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"Self-Fed" Mixtures of Salt and Cottonseed Meal

As the season of supplemental feeding of range cattle approaches, many southwestern ranches will be dotted with feed troughs filled with a mixture of salt and cottonseed meal. These feeders will hold a week's or 10 days' supply of feed for the cattle and will be covered to protect the feed from rain and wind. Cattle will eat the cottonseed meal and salt mixture at their leisure and without the ranchers having to visit the pastures every day or two with a load of feed.

This practice is known as "self-feeding" mixtures of cottonseed meal and salt. The salt is added to regulate the daily consumption of the cottonseed meal: the higher the proportion of salt, the less meal consumed, since the cattle will eat only a limited amount of salt per day. These "self-feeders" can be spaced over the pastures so that the ranges will be grazed more uniformly. Also, the cattle will spend less time waiting around the feeding area. In addition, this practice permits the less aggressive and smaller animals to get an adequate amount of feed, since only a few head are likely to be at the feeder at any one time.

The practice of self-feeding mixtures of salt and cottonseed meal to range cattle was probably first practiced along the Pecos River about 1934. It is reported to have been used first with the idea of preventing lechuguilla and bitterweed poisoning. Early reports of the practice were considered incredible and contrary to all known principles of livestock feeding. Despite the skepticism of feeding experts, the practice has gained rather widespread acceptance throughout the Southwest. Ranchmen have been quick to see its advantages in saving of labor, and many have reported better gains on cattle fed in this manner.

To determine the limitations of the practice, the experiment stations of Oklahoma, Arizona, Kansas, Texas, and New Mexico have carried out extensive tests in recent years. Briefly, these tests have demonstrated the practicability of this method of feeding. The results have been similar to those obtained by ranchmen. However, certain limitations have been discovered, and a few general rules have been developed.

First, and perhaps most important, animals being self-fed a mixture of salt and cottonseed meal should have easy access to an abundant supply of water. Otherwise, sickness and even death may result.

Second, animals being self-fed this mixture should have plenty of palatable dry grass or roughage. In the Texas Experiment Station trials, breeding cows were wintered on unpalatable dry winter forage, and considerable scouring and one death occurred in this group. It appears that cattle must maintain an adequate intake of dry grass or other roughage, as well as plenty of water, to avoid the toxic effects of such a large intake of salt.

Third, the salt and cottonseed meal must be mixed thoroughly and uniformly; otherwise, an animal may accidentally get too much salt at one time.

Where these precautions have been followed, the mixture has been fed successfully to all classes of beef cattle, including breeding cows.

From the experience of ranchmen and the results of experiment station trials, a few guides can be outlined regarding the proportions of salt and cottonseed meal to be used. In most cases it is desirable to have the cattle consume about 2 pounds of cottonseed meal daily. To achieve this it is generally recommended that the mixture contain about ¾ pound of salt to 2 pounds of meal for 700-pound steers, ⅝ pound of salt to 2 pounds of meal for 450-pound steers, and ½ pound of salt to 2 pounds of meal for 300-pound calves. If cattle consume more than the desired amount of meal, the proportion of salt should be increased. Likewise, if they do not consume enough meal, the proportion of salt should be reduced.

It is usually advisable to start the cattle on the mixture gradually by sprinkling a little salt on top of the meal for a few feedings. As they become accustomed to the mixture, the proportion of salt can be increased.

Pink Bollworm Threat Most Serious

"Never before in the 34 years since the pink bollworm first appeared in the cotton fields of Texas has the situation been as serious as it is today," says L. F. Curl, regional director, Bureau of Entomology and Plant Quarantine.

A large acreage of cotton, a late season, and failure of farmers to follow an intensive clean-up program after harvesting their crop have been conducive to the spread of this dangerous pest. Mid-September rains in central and south Texas, where infestations have been especially heavy, delayed plow-up of harvested cotton fields and started new growth on those stalks. This has encouraged many farmers to try for a "top crop." According to Mr. Curl, this "top crop," if permitted to mature, will provide an ideal place for pink bollworms to increase and build up a tremendous population to go into hiberation for the winter. If this occurs, damage to next year's crop could far outweigh any return that might be obtained from a "top crop" this fall.

It is estimated that in the heavily infested counties of south Texas there are more than half a million acres of cotton still standing, and every acre that remains standing during the fall increases the chances for pink bollworm larvae to survive. The situation is so serious that farmers, bankers, agricultural leaders, ginners, and everyone interested in the cotton industry in Texas should take such action as is necessary to clean up cotton fields at the earliest possible date.

According to Mr. Curl, there are two methods of reducing the danger of overwintering pink bollworms. One is to shred the stalks and plow them under immediately to prevent further maturity of bolls. The second alternative is to pick and gin or destroy all late-maturing bolls. *Every late-maturing boll left in the field is a potential home for the pink bollworm.*

It should be emphasized that community action is essential to a successful clean-up campaign. One field neglected this fall could protect enough pink bollworms to infest an entire community next summer. It is worth remembering that in areas of the State where this pest has become prevalent, losses due to its damage have been extremely heavy, and in many cases fields have been abandoned before any harvesting could be done. A thorough cleanup in the fall is the *only effective* method of control.

Tractor Accidents

Tractor accidents are a major cause of injuries and even death on farms, according to Louisiana State University. As the number of tractors increases and as they are built to operate at higher speeds, it becomes more and more important that farmers use extreme care in their operation. As is the case with other

accidents, most tractor accidents can be prevented by following a few simple safety rules.

Some "don'ts" to be remembered with respect to the operation of a tractor are: Don't operate power take-off without the protective shield in place; don't crank the tractor while it is in gear; don't jump off the tractor while it is in motion; and don't permit extra riders.

Additional safety rules for operating tractors include (1) reduce speed before making a turn or applying brakes, (2) never ride on the draw-bar of tractor or on drawn implements, (3) always stop power take-off before dismounting from tractor, (4) never refuel tractor while motor is running or extremely hot, and (5) don't operate a tractor in a closed building or close to inflammable materials.

Chemical Control of Johnson Grass

Modern farm machinery has enabled most southwestern farmers to bring Johnson grass under control. However, in many parts of Texas small patches persist around farmsteads, fence rows, and roadsides, where it is impractical to use field machinery. The most serious objection to these small patches, of course, is that they are perennial sources of infestation of larger areas.

Recognizing this problem, the agronomists of the Texas Agricultural Experiment Station have investigated the effectiveness of certain chemicals in eradicating these small areas of Johnson grass. Such a method is expensive but, in the long run, is usually more efficient and cheaper than attempting to eradicate small patches with the use of hand tools.

After extensive tests, the specialists found that one-half to three-fourths pound of 90-percent sodium T.C.A. per square rod used as a spray or 6 to 8 pounds of Polybor-Chlorate applied dry or as a spray killed 95 to 100 percent of the stand of established Johnson grass. Application of these chemicals made the soil sterile for as long as a year in the case of the Polybor-Chlorate material but only 6 weeks for T.C.A. under heavy rainfall conditions.

The time of application does not appear to be of paramount importance in getting a good "kill," although best results were obtained when the treatment was made during or immediately before a rainy period. Rain carries the chemical down to the root system, where it becomes active in killing the plant. Heavily infested areas that contain many seeds must be treated more than once, since new seedlings will appear when the older plants are killed.

More Money With Fertilizer

One ton of commercial fertilizer used under cotton produced an average annual increase during the past 18 years of 1.6 bales, according to I. W. Carson, associate agronomist in cotton, Louisiana State University. On the basis of present prices for fertilizer and cotton, this means that for every dollar spent for fertilizer on cotton, the grower realized a return of $4.72.

Capitalizing on this favorable return on investments in fertilizer, Louisiana farmers used approximately 105,000 tons of fertilizer under cotton in 1951, compared with 69,000 tons in 1950 and a 10-year (1939-48) average of 58,000 tons. The average rate of application this year was 260 pounds per acre, and fertilizer was applied on 81 percent of the cotton acreage in the State. These figures compare with 235 pounds per acre on 76 percent of the acreage in 1950. Mr. Carson points out that further increases in the rate of application per acre would be profitable on many Louisiana farms.

In view of the probable shortage of fertilizer during the growing season of 1952, farmers are advised to place their orders now for sufficient fertilizer to meet their needs during next year. If delivery can be made now, it should be ac-

cepted and the fertilizer stored in a dry place on the farm.

Legumes, Fertilizers Increase Corn Yields

Dixie wonder peas as a winter green manure crop between annual crops of corn increased the yield of corn from 28 bushels per acre to 43 bushels per acre in tests at the Brazos River Valley Station in Burleson County, Texas.

The use of either Melilotus indica or Hubam clover planted in the fall or Madrid clover planted in either spring or fall increased the yield of corn from 28 bushels per acre to more than 70—an increase of 150 percent. These crops were used in a 2-year rotation with corn on a Miller clay soil, the major soil along the Brazos River bottoms.

Greenwrap Tomato Varieties

The practice of harvesting tomatoes while they are still slightly green in order that they can be shipped to distant markets without serious deterioration in quality has gained widespread popularity among southwestern growers. In an effort to assist producers in finding the best variety for this "greenwrap" trade, the Lower Rio Grande Valley Experiment Station at Weslaco, Texas, has tested several hundred varieties of tomatoes.

According to those experiments, the Valiant variety produced the highest yield of early season fruit and also produced the greatest yield of marketable fruit. Tomato 1000 produced the highest quality fruit and very satisfactory yields in 1951. However, specialists in charge of the experiments believe that this variety should be tested under a wider range of conditions before any definite recommendations are made.

Stokesdale produced high yields of both early and late-season tomatoes which were of good quality. However, a large percentage of the fruit was small.

Improved Rutgers gave favorable yields, but the large number of rough, unattractive fruit produced by this variety made it inferior to others. Manasota produced good yields, but the fruit was rough and of poor quality in the spring season. However, this variety produced very satisfactorily during the fall season.

Rutgers Certified gave good yields of high-quality fruit but was very late in its maturity. Southland gave low yields throughout the season, and its fruit was very low in quality.

Sweetclover Root Borer

A new insect, known as the sweetclover root borer, destroyed an estimated 8,000 acres of biennial sweetclover during 1950 in northcentral Texas.

The insect apparently attacks all of the commonly grown biennial varieties of sweetclover, and heavy infestations have been found in fields of common white, Evergreen, and Madrid varieties. To date, there is no known control for this new pest, although the possibility of using some of the newer organic insecticides is being investigated at the Denton Experiment Station.

Fortunately, neither alfalfa nor Hubam, an annual sweetclover, has been attacked by the borer. Mr. N. J. Norris, Jr., agronomist at the Denton Station, states that it seems unlikely that Hubam clover is resistant to the insect but that, instead, it probably matures early enough to escape damage.

The symptoms of the new pest are similar to those caused by cotton root rot. Plants that are infested wilt and die during late summer and early fall. The roots of infested plants contain many grooves and burrows and small, white worms.

The appearance of this pest is a serious blow to the legume program that has made such rapid progress in recent years, but farmers are urged to continue planting legumes, switching to those which are not attacked by the borer if it becomes prevalent in their fields. The value of legumes in improving the fertility of the soil is so great that southwestern farmers cannot afford to abandon their use.

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