

TECHNICAL NOTES

COMPUTING AND REPORTING THE PRODUCTION OF BEEF ON FOREST RANGES AND PASTURES IN THE SOUTH

O. E. SELL

Chairman, 1952, Committee on Range Evaluation, Southern Section, A. S. R. M.

Early in 1952, a committee was appointed by JOHN T. CASSADY, first chairman of the newly organized Southern Section, American Society of Range Management, to look into the matter of range and pasture evaluation in the South. He charged the committee with a solution to the following challenging questions:

Overall—what is meant when a range manager says his range produces 20, 50, or 150 pounds of beef per acre?

More specifically

1. Should heifer calves selected for replacements be classed as beef produced?
2. Should culled cows be classed as beef produced?
3. Should the gain made by replacement yearlings and young brood cows be classed as beef produced?
4. Should a seasonal range or pasture be credited with full gains made during the growing season?
5. If full gains are credited to growing seasons ranges, what credit goes to cold season ranges where the breeding herd is maintained and where gains often turn to losses?

Chairman Cassady's final request was that a standard method be worked out for computing the pounds of meat produced per acre as a basis for more accurate comparison of different types of range and pasture in the South.

Committee members were appointed as follows: L. K. HALLS, U. S. Forest Service, Tifton, Ga., E. M. HODGES, Range Cattle Experiment Sta., Ona, Fla., O. E. SELL, Georgia Experiment Station, Experiment, Ga., and B. L. SOUTHWELL, Coastal Plain Experiment Sta., Tifton, Ga.

The committee met at the Coastal Plain Experiment Station at Tifton, Georgia, on June 13, 1952. Others participating in the meeting were: GLENN W. BURTON, Coastal Plain Experiment Station, M. E. McCULLOUGH, Georgia Experiment Sta., Experiment, Ga., and RALPH WILLIAMS, Extension Animal Husbandry, Tifton, Ga.

Separate reporting systems were drawn up for year-round breeding herd experiments and for short season "fattening" or finishing cattle experiments. Because monetary values are constantly changing, results of range experiments should be reported first in terms of physical animal production per acre of range or pasture land. Monetary values can then be assigned at any time.

Yearlong or Long-season Experiments with Breeding Herds

At least half of the grazing experiments on range lands deal with year-long or long-season management. The chief objective of this type of enterprise is to produce beef calves at low cost. Even though calves are the main source of income, probably 50 to 75 percent of the T.D.N. supplied by the range goes toward the maintenance of the herd. Therefore, range production criteria measuring only cattle gains under-value the production of and contribution of feed nutrients. Herd culling contributes toward saleable products so that seasonal and yearly production of cull stock must be considered in the production obtained from the range. As

brood cows are culled from the herd, replacement heifers must be raised; their season-to-season net gains must also be included in the overall calculation of range production. The items included in the calculations should be shown in all published reports of beef production.

The following detailed records should be obtained each year, and later averaged for the number of years of the experiment. Some of the items are more essential than others but all records should be kept if possible.

1. Calf production
 - a. Average weight at weaning time or end of grazing season (or when cow and calf are separated)
 - b. Average daily gain for the entire season (need birth weights) and for different periods during the season
 - c. Gains per acre of range (total—do not deduct birth weight but specify this point)
 - d. Percent calf crop, and survival or percent at weaning time
 - e. Finishing market grade on foot (choice, good, common, or utility)
2. Brood cows and replacements
 - a. Average beginning and finishing weight and net change
 - b. Weight gains or losses by periods
 - c. Average daily rate of gain or loss for entire season and by periods
 - d. Weights and net gains or losses shown separately for cows with calves, for non-breeders, and for replacement heifers
3. Total livestock production
 - a. Brood cows—number carried per acre of range, or number acres needed per cow
 - b. Percent calf crop weaned

- c. Calf weight produced—(1) per individual calf, (2) per acre of range
 - d. Cow weight change—net seasonal
 - e. Per acre net live weight gains—(1) calves, (2) cows that had calves, (3) non-breeders plus heifer replacements
4. Annual inventory of pounds of cows, calves, and heifers
 5. Sale of culls, etc., over a period of years and annual rate of replacements with reasons
 6. Kinds and amounts of supplemental minerals, concentrates, and other feeds, and when fed
 7. Dates of actual grazing on range and supplementary pasture, forage condition changes during seasons, and calculated T.D.N. produced, if possible

Other items that should be obtained and recorded are: range and forage species present and used, type of animals and their general management and breeding program,

weather data, range operations (clearing, seedbed preparation, fertilization, seeding, weed control, etc.), supplemental feeding, forage and feed analyses.

Short-season Experiments with Steers

The following data should be obtained and reported:

1. Average steer weight at start and at finish
2. Average steer gains for the experimental period
3. Average daily gain per steer
4. Grazing capacity of the range or pasture
5. Calculated T.D.N. produced
6. Condition grade of steers at start and at end of experiment

Wherever possible, supplementary studies should be conducted to determine the amount of forage present and consumed by the livestock (agronomic cage and mower strip method), forage composition, and forage intake and digestibility by use of animal meth-

ods. Studies should also be made on feed supplementation and the effects of range or pasture management on the efficiency of forage utilization.

The committee report was presented to the annual meeting of the Southern Section at Tifton, Georgia, on October 4, 1952, and referred to a new committee under the chairmanship of M. E. McCULLOUGH. With the addition of the following section on research needs, the report was approved by the Southern Section at its annual meeting in Lake Charles, October 16, 1953, with the recommendation that it be published in the Journal.

Needed Research

1. Seasonal changes in nutritive value of forage
2. A uniform method for expressing nutritive value (Present use of T.D.N. is questionable)
3. Proper type and quantity of supplement for range, especially protein versus energy