

Drought Emergency Grazing Practices will have Costs Next Season

Northern Plains beef producers who used emergency grazing to compensate for recent forage shortages will continue to experience the effects of last summer's dry conditions even beyond the 2003 grazing season, says a North Dakota State University range scientist.

"Ranches without drought forage plans have been pressured into using 'emergency' practices that usually include grazing grass residue on domesticated-grass spring pastures, on summer pastures, and on grass haylands. These emergency grazing practices are commonly assumed to be less costly than the purchase of additional hay because of lower cash-flow costs, but the biological and financial costs will be evident next season in reduced production of herbage weight and subsequent reduction in pounds of calf per acre," observes Lee Manske, range scientist at NDSU's Dickinson Research Extension Center.

Many emergency grazing practices can negatively affect perennial grasses. Grasses reproduce primarily by vegetative tillering from axillary buds on the crowns of established plants and only infrequently by seed production and seedling development. Survival of perennial grasses through the winter and their regrowth in the spring depend on the plants' ability to store sufficient nutrients during the latter portion of the growing season, Manske says.

The late-summer and fall greening of grasslands is the beginning vegetative growth stages of next year's lead plants, he explains. The fall tillers will have active leaf material until the end of the growing season, when the chlorophyll fades and the leaves lose their green color. Throughout the winter, the crown of the plant, some portions of the root system and some leaf tissue remain active by using stored carbohydrates. If plants are healthy and have adequate carbohydrate reserves, most of the fall tillers will remain alive. Early in the spring, the leaf portions with intact cell walls can regreen and the tillers can resume active growth.

The quantity of carbohydrates stored during the winter hardening process, which occurs between mid-August and mid-October, is closely related to the amount of active leaf material on each tiller. Emergency drought grazing practices can remove enough leaf material to diminish the quantity of carbohydrates stored. "Under these conditions, some tillers may not survive until spring, and plants that do will produce tillers with reduced height and weight," Manske says.

Reductions in height during the succeeding growing season can range from 17 to 43 percent. Reductions in herbage weight are related to the severity of the grazing, with most pastures producing 50 percent or less of their normal herbage weight. Ranches that implemented emergency grazing practices this year should be prepared for diminished herbage production during the upcoming grazing season and for the necessary stocking rate reduction, he recommends.

"Producers facing these herbage reductions will most likely need additional sources of grazeable forage," Manske says. "Seeded annual cereals like oats, forage barley or foxtail millet, which can be successfully grazed between the fourth- or fifth-leaf stage and the flowering stage, can be used for additional early and mid-season grazing. Spring-seeded winter cereals like winter rye, winter wheat, or winter triticale can serve as forage for additional late-season grazing."

Purchasing emergency forage during growing seasons with drought conditions can be costly, but stop-gap use of emergency grazing practices is not a satisfactory alternative. The actual costs of

emergency grazing practices are greater than the costs of emergency forage because the reduced grassland productivity that results from the grazing practices can last for several years, Manske notes.

Two long-term practices that minimize the effects of growing seasons with below-normal precipitation can help beef producers:

- * Implementing grazing management strategies that meet the biological requirements of the plants and enhance plant health status. Levels of herbage reductions during drought conditions are smaller in healthy plants than in weak plants, and healthy plants recover from these conditions more rapidly.

- * Establishing forage contingency plans that decrease or eliminate dependence on emergency grazing measures. One contingency plan suggests that producers annually put up as hay the amount of harvested forage needed that year and put up an additional 10 to 20 percent as haylage. Putting up haylage preserves forage quality for many years and creates a supply for growing seasons in which precipitation levels are below normal and herbage production is inadequate.

Drought growing seasons occur with an average frequency of two in every 12 years in the Northern Plains, and ranches with drought forage plans face herbage reductions 16 percent of the time, Manske notes. However, ranches without drought forage plans will experience reduced herbage production with a greater frequency than this.

"These ranches must contend with herbage reductions not only in the years with below-normal precipitation but also in the following two- to three-year periods of grassland recovery from the stress of emergency grazing," Manske emphasizes. "Consequently, for 33 to 50 percent of the years that ranches operate without a drought forage plan, they will have below-normal herbage production and the amount of forage produced will not be adequate to feed a fully stocked cow herd."

"Growing seasons with drought conditions occur frequently and should not be considered abnormal, emergency situations. Grazing strategies that enhance plant health should be implemented and plans for a contingency supply of forage should be developed before the next growing season with drought conditions," Manske says.

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