

NDSU Extension Encourages Producers to Assess Forage Requirements

Wet conditions during haying may have reduced the quantity and quality of hay this year.

The 2019 growing season has been challenging for farmers and ranchers in the region.

It was a bumper year for forage production in many parts of North Dakota, giving ranchers the opportunity to restock depleted forage supplies following the brutal 2018-2019 winter. However, wet conditions created challenges during haying, reducing the quantity and quality of hay.

“In addition, the early arrival of winter weather has created additional challenges for ranchers, potentially ending the grazing season early and reducing the ability to graze cover crops in some areas,” says Miranda Meehan, North Dakota State University Extension livestock environmental stewardship specialist. “Silage is a valuable feedstuff in the region; however, wet conditions and an early frost will impact the quality and quantity of silage available for feed over the winter.”

Images



Wet conditions during haying may have reduced the quantity and quality of hay this year. (NDSU photo)

Producers still have an opportunity to graze cover crops, standing corn and crop residues, she notes. The most accurate way to calculate the available standing forage for grazing is the clip and weigh method. See NDSU Extension publication “NDSU Range and Forage Production Sample Kits” (<https://tinyurl.com/NDSU-RangeSampleKits>) for detailed instructions on calculating forage production.

Forage testing is recommended when grazing standing forage because the quality will vary significantly, depending on the species, varieties and maturity.

“We encourage ranchers to assess their available forage resources and requirements to get their herd through the winter months,” advises Janna Block, Extension livestock systems specialist at NDSU’s Hettinger Research Extension Center. “Producers should inventory all resources, including hay, silage and stand forage, to determine if the feed supply will be adequate, and estimate how much will be needed for the winter based on the number of cows and approximate length of the feeding period.”

Although dry-matter intake is affected by a number of factors, including forage quality and stage of production, a cow will consume approximately 2.5% of her body weight in forage (dry-matter basis) per day. For example, assume the herd has 200 cows each weighing 1,350 pounds. The cows are consuming average-quality hay, with bales weighing 1,300 pounds. These cows will have dry-matter intake of approximately 34 pounds per day (1,350 pounds times 0.025), which results in the need for more than 5,000 pounds of hay per cow for the feeding period (34 times 150 days).

“Dry-matter content of hay will vary based on how it is stored,” says Karl Hoppe, Extension livestock systems specialist at NDSU’s Carrington Research Extension Center. “Use an estimated dry-matter content of 88% for hay stored indoors or 80% for hay stored outside.”

For this example, assume the hay is stored outside. Bales weighing 1,300 pounds will contain just in excess of 1,000 pounds of dry matter (1,300 pounds times 0.80 dry matter). If the herd’s dry-matter requirements are 5,063 pounds per cow, the producer will need nearly five bales per cow (5,063 pounds of dry matter required divided by 1,040 pounds of dry matter supplied). Based on this example, the producer would need a total of 980 bales (4.9 bales per cow times 200 cows).

Hay losses from storage and feeding also should be considered when calculating total hay needs. These losses may vary from 5% to 45%, depending on the situation. Assuming 20% is lost due to storage and feeding, the total amount of hay needed in this situation would be 1,176 bales (980 bales times 1.2).

These calculations provide a good estimate of hay needs; however, the specialists recommend laboratory analysis of forage, including each lot of hay (same species harvested from the same field in a 48-hour period) to help rank each lot by quality and determine the most appropriate use for hay based on the stage of production (mature cows, first-calf heifers, etc.). For example, a dry, pregnant mature cow in midgestation will require approximately 50% total digestible nutrients (TDN) and 7% crude protein (CP) as a percentage of dry-matter intake per day.

In late gestation, this will increase to 55% to 58% TDN and 8% to 9% CP. Therefore, a given lot of forage containing 52% TDN and 7.3% CP would be appropriate for a cow in midgestation, but the same cow would need to be fed a higher-quality forage or supplement during late gestation.

“This is a good first step in matching hay quality with cow requirements,” Meehan says. “However, it is important to remember that cows require pounds (not percentages) of nutrients. Further evaluation of the forage would be necessary to calculate how much actual dry matter should be consumed and if there are certain factors that may limit intake, such as inadequate protein or high fiber content.”

For producers who need additional feeds for livestock, North Dakota processing plants produce an abundant supply of coproduct feeds.

“For cattle, the widely available distillers grain is a high-protein, high-energy feed that is fairly safe to feed because the starch has been removed for ethanol production,” Block says. “Dry, modified (50% moisture) or wet (60% moisture) distillers grain can blend with poorer-quality hay to make a better ration. Fed at 10% to 30% of the diet, dried distillers grain can enhance poor-quality hays.”

Other coproducts available in North Dakota include wheat middlings, soy hulls, beet pulp and tailings, canola meal, soybean meal and sunflower meal. Canola meal, soybean meal and sunflower meal are excellent choices if only additional protein is needed in the ration because protein content is greater than 35%, Hoppe warns.

Freight can be a big expense with coproducts and needs to be included in the cost when comparing different coproducts.

“Ranchers who do not have adequate forage supplies to meet herd needs through the winter should complete a cost-benefit analysis of purchasing forage, having livestock custom fed and reducing livestock numbers,” says Bryon Parman, NDSU Extension agricultural finance specialist.

This decision is based upon herd size, the cost of shipping feed and cattle prices. Typically, shipping animals to a custom feeding operation is less expensive if the herd is smaller than 100 head, or if the cattle are going to stay on feed for longer than 180 days, he notes. Also, if the mileage of shipped feed is high, then custom feeding becomes even more attractive.

“Producers also might use such an opportunity for a heavy cull while maintaining the best of the cows and replacements to reduce the demand on feed,” Parman says. “However, it is important to remember that total liquidation is often a poor choice if a rancher intends to continue a cow-calf enterprise, given the very high cost of heifer development and loss of the genetic base.

“Good record-keeping will aid producers in evaluating their forage requirements and determining the best way for them to address potential forage shortages,” he adds.

For assistance with sampling forage, balancing rations and evaluating the options, contact your local NDSU Extension office.

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