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Mesquite Loses a Battle

Brush-free ranges produce 30 percent more beef than ranges covered with moderate to heavy stands of mesquite, according to results obtained at the Texas Agricultural Experiment Substation at Spur. C. E. Fisher, in charge of control work at Spur, says that grasses grown in the sun contain more sugars and starches and less crude fiber.

Clearing mesquite from range land also simplifies the job of caring for the herd, since strays and cripples are spotted more easily and the roundup can frequently be completed in days instead of weeks. Some ranchmen say this benefit alone is worth the cost of clearing.

Until recently, however, the job of clearing mesquite was a constant one, for killing the top growth by either chemicals or mechanical methods gave only a temporary kill of the brush. Growth buds on the stump, extending 4 to 12 inches below the surface, quickly produced a new and sometimes even thicker stand of plants within a few years. Moreover, clearing out the top growth encouraged germination of mesquite seeds which cover the range country and which may have been lying dormant for years. Thus, the ranchman was faced with the task of doing the job over every few years.

A relatively new chemical—2,4,5,-T—is giving new hope to ranchmen fighting the encroaching mesquite. During the tests at the Spur Substation one application of this new chemical gave 98-percent kill of top growth, and nearly 50 percent of the plants showed

no regrowth more than 2 years later. In addition to the kill of mesquite nearly all annual weeds, such as sunflowers, cockleburrs, and Russian thistles, were also destroyed. Cost of applying the chemical averaged about \$3.50 per acre—about \$2.00 of which was for the chemical.

This is the most encouraging news in the fight against mesquite in many years and appears to point the way toward satisfactory control of this menace, which is estimated to have reduced the potential production of beef in Texas as much as 400,000,000 pounds annually. It is found in moderate to heavy stands on an estimated 55,000,000 acres in 113 counties of the State.

This method of control has proved so effective that it has been approved by the Texas Production and Marketing Administration, and payments under the Production and Marketing Administration program will be made if certain conditions are met in carrying out the practice. Local Production and Marketing Administration committees should be consulted for these requirements, but, in general, the payments will be made only for treating areas where infestation of mesquite is not less than 20 percent and the infestation of other brush not more than 10 percent.

The practice has been approved in all Texas counties lying to the north and west of a line drawn to include Andrews, Ector, Crane, Upton, Reagan, Irion, Tom Green, Concho, McCulloch, San Saba, Brown, Eastland, Stephens, Young, Archer, and Clay Counties.

No experimental work in mesquite control with 2,4,5-T has been done east of this area, and applications of the chemical south of the area in 1950 did not prove to be effective. It is hoped that additional research will develop methods for controlling mesquite in those sections.

The time and method of applying 2,4,5-T are very important in obtaining maximum success, and there are several general suggestions which should be followed. More detailed information may be obtained from C. E. Fisher, Director of the Agricultural Experiment Substation at Spur, Texas, or from ranchmen familiar with the operation.

Time of Application

The most effective kills have been obtained when the chemical was applied as the plants reached the first heavy foliage stage of growth in the spring. This is usually about 40 to 90 days after the first leaves appear. The treatment has also been found to be most effective when applied following a period of at least 60 days during which soil moisture was normal or above. Treatment is not recommended when drought conditions prevail or earlier than 20 days after a drought has been broken by general rains.

The kind of weather at the time of treatment does not appear to be an important factor in the effectiveness of the application. Differences in temperature and relative humidity and even light rains before or after application have not appeared to influence the effectiveness of control.

Method of Application

The most effective method tested has been the application of the chemical with airplanes flying just above the top of the brush or trees. The airplane spraying equipment should be adjusted so as to distribute the spray solution in coarse droplets.

Ground machines can be used and are particularly good for application to scattered stands or in areas around tanks or buildings where airplanes cannot be used.

Kind of Spray Solution

Two-thirds to three-fourths of a pound of acid per acre of a low volatile ester of 2,4,5-T in a mixture of 1 gallon of diesel oil and 4 gallons of water has given the most satisfactory results. Stronger solutions have not increased the kill materially.

Precautions

These sprays containing 2,4,5-T even in trace amounts will damage crops, such as cotton, alfalfa, clovers, grapes, tomatoes, and many others. Thus, extreme caution should be used when applying these chemicals to mesquite in order to avoid damage to growing crops. It should be remembered that when these sprays are applied with airplanes, the spray may drift several miles. Only experienced operators who have the proper type of spray equipment should be permitted to handle these chemicals.

Cotton Hoeing Mechanized

Use of the rotary hoe—a relatively new implement in the Southwest—is enabling many farmers in this area to reduce their costs of chopping and hoeing cotton by as much as 60 percent, according to Fred C. Elliott, extension cotton work specialist of Texas A. & M. College.

The importance of such a saving in labor costs is of special interest this year, since the supply of labor available for chopping cotton is limited. Moreover, the costs of producing cotton this year, including labor, are expected to be the highest of record, and a 60-percent saving of hoeing and chopping costs can mean the difference between profit and loss in this year's operation. It is estimated that more than 10,000 Texas cotton farmers used this means of lowering costs in 1950.

The rotary hoe is available in two styles: a tractor-drawn implement and an attachment to the tractor cultivator. The attachment type is best suited to cotton because it permits cultivation of the middles with the

cultivator sweeps while using the rotary hoe in the row. The implement itself consists of a number of sprockets about 12 to 18 inches in diameter, mounted on a shaft. The teeth of the sprockets are long and slightly curved. The unit for each crop row usually consists of four of these sprockets, spaced 4 inches apart. They are mounted over the row between the cultivator sweeps and, in operation, cover the row itself and about 6 inches on either side. As the machine is moved over the ground the teeth of the sprocket dig into the soil, giving light cultivation in the row.

The rotary hoe is most effective during the first week or two following planting. During this time it can be used to break surface crusts, enabling the cotton seedlings to grow out faster, and to stir up the soil around the young cotton plants, reducing the danger of soreshin. Moreover, during this period the rotary hoe will expose grass and weed seedlings to the action of sun and wind, thus reducing materially the need for hoeing later in the season.

The implement can be used until the cotton plants are 3 to 4 inches high without damaging them. After that, the center sprockets can be removed and the two outside ones used for additional cultivation.

Mr. Elliott says that best results are obtained when the tractor is operated in third or fourth gears at speeds of 4 to 5 miles per hour. Operation at slower speeds is much less effective. The teeth of the sprockets should be set so that they break the surface of the ground to a depth of about $\frac{1}{2}$ to $\frac{3}{4}$ of an inch.

Improved Screwworm Remedy

A new screwworm remedy known as EQ-335, containing lindane and pine oil, has been developed by United States Department of Agriculture entomologists. The material kills maggots deep in infected tissues, as well as newly hatched worms, and may also kill flies attracted to the wounds.

EQ-335 can be applied with a paint brush and will give protection for about 7 days. In

bad cases the process should be repeated in 3 to 4 days and thereafter at 7-day intervals, if necessary. It is particularly good for use on sheep, since it does not stain the fleece. This smear is also useful to protect against infection in wounds, such as those resulting from branding, dehorning, docking, or castration.

Good grass is the cheapest and best food for a dairy cow. Grazing must be supplemented with hay and silage to supply all the forage that cows will eat every day of the year.

“Condition” Cows for New Pastures

Dairymen are urged to “condition” cattle for new, lush, green pastures, especially alfalfa and clover, in order to reduce the danger of bloat.



Usually a feeding of dry hay or stover just before turning the cattle on a new pasture prevents them from eating too much of the succulent, green feed, thus avoiding the formation of excessive amounts of gas and resulting bloat. Even when this precaution is taken, cows should be watched carefully the first few days they are turned on a new clover or alfalfa pasture.

Another rule that should be followed with new, succulent pastures is that once the cattle have been turned on the pasture, they should not be removed except at milking time. If it becomes necessary to take them off the pasture, the same precautions given above should be followed when they are again turned on the lush pasture.

In 3 years' work with beef cattle on alfalfa and alfalfa-grass mixtures at the Texas Technological College at Lubbock, there have been no cases of bloat. Dean W. L. Stangel, in charge of these tests, emphasizes that cat-

tle are always given a full feeding of hay before being turned on the pastures and then are left on the pasture continuously throughout the grazing period.

Farmers who are using clovers or alfalfa pastures may find that some cases of bloat will occur despite all of these precautions. Therefore, they should keep a trocar in a convenient place and learn how to use this instrument to relieve the gas pressure caused by bloat. If treatment is prompt, most animals can be saved by the use of this instrument. A sharp jackknife can be used but is much less desirable than a trocar.

Dairy Herd Improvement Association records kept by Texas dairymen in 1949 show that dairy cows producing 224 pounds of butterfat returned \$164 above feed costs, while cows producing 475 pounds returned \$497 above feed costs.

Pasture for Hogs Cuts Feed Costs

Swine growers can reduce their feed costs in growing spring-farrowed pigs by at least 50 percent if plenty of good pasture is provided, say specialists at Louisiana State University.

These specialists point out that hogs on clover pasture will continue to make rapid gains until the clover dies out, which is usually about June. The hogs can then be placed on oat fields to clean up after oat harvest, while the clover field is being plowed and seeded to sweet Sudan grass. This Sudan grass will then furnish grazing until the hogs are ready to be put in the corn field to hog-off the corn.

Wilt-Resistant Watermelons

Watermelon varieties resistant to Fusarium wilt have been developed by the Texas Agricultural Experiment Station at Jacksonville, Texas. In many Texas fields this disease has been causing 100-percent losses on varieties such as Black Diamond and Cuban

Queen. The disease has been particularly damaging on the sandy soils of east Texas.

Results of last year's tests carried on near Swift, in Nacogdoches County, indicate that Blacklee, Ironside, Congo, Garrison, Dixie Queen, and Missouri Queen are highly resistant to wilt and produce good yields of marketable fruits.

Kleckleys No. 6, Klondike R7, and Leesburg (Imp.) are superior in flavor and well suited for home use and local markets.

Hawkesbury is early, prolific, and has fair flavor that meets the approval of the early local market.

Miles and White Hope produce small fruit representing the ice-box type of watermelon. The high sugar content of the Miles variety made it much preferred in an evaluation test.

New Tomato Variety

Golden Sphere, a new yellow tomato variety developed at the Tomato Disease Investigations Laboratory at Jacksonville, Texas, has been released to seedsmen for increase in 1951. Additional seed for home gardeners and commercial producers should be available in 1952.



The outstanding characteristic of the new variety is its high resistance to Fusarium wilt—a disease that frequently takes a heavy toll of the tomato crop. The new variety also produces an early crop of large tomatoes, spherical in shape, fleshy, and dark yellow. They are equally satisfactory for fresh eating, juice, and for home canning.

The variety was also tested in other tomato-growing areas of Texas but, to date, results suggest that it is best adapted to growing conditions in east Texas.

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