

Drought management to improve pastures and minimize nitrate contamination risk



One of the risks of increased nitrate levels is animal mortality



(<https://njaes.rutgers.edu/pubs/publication.php?pid=E351>)

September 22, 2022, 7:00 PM to 8:30 PM

- Management of drought affected forages
 - Managing nitrate risk in drought affected forages
 - The New Jersey State nitrate testing program
1. Dr. Michael Westendorf, Animal Science Extension Specialist/Professor at Rutgers University
 2. Steve Komar, County Agricultural Agent, Rutgers Cooperative Extension of Sussex County
 3. William Bamka, County Agricultural Agent, Rutgers Cooperative Extension of Burlington County
 4. Dan Wunderlich, Coordinator Dairy Program and Enforcement, Livestock Specialist, Division of Marketing and Development, New Jersey Department of Agriculture

Any time there is a summer drought that limits production of corn silage/forage and other forages, plant tissue accumulation of nitrates is a risk. Corn silage produced from forage grown under drought conditions is often poorly eared and low in energy. Adequate forages are essential for feeding ruminants and other herbivores. Forages provide an excellent source of nutrients, fiber for proper rumen functioning and milk fat test, and make use of renewable forage resources. Feeding drought-stressed forage that is high in nitrates is challenging, but with good management and some proper precautions, can be successful.

During a drought, nitrates can accumulate in a plant. This is most seen in corn silage and other corn forages, but can occur in other plants such as sorghum, sudangrass, small grains, ryegrass, and weeds such as Johnson Grass or pigweed. Most cool-season grasses and legumes are not affected. Nitrates are most likely to accumulate when plants are stressed and there are higher amounts of nitrate in the soil available for uptake. Ruminant animals such as cows, sheep, or goats can detoxify nitrates in the rumen. Problems occur when the level of nitrate builds up in the rumen and microbes cannot break down any excesses. If levels of nitrate are great enough, nitrite will accumulate in the rumen and will be absorbed into the blood supply. When this happens, nitrite combines with hemoglobin in the blood and converts it to methemoglobin, which will carry very little oxygen to the tissues. When methemoglobin reaches toxic levels, death can occur due to suffocation (oxygen deprivation).

Address for this event:

<https://rutgers.zoom.us/j/94002017713?pwd=dUMrVU5Ga0NUckFHbWZZaWU0ZkVRdz09>