

International Silo Association

E106 Church Rd. – Luxemburg, WI 54217 – 920-655-3301

E-mail: info@silo.org – www.silo.org

For immediate release

For more information please contact: Leroy Shefchik at 920-655-3301

July 24, 2012

Drought Stricken Crops May Be Dangerous

Silage fermentation may produce several kinds of gas, including carbon dioxide and nitric oxide, which in turn produces nitrogen dioxide. Carbon dioxide is non-poisonous, although it can cause suffocation through lack of oxygen. However, nitrogen dioxide is poisonous. It kills and injures people as well as livestock.

Nitrogen dioxide is a lethal gas which is yellowish-brown in color and smells like some laundry bleaches. Nitrogen dioxide is heavier than air and will remain at the bottom of air mass over the silage. Shortly after ensiling green plant material oxygen is used up in fermentation and the nitrates present in the plant are released to form one of the oxides of nitrogen. Normally nitrogen is taken up by plants as nitrate and converted to protein during normal growth. However, when plant growth is retarded by adverse growing conditions, such as prolonged drought, nitrates not converted to protein accumulate in the plant stems and leaves.

After a drought, rapid nitrate uptake occurs in the plant following rain. Therefore, harvest the crop before it rains, or wait until at least 5 days after a rain. To reduce the amount of nitrate going into plants for silage, cut higher than normally (e.g. 10-12 inches for corn silage). Most nitrates are deposited in the lower stalk. High levels of nitrates are dangerous for cattle. Always have the nitrate level in your feed tested before feeding.

During silo filling operations, do not go into the silo just to level the silage; instead, make adjustments to the silage distributor to keep the silage leveled during filling.

The danger period for silo gas may be up to a month or more after silo filling. The period of most rapid production is during the first 10 days, starting immediately after material is put into the silo. During the next 3-4 weeks gas production tapers off. Some gases stay trapped within the silage during the initial storage period, and continue to be squeezed out into the headspace as the silage settles. Always assume silo gas is present until you know positively this is not the case.

Silo ventilation and further information can be found in the “Silo Operators Manual” distributed by your local silo building company or The International Silo Association office. 920-655-3301 or email info@silo.org