

MANAGING A MULTI-FORAGE ROTATIONAL STOCKING UNIT WITHOUT FARMING EQUIPMENT AND WITH THE ADDITION OF ECONOMICAL FRINGE BENEFITS

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ABSTRACT

A specialized introduced forage rotational stocking grazing unit was managed without usual grassland farming equipment and with various alternative management and production techniques as fringe benefits. The forage production techniques have been successful for many years. Livestock production and economic perimeters have been average to above average. The greatest sold beef yield has been 713 pounds of beef per acre. That is excellent considering the low-capital overhead management style of the unit.

KEYWORDS

Rotational grazing, bermudagrass, crabgrass, overseeding, alternative techniques, rye, ryegrass, beef yield

INTRODUCTION

The vast majority of the forage of the eastern half of the US is produced from numerous introduced species. Much of that acreage, if not most, is grassland farmed with various levels of somewhat costly farming equipment input. Other high cost and more time and labor intensive stock production techniques and inputs are also used. Many of these high cost input units have met their demise, or become unnecessarily economically and labor stressed.

The overall objectives of this Controlled Rotational Grazing demonstration and research unit have been to grassland farm the bermudagrass (*Cynodon dactylon*), overseeded winter annual grass, legume and summer grass mixture forage base without usual farm equipment and to use alternative, lower cost, lower labor beef cattle management techniques and inputs. Farming equipment consists of a pickup vehicle, a four-wheeler ATV (all terrain vehicle) which is optional, and a pull-type broadcast seed/fertilizer spreader (owned or rented). Cow-calf and stocker steer beef units are managed without feed troughs, etc., to control unnecessary expenses and labor. Part of the objectives have also been to produce at upper level, to result in lower cost of beef production per unit with few returns going to pay for capital overhead items. Various research and popular press publications are available to detail much of the information from this long-term producer friendly grazing unit (Dalrymple, et al., various dates).

MANAGEMENT PROCEDURES

This demonstration-research unit has been a grazing cell and beef cattle operation for 13 years. It has been periodically updated as things were learned, to have it conform more closely to the overall objective. It is presently a 25-permanent paddock unit with four permanent water points. There are three paddock sizes to evaluate the management and effects in the event all paddocks were of one of those sizes. Strip grazing is practiced on stockpiled forages during winter at the equivalent of about 240 paddocks per whole grazing unit.

Forage Management. Bermudagrass (c.v. Midland) is the major forage base on these eroded, low fertility, old cotton farm soils. Overseeding with various winter annual and perennial forages adds to production, length of green season, and quality of forage.

Broadcast overseeding with ATV power begins in the fall, in September, continues through winter and is concluded in March of spring, if not before. Cereal rye (*Secale cereale* L., c.v. Maton) is planted at 100 pounds live seed per acre during September through February. Barley (*Hordeum vulgare* L., c.v. Post) is planted during February to conclusion in March. Annual ryegrass (*Lolium perenne* L. ssp. *multiflorum*, c.v. Marshall or others) is broadcast overseeded in January on all paddocks planted to cereal rye before that time and on all paddocks planted during January to March (fall plantings of annual ryegrass have not produced consistently good results). All broadcast seedings are treaded in by beef cow units as they graze stockpiled bermudagrass. All overseeded winter pastures receive 100 to 118 pounds of actual nitrogen per acre plus phosphorus and potassium as the need is indicated by soil test results. Nitrogen fertilization is done after bermudagrass is frosted and there is a winter grass stand present (November to March).

Many summer season annual forages have been broadcast planted and treaded into the bermudagrass in efforts to produce higher quality summer forage in the bermudagrass. The best success was with crabgrass (*Digitaria ciliaris*, c.v. Red River and naturalized ecotypes), and secondary success with johnsongrass (*Sorghum halapense*) and annual sorghums (*S. bicolor*). Failures are too numerous to mention. Bermudagrass is fertilized with 100 pounds actual nitrogen per acre, in different paddocks, during April to June to prorate forage production peaks and extend quality over a two month time from the earliest application.

Livestock Management. The unit is utilized by a year long commercial Braford type crossbred beef cow/calf herd and a winter to mid to late summer stocker steer herd. Expected forage production is allocated at two-thirds for steers and one-third to cow-calf units.

Steers are stocked initially as the first winter pasture becomes available. Stock are added until the projected stocking rate is achieved. Steers are grazed as first grazers and topgrazers. They receive all the usual veterinarian practices, salt, mineral, growth implants, ionophore in mineral or summer feed and supplemental summer feed as quality declines. Any such practices are employed if they are projected to result in added net profit. External parasites are controlled with a homemade salt and mineral feeder and fly, lice and tick wipe combination tool, thus saving much labor, expense and stock and human stress.

The spring calving cow-calf unit grazes year long on the unit as second grazers (they get leftovers), tread-in grazers and as winter grazers of stockpiled bermudagrass (for hay). Their job is to use trash forage, to produce a calf and to serve as equipment replacements. The first green grass for cows is winter forbs or the rye stubble at winter's end and the last forage is the dry stockpiled bermudagrass of winter. Calves are creep grazed and implanted, but not creep fed. Cows get the usual veterinarian medicine practices, salt, mineral and a fly wipe, as do steers. Many alternative production inputs, too numerous to mention, are employed. Production techniques and stock density eliminate the need for any weed control, minimize hay feeding

and stock pesticide inputs. Nutrient recycling is managed purposefully with high density grazing.

RESULTS AND DISCUSSION

The basic production technique, i.e., no usual farm equipment, and alternative techniques have been successful many years. These techniques have certainly been variable with seasons and our knowledge and timeliness of management. The unit usually produces 2,000 to 3,000 pounds per acre, more or less, of winter phase forage and 5,000 pounds per acre, more or less, of summer phase forage to total 8,000 pounds per acre, more or less, of yearly grazed forage.

The two-herd system of first and second grazers, and cows as equipment replacements, have done very well. Steers have a long term average of 1.9 pounds average daily gain. Cows have a long term conception rate of 89% and produce a calf of 450 to 615 pounds weaning weight depending on the breeding season and production year.

The unit has regularly produced over 600 pounds of beef per acre in recent years. The highest production was 713 pounds per acre of sold beef with about 20% of that from calves and 80% from stocker steers. Beef cost per pound was \$0.13 for direct pasture costs with little income going to pay for overhead capital costs. More information is available on request.

REFERENCES

Dalrymple, R. L., B. C. Flatt and F. W. Dobbs. Various dates. (Articles on management of the controlled rotational grazing unit). Noble Foundation, Agricultural Division, Ardmore, Oklahoma 73402, USA.