

Preventive Measures Ensure Farmer Safety Around Silos

This is the last of a series.

Editor's Note: The previous two articles in the series examined farmers' experience with exposure to silo gas and molds. Reporting of the incidents and the actual incidents themselves have decreased over the years. The final installment examines safety measures farmers can use when working with silos.

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Lancaster Farming Staff
COOPERSTOWN, N.Y. — Silo safety should be simple.

Now there is an organization that wants farmers to know how to protect themselves while filling or unloading silos.

"Respiratory Hazards In The Farm Environment" is a little brochure that you can keep in the back pocket of your jeans. While it may be too small to swat flies or to act as a good fan on sweltering summer days, the information inside is extremely valuable for protecting your life.

The brochure, available from the New York Center for Agricultural Medicine and Health, indicates that a person's lung is particularly sensitive to environmental dangers.

When a silo is filled, forage begins to work — to ferment. As a result, oxides of nitrogen begin to build up and accumulate in pockets in the silo. The reddish-brown gas can be seen, but often is odorless and powerless.

A small amount breathed in deeply can be deadly, because it robs the lungs of oxygen. Oxygen can't get to the heart. The heart stops beating.

A silo, once filled, should be immediately leveled off. Many experts agree there is no excuse whatsoever to wait, even a short length of time. If for some reason it cannot be leveled off right away, then a blower should be activated and run for about 30-45 minutes before anyone enters the silo to level off silage or haylage.

Many fire departments, according to silo gas victim Rodney Martin, have self-contained breathing units. These must be worn, even if the farmer will only open doors in the chute to vent the gases.

All people and animals should be kept completely clear of the chute — only the operator, wearing the unit, should enter, and only

then for a brief period of time.

If in doubt about any procedure, the operator should wear a respirator — not a dust mask or an air filter, but a self-contained, oxygen-supplied breathing apparatus.

If the silo must be entered before the 45 or so minutes of running the blower, it should be entered only wearing the self-contained oxygen respirator.

Other hazards which the respirator can protect against include exposure to the toxic molds from baled hay and in silage, and unloaders' syndrome, which is exposure to dust from silage. Often, the mold and dust exposure over a long period of time can cause a syndrome known as "farmer's lung." A good respirator will prevent that.

"The fact that there are a lot of hazards out there is just accepted by most farmers as part of farming," said Dennis Murphy, Penn State professor of ag engineering. According to Murphy, farmers should consider wearing protection devices such as the respirators a lot more often — an investment that will pay off, over the long run, in better health.

But even some conditions can be too dangerous. Murphy said that even a self-contained apparatus may not be sufficient if a farmer enters directly into a silo without some kind of pre-ventilation of the silo.

"Obviously we don't want people in that atmosphere, because it's too dangerous," he said. A leak in the mask could occur and the farmer could still be overcome and "end up with serious injury."

Murphy said that "risk can be managed. There's a lot of evidence that we can educate and increase awareness and knowledge about hazards," he said.

Making that education translate into farmer action is another challenge.

But Penn State is pursuing a study to see what kind of educational approaches really make a difference out on the farm to change the hazards and risks of the farm to prevent more injuries and death as a result of silo gas and mold exposure.

For now, farmers can do the following, courtesy of the New York Center for Agriculture Medicine and Health, to prevent breathing troubles on the farm:

- Avoid cigarettes and encour-

Protect Your Lungs When Working Around A Silo

The following chart details the protection necessary for working in different conditions on the farm. Note that different masks are required for different tasks.

| RESPIRATORY HAZARD | REQUIRED PROTECTION |
|---|--|
| Pesticide dusts, mists, vapors, and gases | • A NIOSH-approved chemical cartridge respirator or gas mask with added pre-filter. For extremely high concentrations, where the oxygen level may be low, wear a supplied-air respirator. Refer to pesticide container label for additional requirements. |
| Mold dust, grain dust, manure dust, dust from poultry operations, road or field dust, and untreated sawdust | • A NIOSH-approved mechanical filter respirator or dust/mist mask approved for use with toxic dusts. |
| Ammonia | • A NIOSH-approved chemical cartridge respirator or gas mask approved for use with ammonia. |
| Hydrogen sulfide (manure gas) | • Supplied-air respirator approved by NIOSH. |
| Nitrogen dioxide (silo gas) | • Supplied-air respirator approved by NIOSH. |
| Welding fumes | • A NIOSH-approved mechanical filter respirator approved for use with fumes. |
| Spray paint mists | • NIOSH-approved mechanical filter respirator approved for use with spray paints or organic vapor cartridge with paint pre-filter on chemical cartridge respirator. |
| Carbon monoxide (gas-powered vehicle or machinery exhaust) | • NIOSH-approved gas mask or supplied-air respirator. |
| Fumigants | • CAUTION: Fumigants are highly penetrating and some can penetrate the rubber and plastic parts on respirators. In addition, some are colorless and odorless and give no warning or exposure. Many respirators approved for pesticides are NOT approved for protection against fumigants. For the best protection, completely avoid fumigants and treated areas yourself, and leave entry into treated areas to trained professionals. |

age co-workers to quit.

- Stay out of freshly filled silos for two weeks.
- Always run the blower before entering a recently filled silo.
- Keep forage and straw dry in the barn.

• Use a dust mask (NIOSH- or MSHA-approved) when working in dusty situations.

- Keep ventilation fans running in the barn.
- If you use a bedding chopper, always wear a mask.
- Never attempt a rescue into a gas-filled situation. Always get help.

• Avoidance of breathing hazards may save a life.

For more information, contact the New York Center for Agricultural Medicine and Health, 1 Atwell Rd., Cooperstown, NY 13326, (607) 547-6023; in N.Y., (800) 343-7527.

For farmers who want to start a silo safety program, keeping up with the latest information on safety is a good start. The International Silo Association, based in Lafayette, Ind., has available an updated version of its "Silo Operator's

Manual," which includes a section on silo gases and diseases. This is one of the most comprehensive and extensive compilation of facts and figures available regarding what silo gas is and how farmers can protect against it. Much of this information is highly recommended by ag engineers and silo specialists from around the country. For more information, contact Drew Freeman, International Silo Association, 219 N. Fourth St.,

Lafayette, IN 47902-0560, (317) 742-0083.

Many silo safety signs are available from silo manufacturers across the country, free of charge. Contact your silo manufacturer for more information.

Also, Penn State has an array of information on silo safety. Contact Penn State Agricultural Engineering Department, 246 Agricultural Engineering Building, University Park, PA 16802, (814) 865-7685.

Regional Christmas Tree Growers Meeting Set

SCHUYLKILL HAVEN (Schuylkill Co.) — Christmas tree growers and individuals interested in growing Christmas trees are invited to a program sponsored by Penn State Cooperative Extension and Pennsylvania Christmas Tree Growers Association.

Dr. Paul Heller, Penn State University extension entomologist, will discuss the research being conducted on Cooley Spruce Gall Adelgid. Also, a spray coverage demonstration will be held with water and oil sensitive paper.

Rayanne Lehman, Pennsylvania Department of Agriculture entomologist, will give an update of the latest insects found on Christmas trees in Pennsylvania.

Philip Staudt, Pennsylvania Department of Agriculture pesticide program, will give an update on

pesticide rules and regulations pertaining to Christmas tree production.

Jeff Hill and manufacturing representatives will demonstrate equipment needed to operate a modern Christmas tree plantation.

A representative of the Pennsylvania Christmas Tree Growers Association will give an update on the activities of the association.

The meeting will be held Thursday, July 21, starting at 1 p.m. at the J.C. Hill Tree Farms, Rt. 895, RR 1, Orwigsburg, Pa. This meeting will qualify for credits toward pesticide recertification.

For more information, contact George P. Perry, Jr., Extension Agent/Horticulture, Penn State Cooperative Extension - Schuylkill County, 199 University Drive, Schuylkill Haven, PA 17972-2201, (717) 385-3431.

Newsome Joins AJCA

REYNOLDSBURG, Ohio — The addition of Waymon C. Newsom Jr. to the staff of American Jersey Cattle Association has been announced by Executive Secretary Calvin Covington. Newsom will join the field staff as a part-time area representative.

Newsom will work with Jersey Marketing Service in managing

public sales and will also provide field service in Texas. He has assisted with many JMS sales on an "as needed" basis for several years. In addition, Waymon owned and managed a successful Jersey herd from 1970-1990.

Waymon is an alumni of East Texas State University and resides in Mt. Vernon, Texas, with his wife Diane.

MILK. IT DOES A BODY GOOD.

General Tips For Preventing Breathing Troubles

For more information contact the New York Center for Agricultural Medicine and Health, 1 Atwell Rd., Cooperstown, NY 13326, (607) 547-6023 in N.Y. (800) 343-7527 or the Penn State Ag Engineering Department, 246 Ag Engineering Bldg, University Park, PA 16802 (814) 865-7685