the loan proceeds are to be used. It would be well for interested bankers and farmers to obtain complete details from their local Farmers Home Administration supervisor. These insured loans would appear to fill a gap that has existed for some time, particularly in Texas, in the financing of soil conservation and land improvement practices.

Methyl Bromide Controls Insects in Stored Rice

Circulating methyl bromide through stored rough rice resulted in effective control of insect infestations in tests by the Rice Pasture Experiment Station at Beaumont, Texas.

In the tests, which were conducted on rough rice stored on the farm in buildings designed for drying rice by aeration, the methyl bromide was circulated through the rice by introducing the gas over the grain, drawing it through the stored grain with a circulating

fan, and returning it to the bin from the exhaust side of the fan. The gas was introduced into the circulating system at an average rate of 1 pound per minute and was circulated for 20 to 30 minutes.

The total amount of gas used in the test was 1 to 3 pounds of methyl bromide per 1,000 cubic feet of bin space. The dosages of 1 and 1½ pounds did not give complete kill in all tests, while 2 or more pounds gave a 100-percent kill in all cases.

The surviving insects in tests using 1½ to 2 pounds of methyl bromide were found in the lower part of the bin near the bin wall. Further investigation revealed an improper seal between the wall and the floor in this bin, thus preventing complete circulation of the fumigant.

Fire-Fighting Tips

It is often said that fires that are not controlled within the first 5 minutes after they start usually cause extensive destruction before being brought under control. This emphasizes the importance of farmers making provisions to fight fires that may occur on farm buildings. Most rural areas do not have available the services of fire-fighting equipment; even in communities serviced by such equipment, 10 to 15 minutes generally are required for the arrival of such assistance.

The Louisiana Agricultural Extension Service offers the following suggestions with respect to equipping the farmstead with proper fire-fighting equipment.

(1) Have ladders long enough to reach the highest roof on the farm buildings.

(2) Have enough garden hose and a filled water bucket for each 400 to 500 square feet of building.

(3) Maintain approved fire extinguishers in convenient locations near all hazardous areas, such as the barn, machine shed, and storage tanks of gasoline and kerosene. Recharge extinguishers according to manufacturers' directions.

(4) Have an adequate supply of water available for the use of fire trucks and portable pumps.

While adequate equipment for fire-fighting measures is essential, a program of fire prevention, cannot, of course, be overemphasized.

Publications

Texas Agricultural Experiment Station, College Station:

Southern Pea Variety and Strain Test, Lower Rio Grande Valley, Fall 1953, Progress Report 1705, by R. T. Correa, Jr.

Control of Early Weeds and Grasses in Cantaloupes, Progress Report 1706, by H. C. Mohr.

Terramycin in Rations for Fattening Steers, Progress Report 1712, by P. T. Marion and others.

American-Egyptian Cotton Variety Tests, El Paso Valley Experiment Station, 1953, Progress Report 1708, by L. S. Stith and others.

The Effect of Temperature and Rainfall on Peach Production in Northeast Texas, Progress Report 1709, by H. F. Morris.

Copies of these publications may be obtained by request to the publishers.

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