



Cattle Producer's Handbook

Drought and Other Natural Disasters Section

935

Drought Advisory: Managing Irrigated Pastures and Grass Haylands

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Drought, an environmental stress with periods of limited or no water during the growing season, reduces forage production for grazing and haymaking. Prolonged drought forces livestock and hay producers to better manage their fields to maximize recovery after the drought ends. Forage produced during a drought may be stressed enough that livestock risk death by simply eating it. The following strategies will help maintain healthy perennial pastures and hayfields, reduce death losses to livestock consuming drought stressed forage, and improve recovery of lands after the drought ends.

Strategy 1: Protect the Plant Crowns

Irrigated pastures and grass hayland plants have a safety mechanism for survival—the crown. A crown develops at the base of all pasture grass and legume plants as they mature. The crown is also commonly referred to as “the stubble” or “that bottom 3 or 4 inches of growth that is next to the soil surface.” Each crown acts like a bank account for the plant storing sugars and carbohydrates used for plant growth and life-supporting respiration.

Without an adequate crown many forage plants simply die. This is one reason why pastures deteriorate from overgrazing. Avoid grazing all pastures below a 3-inch stubble height. Pasture stubble height can easily be measured with a ruler over a pasture. The crown stores sugars so livestock will want to graze down to the soil surface to eat these sweet plant tissues.

To ensure pastures are not overgrazed, use a designed sacrifice area where damage is restricted to one location for the duration of the drought. By feeding hay or other feedstuffs in the sacrifice area you will protect those crowns of the highly productive perennial forages. Above all, save the crown.

Strategy 2: Know the Plants in the Pastures

Identifying the dominant grasses and legumes in each field increases flexibility in prioritizing fields that are able to withstand drought from those that cannot. Drought tolerance is related to the extensiveness and depth of the plant's roots. Some irrigated grasses, such as orchardgrass and tall fescue, have larger and deeper root systems, which make them more tolerant of drought conditions.

Specific vegetative parts can be used to identify desirable grasses. Contact your County Extension Educator or Natural Resource Conservation Service (NRCS) personnel for resources to help identify grasses on your operation. Weeds are water wasters. Identifying and controlling weeds early in the season will save valuable water for desirable species and increase quality of forage since some weeds accumulate high concentrations of nitrates.

Strategy 3: Sample Soils and Change Fertilizer Applications

Sample soils as early as possible. Forage plants must rebuild their root systems every year, and this requires adequate phosphorus. Apply phosphorus as early as possible to stimulate root rebuilding. Maintain soil potassium and sulfur based on soil test results. Reduce nitrogen applications by 50 percent or more. This will reduce total forage yield, but the forage that is produced should be lower in nitrates that causes nitrate poisoning and death in livestock.

Nitrate-poisoned livestock will have chocolate brown blood that quickly turns red once exposed to air. Test all grazed and hayed forage for nitrate accumulation before feeding to livestock. Monitor forage nitrate levels closely if grazed, as nitrates will increase with greater drought stresses.