

# AGRICULTURAL

# NEWS LETTER

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## FORAGE YIELDS—THE MEASURE OF RANGE CONDITIONS

The true value of range land is its productivity in terms of animal products, such as beef, wool, or mutton. Ranches, therefore, are bought and sold on the basis of the number of livestock they can support. The productivity of a ranch may be affected by the adequacy of stock-water and by management practices such as breeding of livestock, fencing and shelter, intensity of grazing use, and the type of livestock marketed; yet, the factor which finally determines livestock production is the amount of forage produced. In turn, forage production varies considerably under the effect of a number of factors, the most obvious of which are climatic. The great variation which can and does occur in volume production of forage under identical rainfall and seasonal conditions often is not fully recognized. Factors causing such variations and the steps which ranchers may take to reduce them are analyzed by J. S. McCorkle, Regional Ranch Division Chief, Soil Conservation Service, Albuquerque, New Mexico, in an article which appeared in the June issue of *The Cattleman*.

Mr. McCorkle points out that the productivity of range land of a given type of soil may be determined largely by its plant composition—the plant species that are present and how much of the total plant cover is made up of each species. This factor is especially important in range areas because plants differ considerably in the amount of forage produced and in the season of the year when animals will eat them.

A second factor influencing productivity is the plant cover, usually called density. Often a relatively thin stand or low density will produce as much forage as the thicker stand because the available moisture is no

more than the thin cover can use quickly and efficiently. Many species increase in density when grazing pressure prevents them from making good top growth. The optimum density of cover varies with native grass species, of course, just as with field crops.

The real measure of the value of range land is the tonnage of edible and nutritive forage produced. Although range feed is not harvested so that the product can be readily measured and weighed, the rancher may learn to estimate the tonnage of forage produced on his range lands, just as a hay farmer learns by experience to estimate his hay crop while still standing. It is important that a rancher be able to estimate his forage production, because a small difference in production per acre may make a considerable difference in the number of cattle carried on the ranch. A relatively small difference in volume production per acre may be especially significant on a range where the total yield per acre is already quite low.

The small difference in volume yields can be detected by a careful observer who trains himself to look for it. It is not a task for a casual observer, says Mr. McCorkle, because careful attention must be given to such things as height of stems and leaves, the thickness of the clumps of grass, the spread of the plants or the mat they make on the ground, the number of seed heads produced, and the color the herbage takes on in growth and curing. These and other factors tell the man who is skilled in reading range signs how much grass there is on the ground.

As ranges depreciate, there are various kinds of changes that take place. One of the most important of these is a change to a different

type of plant cover. A shift from one species of grass which is edible and nutritious to another similar in appearance but of little or no feed value is likely to occur where ranges are overgrazed. Such changes are not so apparent, but they may cause considerable loss in volume of production.

The evident differences in the volume of forage on areas of range with the same apparent production potential have prompted study by Soil Conservation Service technicians to measure the differences and to determine the significance of such variations in terms of the carrying capacities of various ranges. Some results of studies which were made in New Mexico are presented by Mr. McCorkle to illustrate several important points in considering volume of forage as a measure of range values. The results of these studies are applicable to all range areas of the Southwest.

The results obtained from one study which was made of two adjacent pastures separated only by a wire fence are typical. There was a decided difference in the plant cover on opposite sides of the fence. Blue grama and western wheatgrass made up most of the vegetation. Three-quarters of the total cover on the better range was western wheatgrass and one-quarter was blue grama. The density of plant cover was only slightly greater on the better pasture. Clipped two inches above ground, the better range yielded 1,055 pounds per acre, while the range in poor condition yielded only 404 pounds of grass, or a little less than one-half as much available forage. The difference in yield per acre was enough to maintain one cow for a month in winter or to provide a month's good green grazing for a yearling.

Such results are significant in that the increase in volume production of forage accompanied increased value of the grass plants. The better ranges studied were making good use of the moisture and producing a greater tonnage of forage. Comparing results of studies made by the SCS, Mr. McCorkle says that it appears that a change in composition of plant cover would not affect this difference in the ability of plants to respond to favor-

able weather factors. It is stated, however, that under normal rainfall the yield differences observed might have been less. Furthermore, these differences may to some degree reflect past grazing practices. It seems evident, he says, that failure on the part of the operator of the "poor" range to note and be guided by the needs of the forage plants, especially the need of maintaining sufficient growth for survival, resulted in a marked decline in pounds of forage produced on the range. The wide variation in forage production between the two pastures mentioned above is sufficient to point out the importance of adjusting management practices to get the higher yield.

The fact that good management on ranges can more than double the tonnage of forage is food for thought for southwestern range operators, says Mr. McCorkle, especially when the management involves no outlet of cash—only stocking, so as to leave a generous residue of litter, and practicing some deferred summer use. Handling the range in such a manner is like leaving one dollar on the range this year to make two next year. Mr. McCorkle's conclusion is that, "It is just good business to be generous with the range."

## FARM MANAGEMENT

### Controlling Root Rot in the Blacklands

Root rot occurs almost entirely on a black, waxy upland soil which has been in cotton for a long time. In the Blacklands of Texas, farmers sometimes say that a tract of land "dies cotton," meaning that the soil-borne disease likely will thwart any attempt to grow a cotton crop. In an article prepared on this subject by William R. Elder, Survey Supervisor, Soil Conservation Service, Temple, Texas, and published in the May 29 issue of *The Cotton Gin and Oil Mill Press*, the character of root rot is defined and some suggestions offered for its control. According to Mr. Elder, root rot is a fungous disease that lives in the soil and attacks tap rooted plants. Cotton, the most prominent tap rooted plant in the Blacklands, has suffered the greatest damage. Fibrous rooted plants—corn, small grains, sorghum, and prairie grasses—are not affected by the disease or do not promote its growth

or spread. In the past, growing root-rot resistant plants has been the only sound means of using the Blacklands after the disease has made cotton growing unprofitable. After a few years in the resistant crops, the land again could support cotton for a time.

In the past few years, according to Mr. Elder, soil conservation districts have encouraged the use of vetch and Austrian winter peas in the Blacklands. These crops provide winter covering to prevent erosion and are turned under in the spring to add organic matter and nitrogen to the soil. More recently, Hubam clover has been used to provide grazing, profitable seed production, and soil improvement. Cotton planted on Blacklands following crops of these soil improving legume plants plowed into the soil was almost free of root rot. Experiments have shown that Hubam clover turned under preceding a cotton crop will reduce cotton losses due to root rot as much as 85 per cent. About three crops of Austrian winter peas and vetch must be turned under to reduce root rot to that same degree.

#### Treatment for Coccidiosis

Coccidiosis, a disease which in some areas causes more deaths among chicks from 5 to 14 weeks of age than all others combined, can be effectively and economically controlled by properly mixing sulphur and charcoal with the chicks' feed, according to the Louisiana Agricultural Extension Service. This method, which was developed in several years' research at the Louisiana Agricultural Experiment Station, was used by 79 demonstrators in 11 Louisiana parishes last year in managing 11,968 chicks with a loss of less than two percent from coccidiosis. For control of this disease, it is recommended that chicks be kept in the brooder or the brooder house until they are six to seven weeks of age. The brooder should be kept dry and clean. Three or four days before the chicks are to be turned out on the ground—but in no case before they are six weeks of age—one should begin feeding flowers of sulphur and No. 10 hardwood charcoal by thoroughly mixing five pounds of each with every 100

pounds of the chicks' mash. Feeding at this rate should be continued until the chicks have been on the ground for three or four days, which will be about a week after the sulphur and charcoal were started. At that time the chicks should be on grain in addition to their mash. This will require two feeders—one for mash containing five percent charcoal and one for the grain. If the chicks are kept on an all-mash feed, the amounts of sulphur and charcoal in every 100 pounds of mash should be reduced to 2½ pounds each. Feeding at this rate should be continued until the chicks are 12 to 14 weeks of age, at which time the use of sulphur and charcoal may be discontinued.

#### 2, 4-D Dust in Weed Killing Flights Prohibited

Dusting of weed-killing 2,4-D dusts from airplanes has been prohibited by D. W. Rentzer, administrator of the CAA, at the request of the Department of Agriculture, following many complaints that drifting dust had injured cotton and other broadleaved crops. When waivers are issued to operators using aircraft for dusting or spraying, a special provision will be included which will prohibit the use of 2,4-D in dust form. The restriction will not apply to 2,4-D sprays or to insecticide and fungicide dusts such as are used to destroy the boll weevil and specific plant diseases.

## FARM PRICES

### New Support Prices Announced

A program to support the price of 1948-crop rice at 90 percent of parity as of August 1, 1948, was announced recently by the United States Department of Agriculture. Non-recourse loans will be made available by the Commodity Credit Corporation to producers and associations of producers, from time of harvest through December 31, 1948, on rough rice stored on farms and in approved warehouses. The loans will mature on April 30, 1949, or earlier upon demand from the farmer.

CCC non-recourse loans, at \$5.00 per cwt. for sound dry edible beans and \$3.50 per cwt.

for sound whole peas of standard varieties, except \$3.25 for Colorado White, will be made available to producers and associations of producers from harvest time through December 31, 1948. Stocks delivered to the CCC as collateral for loans must grade No. 2 or better.

Complete information on support prices is available from local Production and Marketing Administration offices.

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### Farm Land Values in Texas Reached Record Levels, Sales Showed Decline, During 1947

During 1947, prices of farm land in Texas advanced to record levels in three sample areas included in the land market study made by the Texas A. & M. College and reported by John H. Southern and Joe R. Motheral in Progress Report 1119. In two of the three counties for special study—Ellis, Jones, and Nacogdoches—prices reached the highest level since the sales summaries were inaugurated in 1920. Only in Ellis County, in the Texas Black Prairie, have prices failed to reach an all-time high. In contrast with these price trends, the volume of sales declined substantially during 1947. Both number of sales and the acreage involved were down in 1947 to about the levels of the first war year, 1942. Farmers who were owner-operators bought a majority of the tracts sold, as they have done throughout the war and postwar years. Slightly less than half of those who sold land were farm operators. Little change occurred in the proportion of cash sales during 1947, which ranged between 40 and 50 percent of all sales in the three counties.

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## COMMODITY NOTES

### The Meat Situation

Meat production in 1948 probably will be around 10 percent less than the 23.4 billion pounds produced in 1947, according to the United States Department of Agriculture. This expected output will be the smallest since 1941 but larger than in any year prior to that time. Production of each class of meat

is expected to be smaller in 1948 than in 1947, but the largest reduction will be in beef.

Department of Agriculture forecasts indicate that hog prices are likely to rise more than seasonally this summer, since the summer drop in marketing is expected to be more marked than usual. Prices of fed cattle are expected to rise seasonally. Prices of grass cattle may decline less than usual, because a strong demand for feeders is in prospect if feed crops are good. Prices of lambs are likely to be lower during the latter part of the year than during the early part of the spring marketing season.

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## ANNOUNCEMENTS

### Meeting

The Annual Louisiana State University Farm and Home Week will be held on the University campus from August 10 to 12. Short courses on many aspects of farming will be offered by the Agricultural Extension staff.

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### Publications

New Mexico Agricultural Experiment Station, New Mexico College of Agriculture and Mechanic Arts, State College:

*Improved Strains of Cotton for New Mexico*, Bulletin 337, by G. N. Stroman.

*Increasing Irish Potato Yields in New Mexico*, Bulletin 342, by J. V. Enzie and J. R. Eyer.

*Low Protein Roughage for Fattening Cattle*, Bulletin 343, by J. H. Knox.

Texas Agricultural Experiment Station, Agricultural and Mechanical College of Texas, College Station:

*Sales of Farm Land in Three Texas Counties, 1947*, Progress Report 1119, by R. D. Lewis.

*Crossbreeding to Increase Weight of Cattle in Coastal Areas*, Progress Report 1121, by R. D. Lewis.

*Newcastle Disease is Costly to Poultry Raisers*, Progress Report 1122, by R. D. Lewis.

Copies of these publications may be secured by request to their respective publishers.