



Controlled Rotation Grazing Unit

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Many cattle operations experienced bankruptcies and reorganizations in the early to mid-1980s. In response to this reality, we initiated the controlled rotation grazing unit (CRGU) on the Pasture Demonstration Farm as a four-paddock unit in 1983. It was later subdivided to 12 paddocks in 1986 and then 25 paddocks in 1989. This project was designed to demonstrate low overhead in an upper level forage and beef production unit. This meant operating without traditional “heavy metal” such as tractors, mowers, drills, hay balers, etc. Our equipment inventory consists of a pickup, a four-wheeler, a fertilizer spreader (owned or rented), a homemade salt/mineral feeder/fly rub, and a hay feeder. Outside resources such as seed, fertilizer, hay, supplemental feeds, etc. are necessary, available in the region, and “purchased in” when necessary.

The CRGU land area was planted to Midland bermudagrass in 1965 to revegetate former crop fields and slow soil erosion. Midland still serves as the base forage for the unit. Maton cereal rye and Marshall annual ryegrass are broadcast overseeded between fall and February as the bermudagrass is grazed by the cows. Barley and oats are broadcast from February to March because of their increased productivity over rye at these planting dates. These species were chosen for overseeding after experimentation with many varieties and other species. If phosphorus and potassium are needed, they are applied during the overseeding operation. These winter forages increase production, green forage season length, forage quality, and beef yield per acre.

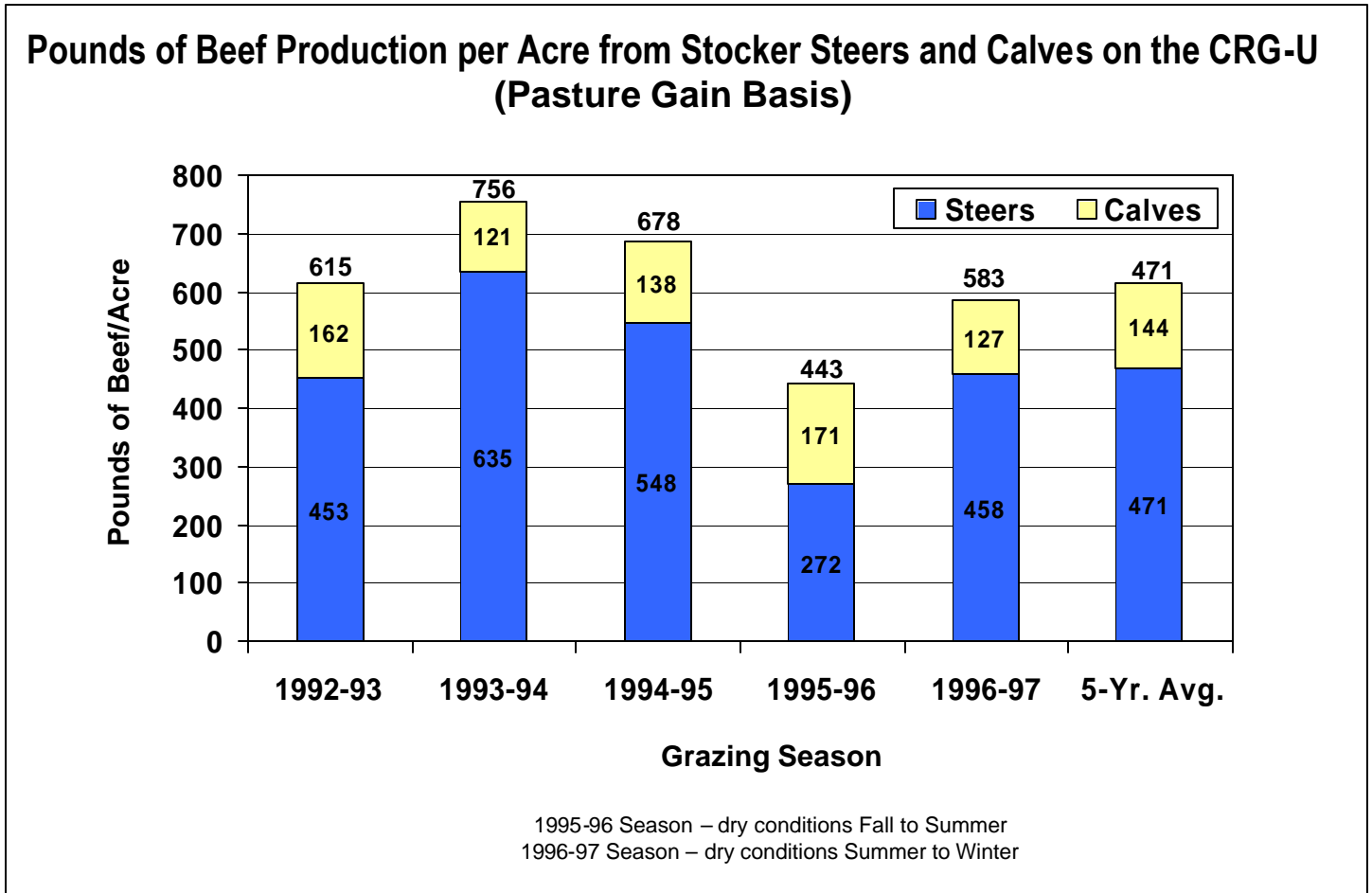
We apply 100 to 118 pounds per acre of actual nitrogen (N) after a winter pasture stand is assured and a freeze has “browned” the bermudagrass. This may be as early as November or as late as February. We also apply 100 pounds of N on some paddocks in April, some in May, and to all the remaining paddocks no later than mid-June. This spreads bermudagrass production peaks and quality into summer. Total N fertilization on the CRGU is 200 to 218 lbs./acre in a year.

The seed and fertilizer cost for our pasture production is \$100 to \$120 per acre per year, dependent upon price fluctuations. These inputs produce about 8,000 pounds of grazed forage per year at a direct cost of about \$25/ton. This does not include the costs for the pickup, four-wheeler, stock water, fences, tools, land, etc. which would need to be added to calculate total costs.

The forage grown is rotationally grazed by two groups of cattle: stocker steers and a resident cow-calf herd. The steers receive the best quality and the greatest volume of forage by rotating through a paddock first. The cow herd follows and gets what is left, and still wean 450 to 600 lb. calves, dependent upon breeding season and weaning date. Cows perform much of the work often done by mowers and hay balers. We plan stocking rates so that steers consume about two-thirds of the projected grazeable forage and the cow-calf herd gets the leftover third. Precipitation amounts and distribution largely dictate the accuracy of our projections.

The pounds of beef produced per acre over the last five years is presented in Figure 1, with the relative contributions of the stocker steers and weaned calves from the cow herd. The first three years had favorable precipitation patterns and produced an average of 683 pounds of total beef per acre. The last two seasons included substantial droughts, and total beef production was 513 pounds per acre. The five-year average was a total of 615 pounds, with 77 percent of the total produced by the stocker steers which were allocated roughly two-thirds of the forage.

Figure 1. The last five years



The CRGU serves as a demonstration of an alternative method of production. All expenditures of the unit are made to improve productivity, make the unit easier to operate, or to improve time management. Other producers can use the same basic philosophy, but will need to make adaptations for differing resources, time constraints, and management ability.



A Noble Foundation employee broadcasts rye and ryegrass seed and starter fertilizer on bermudagrass sod. The cattle tread in the seed.



Steers are used as first grazers for upper level gain. The cow-calf herd is used as second grazers to complete utilization of forage.