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Storing Sorghum Grain in South Texas

Losses of 40 to 50 cents per hundred pounds of sorghum grain were incurred by many south Texas farmers in 1949, as lack of suitable storage space prevented them from taking advantage of the government loan. It is estimated that there was storage space for only about 2,000,000 of the 12,000,000 bushels of sorghum grain produced in the area last year.

Providing suitable storage for grain is a particularly difficult problem in this area. The generally high temperatures make it imperative that the moisture content of the stored grain be kept at minimum levels in order to prevent spoilage. The relatively high humidity of the area frequently makes it impractical to field-dry the grain prior to storage and causes the grain to absorb moisture after storage.

Recognizing that the problem of reducing the moisture content of grain before storage is of major importance to farmers in the Gulf Coast area, the Texas Agricultural Experiment Station began tests in 1945 to develop an artificial drier suitable for drying sorghum grains on the farm prior to storage. Instructions for building and operating a drier are now available from the Department of Agricultural Engineering, Texas Agricultural Experiment Station, Texas A. & M. College, College Station.

As a follow-up to these first experiments, tests were conducted in 1947 to determine the effects of artificial drying on the milling characteristics of sorghum grain. Results of this work may also be obtained by writing to Texas A. & M. College and asking for Texas Station Bulletin 710, entitled "Drying and Its Effect on the Milling Characteristics of Sorghum Grain."

The acute storage problem in 1949, which became apparent early in the season, emphasized the need for more adequate farm storage facilities if farmers were to take full advantage of the government price-support program. Therefore, the A. & M. experiments last year were designed to develop safe methods of storing sorghum grain on the farm. The results of last year's tests, while not conclusive, do serve as a guide for storing sorghum grain in 1950.

The work in 1949 was conducted at the Beeville Station. In the tests research workers used seven steel bins and four wooden bins, ranging in capacity from 1,000 to 2,740 bushels, plus two temporary-type bins and four small underground pits of 50 bushels capacity each. Some of the bins were painted white and others aluminum to determine the effect, if any, of the color of the bin wall on storage temperature. False floors were installed in two of the bins to test the practicability of drying the grain in the bin. In July 1949, all of the bins and pits were filled with Martin variety grain sorghums. Moisture content of the grain ranged from 10 to 18 percent.

A summary of the experiments reveals several significant facts regarding storing of grain sorghums in the Gulf Coast area.

Sorghum grain with a moisture content of more than 12 percent at time of storing did not keep satisfactorily in the Gulf Coast area without additional drying while in storage. Grain with such a moisture content became excessively hot during the storage period, and it was necessary to turn it to prevent overheating. Even with this precaution, the grain was

"caked" in several places and the grade reduced materially.

Insect activity was found to increase rapidly with a rise in moisture content, and insect control became difficult when moisture exceeded 12 percent. In the bins where grain of 10- to 12-percent moisture was stored, insects were readily controlled and no deterioration was apparent in grade or quality of the grain.

Artificial drying of the grain in the bins which had false floors was reasonably successful, although drying time increased rapidly when the depth of the grain was greater than 1 foot, 3 inches. Grain with a moisture content of 14 to 18 percent, however, was dried successfully in these bins. If speed in drying is not important and if producers intend to store the grain in the same bin in which it is dried, this method of drying should prove satisfactory.

The two temporary bins and the underground pits were filled with grain having 10- to 12-percent moisture and apparently kept the grain satisfactorily, although the temperatures were somewhat higher than those in the steel and wooden bins containing grain of a similar moisture content.

Color of the bin wall had no significant effect on storage temperatures of the grain.

While further tests will undoubtedly shed more light upon the problems of storing grains in south Texas, the results of last year's experiments suggest the following recommendations for storing sorghum grain in the Gulf Coast area:

(1) Use a tightly constructed bin.

(2) Reduce the moisture content of all grain to 10 to 12 percent before storing.

(3) Fumigate the grain with a mixture of three parts ethylene dichloride and one part carbon tetrachloride, by volume, at the beginning of the storage period. Dosages recommended per 1,000 bushels of grain for the different types of construction are: steel bin, 8 gallons; wooden bin, 10 gallons; and temporary bin, 12 gallons.

(4) Check for insect activity every 2 weeks during warm weather and refumigate if there are as many as two weevils or five bran beetles per pint sample of grain.

(5) Check the temperature at least every 2 weeks during the summer and move grain if temperature remains above 95 degrees F. for a prolonged period.

Hogging-Off Corn

A new measure of corn yields—pounds of pork per acre—is becoming common in Louisiana, where farmers are hogging-off corn and soybeans.

According to Louisiana State University, corn growers are able to produce as much as 1,200 pounds of pork per acre by hogging-off corn and soybeans. In recent years this method of marketing corn yielded a return equivalent to about $2.50 per bushel, when the crop was selling as low as $1.25 per bushel for feed.

Hogging-off corn and beans saves the cost of harvesting and reduces materially the labor required for feeding the hogs. It is necessary, of course, to have a hog-tight fence around the field, and the animals should have free access to plenty of fresh water, shade, and a mineral supplement.

Lighter-Weight Hogs Best

Hogs weighing from 200 to 230 pounds are most likely to top the market, says E. M. Regenbrecht, extension swine husbandman of Texas A. & M. College.

These lighter-weight hogs are in stronger demand than heavier ones because they yield neater, more desirable size cuts for the consumer and produce a smaller percentage of

lard, which is a relatively low-value part of the carcass.

Another reason for selling hogs at these lighter weights is that they become less efficient users of feed when they exceed 230 pounds in weight.

APF and Antibiotics?

The use of APF (animal protein factor) concentrates and antibiotics, such as aureomycin and streptomycin, in poultry and livestock feeds has produced sensational results at several state agricultural experiment stations.

At the Texas experiment stations located at Gonzales and College Station, Texas, broilers fed a ration containing no animal protein weighed 1½ pounds at 10 weeks of age. Another group of birds fed the same ration plus APF concentrate weighed 2½ pounds at 10 weeks, while a third group fed the basic ration plus APF concentrate containing aureomycin weighed 2¾ pounds at the same age. Work at other stations and on other classes of livestock has shown similar results.

The use of APF is now quite general in many rations, and results can be predicted rather accurately. APF concentrate can be purchased and added to home-grown feeds, or an adequate supply can be provided by adding an animal protein, such as fish meal, tankage, or meat scraps, to the ration.

The use of antibiotics, such as aureomycin and streptomycin, in animal feeds is very new and further research is under way to determine additional facts. The materials are not yet readily available to livestock and poultry raisers, and their general use by farmers should await the results of more extensive tests.

Vaccinate for Newcastle Disease

Poultrymen are warned that there is no known cure for the destructive Newcastle disease, but vaccination will give good control if done properly and is cheap insurance against the disease, according to Louisiana State University.

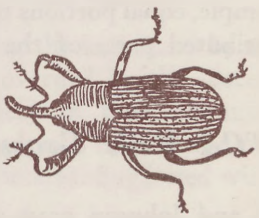
A live virus vaccine should be used when the birds are between 5 and 14 weeks of age. Vaccination should be made in the web of the wing exactly the same way as for fowl pox or chicken pox. The specialists emphasize that immunization should take place prior to the time pullets start laying, as vaccination when the birds are laying will interrupt egg production for several weeks.

Control of Newcastle disease in broilers can be achieved by (1) purchasing only chicks hatched from flocks that have been immunized against the disease, which provides immunity in the chicks until they are about 4 or 5 weeks old, and (2) vaccination at about 5 weeks of age.

Don't Starve Poultry

The common practice of fasting or starving chickens for 24 hours before marketing results in a loss of weight and, thus, a loss of income to the farmer, according to Louisiana State University specialists.

Keeping the birds off feed only 3 or 4 hours prior to marketing is recommended. If this practice is followed, the birds will lose about two-thirds of the intestinal content that would be lost in the 24-hour period and will actually gain in body weight during the marketing period.



Cotton Insects Still Threaten

Cotton insects have been more numerous throughout the Southwest this season than in any recent year. Farmers have been waging a fairly successful battle against these pests in

many communities, but Dr. H. G. Johnston, head of the Entomology Department of Texas A. & M. College, warns against any let-up in the campaign. In many areas it has been necessary to continue applications of insecticides longer than usual, and farmers should check with their county agricultural agents to determine the most effective control measures for their areas.

Vetch Seed Tested

Germination and purity tests of vetch seed produced by Texas growers will be made again this year, without charge, by the Vetch Seed Testing Laboratory at Texas A. & M. College.

Samples to be tested should weigh about 2 pounds each and can be mailed by parcel post to the Vetch Seed Testing Laboratory, Department of Agronomy, Texas Agricultural Experiment Station, College Station, Texas. The grower should make certain that his name and address are plainly written on the tag or label on the outside of the package.

Officials at the testing laboratory stress that the accuracy of the tests in indicating the quality of the grower's supply of vetch seed depends upon the care with which the sample is selected. If the sample is not representative of the bulk of the seed, the tests are of no real value to the seller or buyer. E. B. Reynolds, agronomist in charge of the laboratory, recommends that, in order to secure a representative sample, equal portions be taken from evenly distributed parts of the seed supply.

TCA Kills Grasses

Bermuda and Johnson grass can be killed by spraying with trichloroacetate (commonly called TCA), according to M. K. Thornton, extension agricultural chemist of Texas A. & M. College.

The spray should be mixed at the rate of 1/3 to ¾ of a pound of material per gallon of water and applied at the rate of about 1 gallon of spray per 100 square feet. It should be applied directly on the plants, and best results are obtained if spraying is done during June or July, when the ground is relatively dry and rain is less likely to occur soon after application. If it rains immediately after spraying, some of the spray will be washed off and the percent kill will be reduced materially.

Mr. Thornton points out that the application of TCA may affect the growth of all plants on the land for 90 to 120 days after application and that while TCA is useful for eradication of small areas of Bermuda and Johnson grass, the cost of the material makes it uneconomical for use on large areas.

Announcement

"Cotton's Vital Role" will be the theme of the eleventh annual Cotton Research Congress to be held in Dallas at the Baker Hotel on July 27-28.

Publications

Oklahoma Agricultural Experiment Station, Stillwater:

Growing Soybeans in Oklahoma, Bulletin No. B-347, by Chester L. Canode.

Comparative Costs of Grain Storage on Farms and in Elevators, Bulletin No. B-349, by Adlowe L. Larson and others.

Grasshopper Control with Chemical Sprays and Dusts, Bulletin No. B-351, by Charles H. Brett and others.

Texas Agricultural Experiment Station, College Station:

Citrus Molasses and Corn Molasses Compared with Ground Milo in Rations for Fattening Beef Calves, Progress Report 1252, by J. K. Riggs and others.

Copies of these bulletins may be secured by request to the publishers.