Beef Cattle Cow/Calf Production on Reclaimed Surface Mined Land
Optimizing Production 1997-2004

Co-Investigators :

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Project Summary

The focus of this project is to demonstrate efficient and profitable production of beef cattle on surface mined land in southwestern Virginia. During this cycle an added dimension has been the employment of management-intensive grazing techniques. A herd of forty-two beef cows and ten replacement heifers owned by Penn Virginia Coal are being maintained at the Powell River Project demonstration site in Wise County. The owners have provided pasture; day to day care and management, supplemental feed as needed, and labor to care for the cattle. Virginia Tech, through the co-investigators, has provided advice and assistance with breeding and health management, marketing, maintenance of pasture productivity, record keeping, selection of sires as needed and strategies for obtaining replacements over time. The overriding goal is sustainable beef cattle production with minimum inputs so that costs can be kept low enough to generate profit. .

SCOPE OF WORK

Introduction

The Powell River Project has successfully demonstrated that reclaimed mine land pastures are well suited to beef cattle production. Data collected between 1980 and 1991 showed that the land and forage resource could be used by beef cows to produce feeder calves at a profit and that this type of use was sustainable with minimal inputs of seed, fertilizer, lime and harvested feeds. Practices defined by Powell River Project programs are now used by producers in the region and feeder calf production is increasing in the region.

A second phase of cattle production, growing and distribution of bred replacement heifers was conducted each year from 1992 through 1995 when forty-five to sixty yearling heifers were grazed at the project site. These heifers were selected from herds outside the region, brought to the site, bred to selected bulls and sold as bred females at auction at the end of the grazing season. Efforts were made to select cattle that would contribute to improving the genetic potential of commercial cattle in the region. Special emphasis was placed on the use of sires selected for calving ease so that the probability of a successful first pregnancy in these virgin heifers could be enhanced.

In the spring of 1996 sixty cow/calf pairs were purchased and placed on the project. The calves were marketed during the fall of 1996. The cows were rebred during the summer of 1996 using a combination of artificial insemination and natural service. In 1997 the

decision was made to decrease the herd to approximately 30 cows as additional mining in the area usurped a significant proportion of the grazing lands. These cattle have grazed the existing pastures at the demonstration site along with the purchase of some hay and corn for supplemental winter feeding. Steps have been taken to make full use of the forage resources available on site for year round feeding of the cow herd. Fencing, handling facilities, water supplies and other essential inputs are available on site or have been enhanced as needed.

The operation of this cow/calf program has sufficient scale to generate income and to make efficient use of resources and labor. It is comparable in scope to many similar operations that have been established in the region due in part to prior programs of the PRP. The intent of this report is to demonstrate the most cost effective and profitable management strategies for operation of a beef cow-calf herd on reclaimed surface mined land and to demonstrate ways to enhance the sustainability and profitability of such an enterprise. Techniques for management-intensive grazing have been employed.

Justification and Objectives

Livestock production has been demonstrated to be a productive use of reclaimed land. In recent years, more operators have obtained use of reclaimed land by lease or other means and the number of beef cattle in the coal producing counties has increased as more operators have recognized economic opportunity. The bred heifer project of the PRP aided in this expansion and many of the heifers have gone into herds in Wise, Dickenson and Scott counties. However, it appears that there are opportunities to enhance profitability of these operations by making greater use of the basic forage resource and by employing the best management practices available to beef producers. A primary example of such strategies is the reduced use of harvested feed such as hay by better management of the forage resource to provide near year-round grazing. Also, the quality of the animals can be enhanced by use of improved genetics. Marketing procedures have been improved and greater use of proven management practices and record keeping is beneficial. The employment of most or all of these strategies and procedures has been the objective of this demonstration project. The project has the additional benefit to the coal industry and region by showing that reclaimed land can make an important contribution to the economic life of the community. We are now in the phase of the cattle cycle where numbers are low and prices are quite high. This is a time when significant expansion of beef cattle production might occur in the area as opportunities for profitability are perceived.

Methods and Procedures

Forty-two beef cows and their calves are currently in place at the project site. Ten replacement heifers were weaned and begun development off site over the early winter, then returned to the site to be bred this season. Co-investigators working with Penn Virginia Coal personnel have developed a management and breeding plan for the herd which is being grazed at present. The cows and calves are grazed on the property throughout most of the year with only supplemental feeding when there is snow cover. Calves are sold about November 1. Calving commences about March 1.

Results

Figures 1- 3 demonstrate the progress made in production of cattle from 1997 through 2003:

Figure 2. Changes in weaning Weights, Powell River Project, 1997-2003.

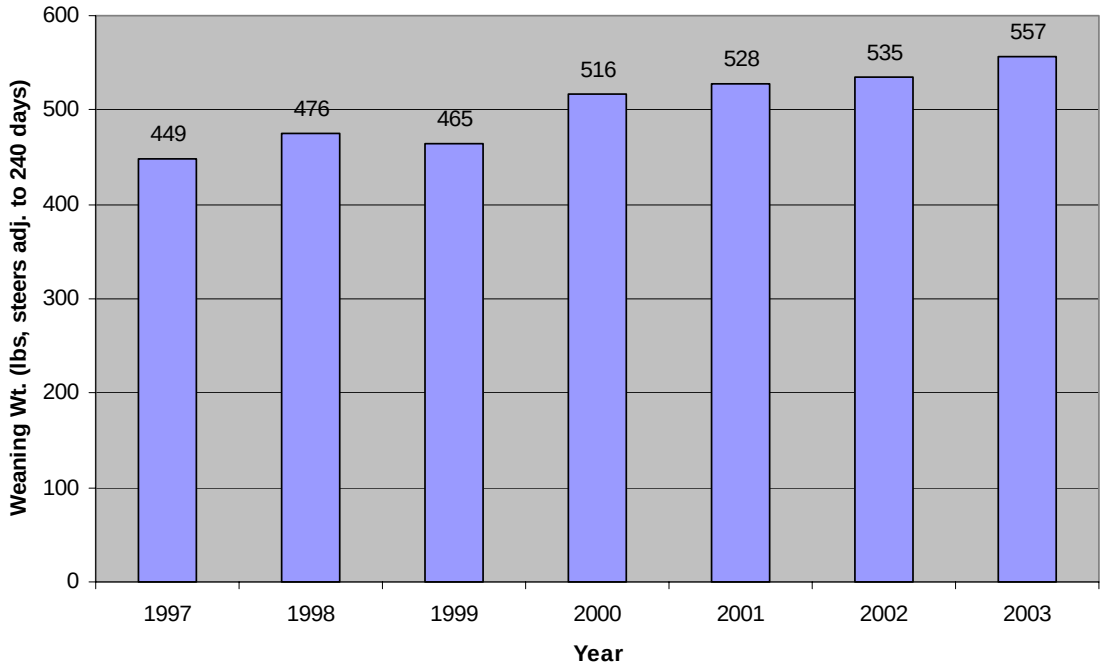
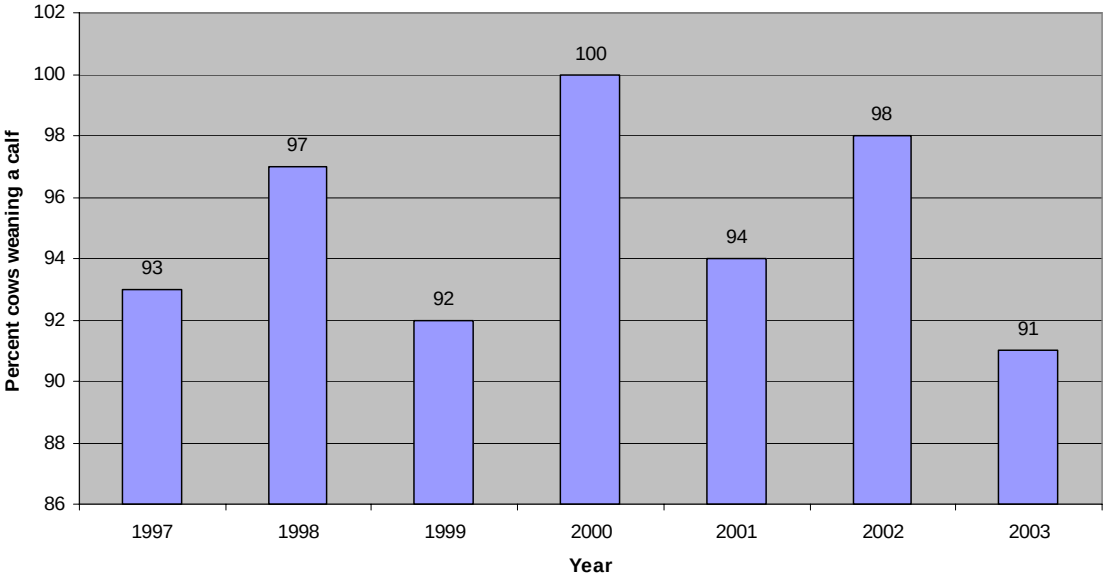


Figure 3. Percent of cows exposed to breeding in prior year weaning a calf the subsequent year (cows culled for age, unsoundness or production excluded).



These figures demonstrate a clear trend in optimizing production of beef on reclaimed strip-mined land. On the same acreage female numbers have been increased, weaning weights have been augmented and although there is some variation, reproductive performance has been maintained.

Major approaches to achieving these ends have included:

- Management intensive grazing principles have been implemented.

- A herd health program to minimize disease losses has been further refined

- By use of artificial insemination and natural service, cows have been bred to sires that have the potential to maximize growth and marketability of the end product - weaned steer and heifer calves.

- A program of fencing, fertilization, overseeding and controlled grazing has been installed to maximize efficient forage production and utilization.

- Water facilities have been improved to provide for high quality fresh water for cows and calves.

Summary

This demonstration is a highly visible example to area producers of what can be accomplished using available information in the most effective manner. It is hoped this will lead other producers to adopt techniques to enhance the productivity of their operations.