

Manage Pastures to Optimize Resources

Multiple-pasture system could save nitrogen and hay costs.

by Robert Burns

According to experts, the biggest recent change to the cow-calf business has been rapidly inflating fertilizer and fuel costs. To survive, livestock producers must change the way they manage pastures, says Gerald Evers, Texas AgriLife Research forage management scientist.

In the southeastern United States where Bermuda grass and Bahia grass are the main summer grasses, one change that could help livestock producers reduce inputs and make the most of their resources is to develop a three-pasture grazing system, Evers says.

Many producers use a multiple-pasture system already, but two-pasture systems based on warm-season grasses are probably more common in eastern Texas, he says. In a two-pasture system, one area is grazed most of the year, with another reserved for at least part of the year for growing hay. The main disadvantage of the two-pasture system is the calves are usually born in spring and are sold in the fall, a time when calf prices are usually at their lowest.

A two-pasture system also requires hay for an extended winter feeding program, an expensive proposition, whether the hay is bought or harvested on the farm. And it doesn't take advantage of getting free nitrogen (N) from cool-season legumes, Evers says.

"Things have changed. No one likes change, but high fertilizer prices require that we change," says Evers, who is based at the Texas AgriLife Research and Extension Center at Overton.

Nitrogen fertilizers continue to skyrocket because natural gas is used to produce them. An increasing percentage of nitrogen fertilizer is being imported from other countries. Prices of other nutrients — such as phosphorus (P), potassium (K) and

sulfur (S) — also are rising rapidly because of increased transportation costs and higher world demand.

In much of Texas, livestock operations are anchored on improved forage grasses that, under most management systems, require the yearly application of nitrogen and other nutrients. However, the cost of fertilizer has made such conventional soil fertility programs economically impractical, Evers says.

By understanding how different pasture management systems work, producers can stretch their fertilizer dollars and lengthen the grazing period by months to reduce reliance on hay, yet maintain livestock nutrition, he says.

Three-pasture system

One example of a multiple-pasture system would use three pastures, consisting of a hay meadow (about 40% of open pasture), a pasture to be overseeded with ryegrass-clover (also about 40% of open pasture), and a third pasture used for feeding hay and calving (about 20% of open pasture), Evers says.

"The hay meadow should never be overseeded with annual ryegrass, since ryegrass grows through May and delays spring growth of the warm-season perennial grass," Evers says. "This results in the loss of the early hay cutting when warm-season grass growth and nutritive value are the highest."

Fertilizer, based on a soil test, should be applied when daily low temperatures stay above 60° F. Typically, only one or two hay cuttings will be needed. The hay meadow can be grazed until mid-September. Any growth should be removed by grazing or a hay harvest in mid-September and fertilized with about 60 pounds (lb.) per acre of nitrogen to produce a standing hay crop, Evers says.

"Standing hay" means that instead of

harvesting fall growth as hay, the grass is harvested with cows by grazing when hay feeding would normally begin, Evers says.

Though the energy and protein levels may be low, it is sufficient for cows not lactating.

The pasture to be overseeded with ryegrass and clover can have any type of summer grass on it, he says. It is critical to select a clover that is adapted to the soil type and that has the potential to reseed so it does not have to

be replanted each fall.

According to Evers:

- ▶ Grazing can begin about six weeks before Bermuda grass or Bahia grass is ready in the spring, which will further reduce the winter feeding period.
- ▶ Clover will use nitrogen from the air and reduce nitrogen fertilizer needs.
- ▶ Ryegrass and clover have a higher nutritive value than summer grasses. Higher nutrition means better animal performance. Cows need to calve in January and February to obtain the greatest benefit from the ryegrass and clover.

Both the hay meadow and the overseeded pasture may be subdivided to allow rotational grazing, Evers says.

The success of this system is dependent on fall rainfall to grow a fall standing hay crop and get ryegrass and clover established. It is important to have a hay barn of some type to store excess hay for use when a fall drought occurs, he adds.

More information can be found in "Forage Systems to Reduce the Winter Feeding Period," an article by Evers, which can be found on page 196 in this issue or online at <http://overton.tamu.edu/foragesystems.pdf>.



Editor's Note: Robert Burns is a writer for Texas A&M University, which supplied this article.

