

Keeping the Range in Range Cattle Production

Ray Banister

Recently I was talking with a NRCS District Conservationist, and I asked him what he had been doing lately. He said he was burning land enrolled in the Conservation Reserve Program. I asked him why he was doing that and he replied, "So cows will graze it." We have finally arrived, I thought, we've bred cattle that can't eat old grass!

In our effort to raise beef cattle with higher performance, we have raised their nutritional requirement to such a point that they are unable to sustain themselves on low quality forage like old grass or "litter" as other people call it.

Litter is of prime importance in grass production and overall ecosystem health. It shades the soil surface, controls grasshoppers, holds snow, increases water infiltration, protects seedlings, feeds the soil, controls erosion, and provides forage in time of drought (Four out of ten years are typically considered to be droughts in Eastern Montana).

Scripture says, "All flesh is grass." (Isaiah 40:6) This being the case, we are making a big mistake when management is focused primarily on beef production. Grass is our crop, and cattle are our combines. To put some of these genotypes in regions where they're not adapted to the forage resources is like combining wheat with a corn header.

The appearance of fore-gut digesters (ruminants) in the fossil record (about 25 million years ago) coincided with an increase in the prevalence of grasses. Before then we had equine (hind-gut fermenters) for nearly 350 to 400 million years that ate anything herbaceous and processed it quickly though poorly. Yet, the horse didn't inherit the earth, they only inherited the public land of the West, but that was because of bureaucracy rather than biology.

Twenty five million years ago saw the development of a plentiful forage quantity of grass, of occasional high quality, growing everywhere and frequently burned off if nothing ate it.

Today the only time we try to override the ruminant digestive system of grass-grazed by ruminants is when we want milk. (At least more milk.) As soon as we become dairy farmers we try to bypass this digestive system, or at least components of that system. (In particular the nitrogen dynamics of the rumen.) For example, dairy farmers feed very high quality hay and bypass protein.

In general, feed quality determines how much feed a cow will eat though water, quantity of feed, temperature, and palatability are other contributing factors. To a certain degree, the higher the crude protein content the more forage she will eat. Protein enhances digestion and thereby the velocity of the mass through the gastrointestinal tract. The lower the crude protein of a forage the less the cow will eat. The mass moves slower and the cow becomes mass limited on how much she can eat.

Knowing this, we can pretty well select the genotype that will perform best in a certain region. In the deserts and shrublands of the Southwest two forage scenarios exist and both support the same cow genotype. Deserts have low quality, low quantity forage: shrublands have high quality, low quantity forage. Grazed in common or exclusively, both vegetation types best support a small, low producing cow. In New Mexico it has been found that an 870 pound cow is ideal. A large, high producing cow will routinely fail to reproduce under these conditions.

Where the quality and quantity of the forage is high, such as in irrigated alfalfa or clover pastures, we would use a large, high milk producing cow. A low producing cow would get fat and bring in 200 pound calf under these conditions. In other words, when you're in the desert, raise goats. When you're in the jungle, raise hippos.

On the Northern Great Plains we can use all types depending on the level of management. If the pasture is continually grazed at a moderate level, putting it in a declining condition, it can support a large, high producing cow because the lack of litter and the increase of weeds raise the percentage of the crude protein of the forage. Also, we can graze high producing, large frame cattle at low stock density in high condition pastures. They will do very well by selecting forage with the higher protein content to sustain their production.

A third alternative in the Northern Great Plains is to maximize the biomass of the range with an extended rest, giving lots of litter similar to CRP. By severely harvesting the high quantity, low quality forage with low producing, stress resistant (cows do not like old grass) 1200 pound cows, (larger rumen giving more capacity and higher heat production) we can get extremely high stocking rates with good breed back. The severe grazing also controls many of the forage selection problems associated with high litter.

An example of the second and third alternatives for the Northern Great Plains is one producer raises 700 pound

Author is from Wibaux, Montana.

calves on six acres per AUM with high producing cows on high condition pastures. A second producer weans a 450 pound calf on three quarters of an acre per AUM by severely grazing the same class of range site. The pasture is only grazed every other year to allow it to recover. Therefore, the three quarter acre must be doubled to one and one half acre which gives a 450 pound calf on a quarter of the land required for a 700 pound calf.

When selling the lighter calf we will usually receive a higher price per pound adding to the gross income per acre. As some economists put it, "Every pound you put on a calf will cost you more and you will get less for it."

In summary, the higher the protein of a forage the more a cow will eat. The more she eats the less efficient she gets. Thus, we can maximize sustainable grass production by

severely grazing high condition pastures, subsequently allowing them to recover, and by matching the genotype of a cow to the feed and management level. High feed quality demands high production cows and low quality feed demands low production cows.

Cattle are not like hogs or chickens which can be raised in a more controlled environment, and one size will not fit all situations. In determining the size best for any situation there are only two rules. When we have obese cattle, go up with our frame and milk production. Cow condition, if poor, will reflect the inability of your range or management practice to produce milk in excess of the other basic needs such as growth, maintenance, and reproduction. So bring the milk production and/or frame down and the stress resistance of the animal up.

