

FOR IMMEDIATE RELEASE

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Headline: Use Caution When Feeding Corn Stalks

WARSAW, Mo. – Many acres of corn stalks are being baled to feed later this fall and winter. In order to safely feed corn stalks this year, it is absolutely necessary to test baled corn stalks for quantitative levels of nitrate. Knowing the amount of nitrate in the stalks will determine how many pounds of stalks can be fed per day, how the stalks are fed, and if ammoniation to improve digestibility is recommended.

If the nitrate level of stalks is less than approximately 2,500 parts per million (ppm), the stalks can be fed in round bale feeders with no intake limitations and can possibly be ammoniated to improve feeding value. They are a safe, but low quality forage.

Nitrate levels of over 2,500 ppm require more caution when feeding. These nitrate levels indicate the amount of stalks in the diet should be limited. Free-choice feeding in round bale feeders is not recommended. Ammoniation of stalks with this amount or greater nitrate should NOT be done. Do NOT feed supplements containing urea or non-protein nitrogen with this level of nitrate in the stalks.

Ammoniation or use of urea-containing supplements in combination with high nitrate corn stalks will **increase** the chances of nitrate toxicity issues in livestock. Rumen microorganisms can incorporate nitrates into microbial protein by converting the nitrates to ammonia, but only so much can be converted in short periods of time. If large amount of nitrates are ingested in a feeding, complete conversion to ammonia does not occur and toxic levels of nitrate are absorbed.

Ammoniation or use of urea-containing supplements adds additional ammonia to the rumen and reduces the amount of nitrate that microbes can metabolize from high nitrate corn stalks. This situation can easily overwhelm the ability of rumen microbes to convert nitrate to ammonia. The excess nitrate is then absorbed into the bloodstream and reduces the ability of the blood to carry oxygen.

Feeding grain provides energy for rumen microbes to quickly convert nitrate to ammonia, but grain feeding will not eliminate problems associated with high nitrate

levels in corn stalks. Corn grain or milo should be used rather than by-product feeds in this case.

Corn stalks containing nitrates must be fed with caution. Producers must figure out ways to limit feed corn stalks containing excessive levels of nitrates. Since most of the nitrate is in the stalk, forcing cattle to consume stalks will increase the chances of nitrate toxicity problems. Feeding high starch supplements and providing sufficient non-nitrate containing hay prior to feeding high nitrate feeds can help reduce, but not eliminate, problems associated with nitrate-containing feeds.

I have recently tested corn stalk bales containing over 9,000 ppm nitrate, so testing corn stalks for nitrates and seeking assistance in formulating rations will be vitally important for beef producers in upcoming weeks and months. For assistance in these areas, contact me by e-mail at schmitze@missouri.edu or by calling the Benton County Extension Center in Warsaw at (660) 438-5012. *Some information in this article is taken from South Dakota State University Extension publication ExEx 2034 and Kansas State University publication MF-1018.*

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