

# Nitrate Toxicity In Forages A Deadly Concern For Livestock Producers

GALENA, MO.

**R**eports of cattle deaths due to nitrate toxicity have been striking fear and concern among area livestock producers according to Tim Schnakenberg, an agronomy specialist with University of Missouri Extension.

"The biggest concern has been in fields that contain sorghum sudan, millet and Johnsongrass. These forages can accumulate nitrate levels during periods of drought, especially after significant amounts of nitrogen fertilizer or poultry litter have been applied to the crop," said Schnakenberg.

In drought situations, fescue tends to go dormant and forages like Johnsongrass continue to stay lush and desirable to livestock.

According to Schnakenberg, the nitrate levels are not only a concern for grazing, but also in hay. Nitrate stays at the same level in hay as it was the day it was cut.

"Excessive nitrates can be poisonous to livestock. Nitrates are converted to nitrites by bacteria in the rumen. Nitrites interfere with movement of oxygen through the blood stream and very high levels of nitrite results in asphyxiation. Among bred animals, nitrate accumulation can also lead to abortions," said Schnakenberg.

Most areas in southwest Missouri have now received some August rain. However, it takes at least four to five days following a good soaking

rain before nitrate accumulations in forage may drop to a safer level according to Schnakenberg.

Under very dry conditions, other crops like corn can have high nitrate levels if high rates of nitrogen are applied. Much of the corn planted in the Ozarks was intended, and fertilized for grain. With the drought, its season was cut short and much of it was chopped for silage.

If the corn was at the best stage for silage (60-70 percent moisture), the nitrate level can be reduced during the fermentation period 25-50 percent. If too dry or too wet, it may not reduce as much as expected. Fermentation will take at least 21 days to complete.

There is no way to know the nitrate level unless it is tested. Most extension centers are equipped to do a quick test of lower stalks of plants to determine if the nitrate levels are a concern or not.

"Nitrates accumulate the most in the lower stalk. If they are a concern, it's advisable to send a sample to a lab to get a quantitative analysis from several samples containing the entire plant that will be consumed," said Schnakenberg.

Extension centers can also direct producers to labs that can test for nitrates. The results can help the farmer to know how to safely feed dangerous feeds to livestock by dilution and determine what types of cattle should or should not be fed the feed. △