Widespread Drought Expected to Impact Forage Production

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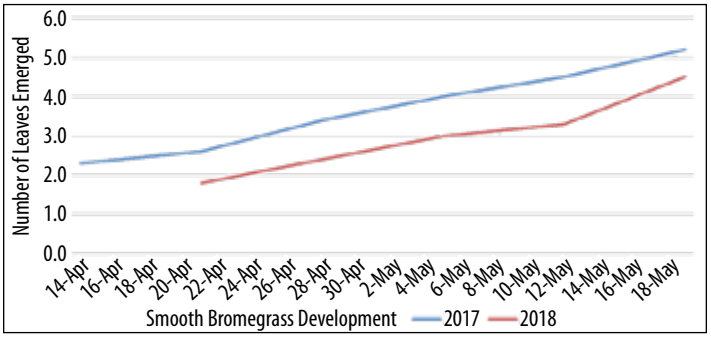
About half of the U.S. is experiencing some level of drought, impacting 34% of hay and 47% of alfalfa acres. Across the region, drought started in the fall of 2020. NDSU data indicates a 20-25% decrease in forage production due to the drought.

In the Northern Great Plains, range, pasture, and hay land are cool-season dominant, producing as much as 90% of the forage due to spring precipitation. Reduced precipitation during this period will result in greater reductions in forage production.

Figure 1. Variation in grazing readiness of smooth bromegrass 2017-2018 in ND. Smooth bromegrass reached grazing readiness April 24, 2017, and May 4, 2018.



Farmers can expect a delay in grass development this spring due to drought conditions last fall. Following the 2017 drought, NDSU Extension reported a 3-week delay in grazing readiness of smooth brome and up to a 4-week delay in grazing readiness of western wheatgrass. This is because cool-season grasses initiate growth from a tiller established the previous growing season. However, fall drought stress causes tillers to die, setting back spring plant development.

Forage reductions will be even greater if pastures are grazed too early, reducing leaf area and plants' ability to capture sunlight. This reduces vigor, thins stands, lowers forage production, and increases disease, insect, and weed infestations. Pastures damaged by grazing too early may take several years of deferment or even rest before regaining productivity. This year will likely have delayed grazing readiness, especially in overgrazed pastures without adequate recovery time. For native grasses, grazing before the 3½-leaf stage can result in a 45-60% potential forage production loss. This leads to a reduction in recommended stocking rate and lowered animal performance.

Farmers should have management plans in place including strategies and trigger dates for making drought management decisions. Actively managing forage resources will reduce drought recovery time and improve long-term sustainability.

Additionally, drought affects alfalfa similarly to how it affects pastures. Harvest timing decisions help maintain healthy and productive stands. Whenever plants are stressed, they replenish root and crown reserves (sugars, proteins) as soon as possible. Reserves are vital to support new growth from crown buds once soil moisture is available. Lowest root reserves occur at 6-8" tall before the first cut. Reserves are replenished about the time the plant blooms.

Drought-stressed alfalfa flowers early when still very short. The plant accelerates its life cycle, attempting to produce seed in the event drought stress continues. If drought persists, alfalfa drops its leaves and goes dormant until conditions improve. Alfalfa is well-adapted to survive a drought when managed correctly. If stands are not 12-15" tall or yield is not enough to cover harvest costs, farmers should leave alfalfa uncut until rain falls and dormancy is broken. Clipping or harvesting droughty alfalfa at 6-8" causes additional plant stress, reducing future regrowth and possibly causing death.

For more information on drought and drought management considerations visit the NDSU Extension drought website at: https://www.ag.ndsu.edu/drought/.