

Range and Pasture Management When Dealing with Drought

Every district or ranch has poor production years because of drought. One of the risks in farming or ranching is based on whether drought occurs often or as infrequently as once every 20 years.

Good range and pasture management will minimize the effects of drought when it occurs. A lack of available forage would indicate that the range and pasture management practices should be reviewed in relation to stocking rates and the amount of litter or forage residue maintained.

Regardless of how a drought is defined, dealing with it is serious business. If drought is not planned for, a beef operation could become unprofitable or fail. To manage successfully in the face of drought, a producer needs to know how drought will affect plants, livestock, and management practices.

Perennial pasture

The management of a perennial pasture, both native range and tame pasture, is different than that of annuals. Perennial pasture offers some protection against the variation in production of annual plants.

Past grazing practices have a large bearing on what happens to a perennial pasture during a drought. Moderate use develops deep rooted forage plants. Heavy use develops plants with shallow roots. Forage production dramatically decreases during a drought, and the shallow-rooted plants are affected sooner and to a greater degree than the more deeply rooted ones. A healthy deep-rooted plant will be less dependent on frequent precipitation than a shallow-rooted plant.

Moderate use may be indicated by the amount of carryover or litter left at the end of the grazing season. Rules of thumb indicate leaving approximately 50 per cent of the current growth for native range and approximately 25 per cent of the current growth for tame pastures, for proper use under continuous grazing system.

Research has shown that litter reduces the soil surface temperature and therefore reduces evaporation. Although litter is low in nutrients and has low palatability, it can be used by livestock when forage is limited. The green forage growing through the litter will raise the nutrient level of the litter and make it more acceptable to cattle.

A deliberate decision has to be made about maintaining the litter level in a pasture. Are the cows worth enough to justify reducing pasture litter, or is the pasture condition more important for its drought-proofing capabilities in the future?

If litter in perennial pasture is not maintained, the pasture becomes more dependant on frequent precipitation during the growing season, as is the case in annual crops. For this reason, forage yields become less predictable on a yearly basis and the carrying capacity of the range or pasture more uncertain.

The only reason for maintaining a perennial pasture is to ensure forage production remains stable. This approach, in turn, will reduce stocking rate changes required from year to year.

In summary, a proper stocking rate, deep-rooted healthy plants and sufficient carryover or litter left at the end of each grazing season will reduce the risk to ranching.

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Annual pasture and emergencies

Rather than decreasing the amount of litter in a perennial range or pasture, an escape mechanism with annuals should be planned. In many areas, oats are the annual cereal to consider. Depending on the need, oats may be grazed, cut for silage or harvested as either greenfeed or grain. Fall rye, winter wheat or triticale may be substituted or used in conjunction with oats in intensive annual pasture operations.

If moisture is adequate, the annual production with annual forage plants may be as much as four times that of native range or two times tame perennial forage production.

Annuals may be used on a regular basis for pasture where land area is limited. Oats seeded at two to three bushels per acre will provide enough pasture to feed a cow for about 100 days, with grazing starting at six weeks after seeding. This area, then, may be grazed or harvested depending on the need.

Annuals may provide grazing for a herd of cattle for approximately 100 to 120 days each year, if the ranch management can survive the annual variation in forage production and the added expense of seeding each year. Annual forage production is totally at the mercy of precipitation and soil moisture each year. Forage production may be zero if there is little rain.

Complementary use of perennial and annual pastures can alleviate short term drought conditions. For example, spring-seeded annuals can be grazed during July while perennial pastures are rested.

If cereals are not normally grown, cattle can graze hay fields or winter pastures as long as stock water is available.

Cattle

Unless stocking pressures are reduced in accordance with forage production, weaning weights may be seriously reduced. Research has shown that near normal weaning weights may be achieved when stocking pressure is adjusted to the limited forage supply. If the cow's body condition score falls below 2.0, the cow's ability to breed on time may be impaired.

When cows do not get adequate nutrition, either before or after calving, they respond by missing one or more heat periods or remain open throughout the season. This response may affect future calf crops and the length of the calving period by placing a breeding cow out of synchronization for calving with the rest of the herd.

In planning for drought, it is wise to develop and follow certain steps that will minimize the effect on both pasture and livestock. The first priority is to have a flexible breeding herd, which means maintaining only two-thirds to three-quarters of the herd as a cow-calf operation and carrying the remainder as yearlings for replacements. Yearlings become expendable when adjusting for drought.

Depending on the conditions expected, one-quarter to one-third of the herd may be grazed, sold or put into the feedlot. When drought is expected, the next step would be to cull the cow herd heavily.

These steps, if followed when planning for drought, will minimize the effect on both the pasture and the livestock:

- have a flexible breeding herd
- cull heavily the older cows, cows with physical defects, open cows, cows that have difficult births
- wean early
- pregnancy test
- monitor bull condition throughout breeding season
- monitor bull and cow rations

Management

Ranchers should adopt the philosophy that pasture production is their business. Therefore, the health of their pastures is the most important aspect of ranching. Previous history is important to showing how severe management has to react to the threat of impending drought. The worst scenario occurs when there is a history of over-grazing and a large number of cattle on inventory. There is no one poorer than a rancher who is always out of grass.

Pastures and ranges in Alberta are sensitive to stocking rates. At the slightest indication of drought, ranchers should consider a reduction in stocking rate in one or all pastures on the ranch. The water supplies should be monitored several times a year in all the pastures. Water development is the best investment a rancher can make.

As the threat of drought becomes evident, the following check list of items may be considered. This list begins with annual ranch considerations and ends with the most severe measures that may have to be considered:

Drought list

1. Maintain a year's supply of winter feed for all livestock.
2. Monitor the water supplies on the ranch for reliability.
3. Maintain a flexible herd composition.
4. Maintain a litter supply in all pastures.
5. Rest pastures or delay grazing in all pastures periodically.
6. Maintain an orderly marketing system rather than trying to "out guess" the market.
7. Maintain emergency pastures.
8. Assess your options at the first sign of drought.
9. Reduce stocking rate early.
10. Wean calves early.
11. Evaluate your livestock inventory.
12. Cull cows.
13. Try to hang on to healthy, early to middle age productive cows.
14. Feed your 1 year supply of hay.
15. Graze all cereals.
16. Graze hay land.
17. Place livestock in a feedlot or sell them.
18. Increase stocking rate gradually after drought over a 1 to 3 year period.

For more information

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