

Extension Responds: Drought

Dairy Cattle Feeding Tips for Drought Stressed Corn

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1. **Test for moisture:** Expect moisture content of corn silage and high-moisture corn to be highly variable as it is fed out of the silo because of variable maturity and dry-down at harvest. Test frequently for moisture content of wet ensiled feeds at feed-out and adjust as-fed feeding rates to maintain the correct dry matter amounts and proportions of these feedstuffs in the diet.
2. **Test for starch:** Expect starch content of corn silage and high-moisture corn to be highly variable, because of variable grain yield and ear kernel fill. Starch is a major component of corn silage and high-moisture corn and has a large influence on its energy content. Test corn silage and high moisture corn for starch content and adjust grain feeding rates accordingly.
3. **Adjust for low test weight corn:** Low test weight corn may be prevalent in some areas. Minnesota workers report similar energy values and animal performance for corn with test weights ranging from 50 to 58 pounds per bushel. Corn with test weight below 50 pounds per bushel has an energy value about 95 percent of normal test weight corn. As a result, you may need to increase feeding rates of low test weight corn to maintain the desired energy content in diets. Analyzing corn for its nutrient content, including starch, and estimating its energy value using modern summative equations is a better way to determine feeding rates for low test weight corn. Because of highly variable test weights, it is important to feed corn on a weight and nutrient basis rather than on the basis of volume.
4. **Processing and preserving:** High-moisture corn harvested too dry with less than 24 percent kernel moisture will require fine processing to obtain high starch digestibility in high producing dairy cows. Ensiling may also be a problem when high-moisture corn does not contain adequate moisture to support proper fermentation. Depending on the specific conditions, you may decide at harvest to inoculate high-moisture corn with a microbial additive, treat it with an organic acid stabilizer, or treat it at full rates with an organic acid preservative to aid fermentation, storage and feed-out.
5. **Test for NDFD:** Drought-stressed forages may have increased levels of neutral detergent fiber digestibility (NDFD). However, this could be variable this year. Corn silage harvested too dry -- with less than 60 percent whole-plant moisture with dry, dead stalks and leaves -- may have low NDFD. You

can have corn silages tested for NDFD at many commercial forage-testing laboratories, and this test is highly recommended. When you know NDFD, you can more accurately estimate the energy value of corn silage and other forages. When NDFD is low in corn silage or other forages, adjust grain feeding rates accordingly or add highly-digestible by-product fiber sources to the diet.

6. **Test for mycotoxins and nitrates:** If you produce corn silage from severely drought-stressed corn, you should test for mycotoxins, including aflatoxin, and nitrates at feed-out. If the silage is contaminated with one or more of these anti-quality factors, you may prevent decreases in milk production, cow health or reproductive performance by diluting the affected silage with other feeds.

7. **Alternative forages:** Because of a high incidence of alfalfa winterkill during the winter of 2002-2003, many farmers planted alternative forages such as soybean, mileage, sorghum-sudan grasses and millets this year. Many of these forages suffered from the lack of late summer rainfall. Sample and test alternative forages to determine their nutrient content. Don't rely on book values to determine their nutritional characteristics. Near infrared reflectance spectroscopy (NIRS) data bases are limited for some of these forages, so you may need to arrange for wet chemistry laboratory tests to fully determine nutritive value before feeding to livestock. As with corn silage, evaluate alternative forages for NDFD and energy content using modern summative equations.

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