

Drought Could Trigger Silo Fires, Toxic Gas

COLLEGE PARK, Md. — The 1986 drought could be responsible for more silo fires than usual this fall. And a rash of life-threatening silo gas poisonings appears likely on dairy and livestock farms throughout Maryland and the Southeast.

That warning comes from Gary L. Smith, Extension safety specialist and agricultural engineer at the University of Maryland in College Park.

Smith says that corn fodder and other forages going into silos at less than 40 percent moisture content will be a major cause of silo fires. And high nitrate levels in drought-stressed silage crops can lead to fermentation production of toxic gases — the most dangerous being nitrogen dioxide and nitrogen tetroxide.

In addition to being lethal if inhaled even in small amounts, the nitrogen oxide gases will support combustion. Burning silage triggers their rapid production in large quantity.

The nitrogen oxide gases are characterized by a strong, pungent odor. But their anesthetic effect can prevent a person from smelling them after only a breath or two.

The gases have a corrosive effect on tender human tissue, causing pulmonary edema — an abnormal accumulation of fluid in the lungs. Farmers often die in their sleep the next night after exposure.

Nitrogen dioxide and nitrogen tetroxide are heavier than air, and they produce a reddish brown or yellow haze as they settle. "But by the time you see their telltale signs, you probably are already in a life-threatening situation," Smith warned.

So what can be done to ease the double-barreled threat of silo fires and silo gas?

Smith notes that silo fires quite

predictably occur at points where there are air leaks — usually around unloading doors. So prior to filling, insure that all potential leaks are sealed. Make certain that unloading doors are in good condition and fit snugly.

To further reduce the likelihood of fires, Smith recommends adding water at silo-filling time to all forages containing less than 40 percent moisture.

Fires are most likely in conventional upright silos, Smith noted. But those newer oxygen-limiting, upright steel silos are subject to both fire and explosion if careless air leaks are allowed to occur.

With these newer silos, local fire departments need to be alert that pouring water on smoldering silage may only make things worse. One of the leading manufacturers of this type of silo has supplied its dealers with a four-page bulletin which gives instructions for putting out fires in an oxygen-limiting structure.

To reduce the possibility of dangerous nitrogen gases produced by fermentation, Smith recommends cutting stover at least 18 inches above ground level — since nitrate toxicity normally is concentrated in the lower one-third of plant stalks.

The highest levels of poisonous gases are present during the first 48 hours after chopped forage is placed in an upright conventional silo. But they may be present at dangerous levels for up to three weeks.

Smith suggests leaving your silo blower in place for a month after filling. Keep unloading doors removed down to the top level of the silage. Run the blower for at least 15 minutes each time before entering the silo.

If you're in a hurry to start feeding silage to your cattle, let the initial 48-hour danger period pass. Then use an approved, self-contained breathing apparatus when you enter the silo.

Even if you only suspect that you

have been exposed to nitrogen oxide gases, see your doctor as soon as possible. Exposure symptoms include irritation of eyes and mucous membrane, shortness of breath, and fever, plus accumulation of fluid in the lungs.

Nitrogen oxide gases are not to be confused with nitrous oxide, the

"laughing gas" used by many dentists to produce loss of sensibility to pain. Nitrous oxide also is used as an aerosol propellant in whipped cream and other food products.

But the nitrogen gases produced in farm silos are no laughing matter, Smith declared.

Pasture Field Day Set

DONEGAL — A field day to demonstrate the Voisin method of rotational grazing will be held Friday, Sept. 12 in Westmoreland County. The Voisin system, which involves strip grazing, is currently under trial at several farms in the county. The field day will focus on the system as it applies to dairy herd grazing.

Tom Calvert, regional Soil Conservation Service agronomist will talk on the management of intensive grazing. Carle Bebes of the Westmoreland County Soil

Conservation Service will discuss farm management, and Gary Shepard of the county Extension Service office will discuss feeding strategies for dairy cattle.

The field day will be held on the Burton Mulhomin farm, M & N Dairy, near Donegal. Lunch for the event is free, provided by the Westmoreland Conservation District. For more information on the field day, contact the Westmoreland County Extension Service office at (412) 837-1402.

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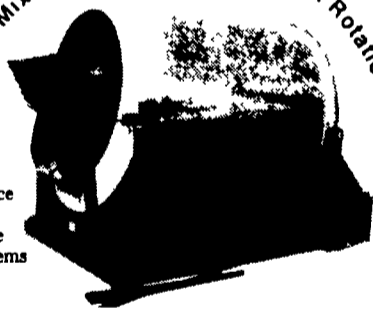
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