

“Farm Safe” Bulletin – Silo Gasses

The threat of silo gas exposure and its consequences

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Silo gas, that is. It's the time of year again to be reminded about the deadly hazards of the oxides of nitrogen produced by silage "working" or fermenting. Any time a large amount of green vegetation is chopped and packed together, enzymes cause a chemical change which gives off gaseous by-products including nitrogen dioxide. Nitrogen dioxide (NO₂) displaces oxygen and, when it contacts moisture as it does in the lungs when breathed in, forms a very strong acid, nitric acid, which can severely burn the inside of the lungs. Nitrogen dioxide is heavier than air and, in large concentrations, can smell like household bleach and appear as a yellow or orange cloud. Being heavier than air, it settles to the lowest point. It is strong enough to peel paint from nearby machinery.

Plants, such as corn, draw nitrogen up through their roots from the soil, and some is stored in the plant. The bottom 10 or 12 inches of a corn stalk is particularly high in nitrogen content. In a dry year, plants seem to store a greater amount of nitrate making the threat of nitrogen dioxide production even greater. Gas production builds to a dangerous level within two to four hours of ensiling chopped forage. Production peaks at about three days, continues for about two weeks, but remains present for up to four weeks. During this period of time, you should not enter the silo for any reason! Even after that, for your safety, you should run the forage blower for an hour to thoroughly ventilate the silo before entering,

It seems that nearly every fall we hear about someone who has sustained severe lung damage or has been killed by silo gas. Here are some procedures that, if followed, will greatly reduce YOUR chance of becoming a victim this year.

