Agricultural
NEWS LETTER

FEDERAL RESERVE BANK OF DALLAS

Vol. 9, No. 3 DALLAS, TEXAS March 15, 1954

Silage Pays Off

A supply of good silage is "just like money in the bank" to the livestock producer. When properly stored, silage maintains its quality almost indefinitely, is always available, and is a very desirable livestock feed.

Specialists at Texas A. & M. College point out that silage is one of the cheaper forms of feed, being second only to improved pastures. It is estimated that 100 pounds of total digestible nutrients (a measure of feeding values) will cost about 40 cents from improved pastures, $1.40 from silage, $3 from hay, and $5.40 from a mixture of grains and protein supplements. While these figures will vary with the market price of feed, the relationships remain fairly constant.

The use of silage is especially well adapted to many parts of the Southwest because of the flush growing season in the early months of the spring and summer, followed by hot, dry weather in which the production of forage from pastures usually is sharply reduced. Frequently, the amount of forage available from pastures during the early spring months is much greater than the livestock can consume. Hence, many pastures grow large, coarse, and stemmy, and a substantial amount of feed is lost. Harvesting a part of this growth and storing it in the form of silage can provide emergency feed for periods when pasturage is not available.

Any forage that is palatable before being put into a silo will be palatable when it is silage, according to R. E. Burleson of Texas A. & M. College. Moreover, the feeding value of the silage will be very similar to the feeding value of the forage that is put into the silo. Some of the more common crops used for silage are corn, grain sorghums, sweet sorghums, legumes, and grasses. Molasses usually is added to legumes and grasses, in order to facilitate fermentation and to give a more pleasing odor to the silage.

The use of a few simple rules will help to insure high-quality silage.

1. Cut the forage when it is most palatable and has the highest feeding value. With most crops, this means before a seed crop is formed, and with grasses and legumes, before the plants become coarse and stemmy. Corn and grain sorghums usually are harvested in the dough stage and before the plants lose their green color or become extremely dry.

2. The material should be chopped in relatively short lengths, in order to facilitate packing in the silo. Either a field chopper or a stationary chopper can be used satisfactorily.

3. Silage should be well packed to exclude as much air as possible from the stored material.

4. Moisture content of the material should be around 65 to 75 percent. If grasses or legumes are used, molasses or another sugar or starch material should be added.

5. When the silo is filled, the silage should be covered with straw, dirt, or other material to exclude air. Some farmers use building paper with dirt thrown on top.

Many different structures are used for storing silage. One of the more common is the trench silo, which is simply a trench in the ground — usually 12 to 14 feet wide and 8 to 10 feet deep — in which the silage is dumped, packed thoroughly, and then covered. This is one of the less expensive structures and works satisfactorily if its location permits adequate drainage from the bottom of the trench. In some soils, it is desirable to line the sides and bottom of the trench with concrete; in others, the soil structure is tight enough so that no lining is required. The sides should be smooth and straight.

The upright silo has been used successfully in many sections of the country. However, the labor required for getting silage out for feeding is considerable, and the initial cost of such a silo is higher than that for most other types.

Other farmers have found it desirable to build a box-type silo on top of the ground. The sides can be of concrete slabs or wood and the silage dumped into the box and thoroughly packed. It is more difficult to put silage into this type of structure and also to pack it. In the trench silo, a tractor can be used to run over the silage and pack it firmly in place.

Still another method is simply stacking the silage on the ground and providing a cover of building paper or other material to help exclude air. There is usually more spoilage in this type of storage than in structures where material can be packed more firmly and a greater amount of air excluded.

The important thing to remember in storing silage is that there should be a means of excluding air, because bacteria which feed on air break down plants after harvest and may continue to build up as long as 8 days after forage is placed in storage. These bacteria disappear as the oxygen in the air within the silage material is used up, and bacteria which do not live in the presence of air become more dominant in the material. As they act upon forage, lactic acid is formed. Lactic acid appears to act as a preservative and gives good silage its characteristic odor.

Activity of the bacteria may continue for 60 days or more after the silage has been stored. If additional air comes in contact with the silage material after storage, the bacteria which live in the presence of air continue to act, bringing about spoilage of the material. Formation of butyric acid is one of the results of this process and gives the foul-smelling odor to spoiled silage.

In view of the fact that silage is the second least expensive feed for southwestern cattlemen and because the area is subject to drought in the summer and severe storms during the winter, it is good insurance for every stockman to store as much silage as possible. In most communities, equipment can be secured for digging trench silos and for cutting and storing forage material. A dragline or bulldozer can be used in digging a trench silo, and a field chopper, together with enough wagons to carry the material to the silo, is one of the more common ways of cutting and storing silage.

Dairymen have found that a supply of silage is almost a necessity for a profitable dairy program. Many have found that milk production increases as soon as they start feeding their herds silage. A substantial saving can be made in the feed bill of most southwestern stockmen by the use of silage.

Chemical Control of Grass in Cotton

Chemical control of grass in cotton is fast becoming a reality on many southwestern farms. Hoeing has been one of the major items of expense in the production of cotton, and the use of chemicals to control weeds and grass can result in considerable saving.

In tests by the Texas Agricultural Experiment Station, it was found that the total cost of chemically controlling weeds and grass, including a small amount of hand-hoeing and the cost of chemicals, was substantially lower than when hand-hoeing was the sole means of weed control.

A cost of $8.41 per acre was reported for the treatment which used chemicals and spot hoeing to control weeds not killed by the chemical treatments. In this test an application of chemical was made at the time of planting, and two applications 7 days apart were made after cotton plants were up to a stand. Control of weeds later in the season was effected by use of flame cultivation. Cost of the chemicals was $5.12 per acre and of hoeing, $3.29 per acre.

These costs compare with $13.30 per acre where the cotton was hand-thinned, hand-hoed, and given usual tractor cultivation.

Application of chemicals to control weeds requires a reasonably high degree of accuracy in machinery operation. The chemicals must be applied at the proper rate, and in post-emergence treatment, care must be exercised to avoid applying the chemical to the cotton plants, as burning of the leaves will result.

Several chemicals suitable for the control of grass in cotton are on the market. Cotton growers interested in using this method of grass control should check with local distributors for type of material and method of application. In many communities, there are growers who have used this method of grass control, and they can be of valuable assistance in planning the program on other farms.

Drought-depleted ranges, under good management, will make a satisfactory recovery if as much as 15 percent of the native, key grasses are still on the range. Reseeding may be necessary in some cases, but deferred grazing and proper stocking are cheaper methods of recovery.

Treat Cotton Seed to Prevent Disease

Chemical treatment of cotton seed prior to planting can reduce materially the danger of losses through seed rot, seedling blight, pink boll disease, angular leaf spot, and other soil- or seed-borne diseases, according to Fred C. Elliott, Extension cotton work specialist of Texas A. & M. College.

These diseases annually cause severe cotton losses and sometimes result in almost complete loss of stand. The cost of seed treatment is small and, when properly carried out, can result in substantial reduction in such losses.

A mercurial dust is one of the more common materials for treating seed and is sold under various brand names, including Ceresan and Improved Ceresan. Sources of these chemicals and directions for their use can be obtained from county agricultural agents, ginners, seed dealers, and other agricultural leaders in the community.

Kill the Bugs Early

Early season control of cotton thrips, aphids, fleahoppers, and boll weevils is one of the more economical ways of reducing insect damage to cotton, according to Freeman M. Fuller, entomologist for the Agricultural Extension Service at Texas A. & M. College.

Early season cotton insect control requires less insecticide material, is easier to apply, and reduces the build-up of cotton insects later in the season. If sprays are used, it frequently is possible to cultivate and apply insecticides simultaneously.

The first application of insecticides should be made when the cotton plants are in about the four-leaf stage or at the first appearance of thrips or aphids. Three or four applications should be made at 7-day intervals.

Early season application of insecticides should be stopped about 30 days before the bollworm normally appears. This permits beneficial insects to build up in numbers and help control the bollworm.

Additional applications of insecticides may be required later in the season if insects increase to damaging numbers. However, it frequently is possible to omit mid- and late-season applications when adequate early season control is practiced.

Information on insecticides to use for early season control is available in the publication *1954 Guide for Controlling Cotton Insects in Texas.* Copies may be obtained from county Extension agents, ginners, and other agricultural agents in most communities.

What to Do About Bloat

Bloat is one of the more serious dangers to cattle during the spring growing season. Lush clovers and grasses are conducive to bloat, and stockmen must watch carefully the animals which are on fresh pastures to avoid losses from this digestive disturbance.

The exact cause of bloat is not known. It occurs most frequently when animals are grazing on lush green feed. Affected animals suffer from severe gas pressure in the digestive tract, and death may occur within a few minutes unless adequate steps are taken to give the animals relief.

Dr. C. M. Patterson, Extension veterinarian for Texas A. & M. College, offers these suggestions on handling bloat cases.

1. Mild cases of bloat can be corrected by withholding all feed for a few hours and forcing the animals to exercise.

2. In more severe cases, animals should be forced to stand on an incline, with the front feet higher than the hind feet.

3. In extreme cases where severe swelling of the paunch is evident, a veterinarian should be called and relief from the gas pressure obtained through the use of a trocar (a device for making a small opening in the skin of the animal just in front of the hip bone, permitting gases to escape).

Giving animals plenty of dry roughage before turning on to fresh pastures frequently will prevent bloat. Some livestock raisers find that keeping a supply of hay in the pasture also helps to reduce bloat.

Publications

New Mexico Agricultural Experiment Station, State College:

Cost of Pumping Water for Irrigation, Lea County, 1952, Bulletin 383, by William P. Stephens.

Oklahoma Agricultural Experiment Station, Stillwater:

A Study of Phosphate Fertilization and Legume Rotations for Small-Grain Winter Pastures, Bulletin No. B-414, by Horace J. Harper.

Performance Tests of Corn Varieties and Hybrids, 1953, Miscellaneous Publication MP-33, by Hartwill Pass and others.

Texas Agricultural Experiment Station, College Station:

Salt Tolerance of Five Grasses, Progress Report 1620, by H. W. Gausman.

Variety and Strain Trials with Grain Sorghum, Broomcorn, Safflower and Popcorn in the Lower Rio Grande Valley, 1953, Progress Report 1622, by Charles S. Miller.

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

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