

RANGELAND RISK MANAGEMENT FOR TEXANS: FORAGE QUALITY AND QUANTITY

Robert K. Lyons*

Which is more important, forage quality or quantity? The fact is, both are important because either can be the source of poor animal performance. If you suspect a forage problem, however, it is important to try to determine whether quality or quantity is the cause because the management solutions for each are different.

Grazing and feed costs for the typical Texas cow-calf operation are about 30 to 50 percent of total production costs, so feeding management is critical.

RECOGNIZING AND CORRECTING FORAGE QUALITY PROBLEMS

Producers understand forage quality, especially crude protein content, in relation to livestock performance. Hay shows emphasize the importance of forage testing to determine quality, and demonstrate how forage quality can be improved through soil fertility management and proper hay harvesting techniques. For some species of grazing animals there are fecal analysis methods of estimating the quality of forage in the diet. Forage quality is directly related to animal performance and the need for supplemental feed. Know the quality of your forage.

In winter hay feeding programs, information about forage quality can be used 1) to ration scarce supplies of good quality hay to meet animal needs without overfeeding, 2) to match the nutrient requirements of animals with hay quality, and 3) to estimate supplemental feeding needs for low quality hay. For example, with good quality hay, animal requirements might be met with only 10 pounds of hay per day, whereas if they had access to the hay free-choice animals might eat 20 to 30 pounds per day. With poor quality hay, on the other hand, an animal might not be able to or want to eat enough to meet its requirements and might need supplemental feed.

Winter and mid-summer are obvious times when forage quality may be a concern. Poor forage quality can be corrected with supplemental feed when fed correctly and strategically. For example, you might feed in late morning or early afternoon so you do not disrupt the major grazing periods that occur in early morning and late afternoon to early evening. Keep in mind that the only efficient time to improve cow body condition is from weaning until calving. Supplementation at other times only maintains weight or reduces weight loss.

RECOGNIZING AND CORRECTING FORAGE QUANTITY PROBLEMS

Forage quantity can also be a problem, even when there appears to be plenty of standing crop. Grazing animals have very definite food preferences. They instinctively look for green plant material. Their first preference is new green leaves. When new green leaves are not available, they will move to older green leaves, then to green stems, dry leaves and, last, to dry stems. When green plant material is scarce, grazing animals spend more time looking for it and forage intake is likely to decrease as a result.

Plant species also vary in palatability or attractiveness to an animal. Grazing animals are selective in what they eat and sometimes this selective grazing means that they do not find enough of what they would like to eat to meet nutritional requirements. Some studies have shown that as much as 80 percent of the diet during a season may come from only 1 percent of the total forage available on rangeland.

The availability of forage can be a problem during early spring green-up when forage quality is high but green plant material is scarce. Of course, problems are also likely during drought or when stock density is high. Not so obvious are problems associated with grazing distribution. If cattle can not or do not graze in areas where there is no water, too much brush, or the land is rough and steep, you may have overestimated the amount of forage available.

*Associate Professor and Extension Range Specialist

Standing crop estimates are very useful for vegetation and watershed management. However, closely observing your animals and knowing what species they prefer will be more useful in distinguishing between forage quality and quantity problems. For example, if green forage is available but animals are losing condition, forage quantity is the most likely problem. If you observe your cattle spending an unusual amount of time eating browse (rather than the grass they prefer), forage is probably scarce. If you see animals grazing in the heat of the day in the middle of summer, forage is probably scarce.

You can use the body condition scores of your animals and expected animal performance to identify periods when forage quantity is a problem. To do this you will need to make reasonable estimates of forage quality, the potential forage intake by the animals, and the nutrient requirements of these animals. There are computer programs that can combine this data to provide an estimate of performance. If the animals do not perform as well as expected, there is a good chance that forage intake is less than you estimated and you do not have enough forage. Identifying these problem periods is the first step in correcting them because they often recur at the same time of year.

A lack of forage quantity might be alleviated by providing more area to graze, by reducing stock density, by weaning young animals to reduce the nutrient requirements of the mothers, or a combination of these approaches. Managing calving, lambing and kidding seasons to match forage production seasons can help reduce both forage quality and quantity problems. Flexible stocking plans also are important when forage is scarce.

OTHER PUBLICATIONS IN THIS SERIES:

- ▶ *Making Better Decisions*
- ▶ *Common Grazing Management Mistakes*
- ▶ *Drought*
- ▶ *Toxic Plants*
- ▶ *Types of Risk*
- ▶ *Will You Succeed as a Rangeland Manager?*
- ▶ *Rangeland Health and Sustainability*
- ▶ *Common Brush and Weed Management Mistakes*
- ▶ *Seeding Rangeland*

For additional range management information see:
<http://texnat.tamu.edu>

Support for this publication series was provided by the Texas A&M AgriLife Extension risk management initiative.