

Agricultural Newsletter

UW-Madison College of Ag & Life Science
University of Wisconsin-Extension



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Danger from deadly silo gas is greater due to stress on corn

Bill Saumer
Area Agriculture Agent
Burnett, Washburn, & Sawyer Counties

Deadly silo gas is a concern every year for corn producers who harvest their crop as silage. Crop stresses are adding to the danger this year because dry conditions and wind have affected corn and other forage plants in many areas. Generally, silo gas levels are higher in plants that have been drought stressed or otherwise damaged by wind, insects or disease. High weed content in chopped silage material also adds to the silo gas problem, since weeds are less able to convert the nitrogen they take up into protein.

Silo gas is the common term for nitrogen dioxide. Most farmers are somewhat familiar with the gas, but don't always understand the true risks. Silo gas is formed as a natural by-product of silage production when chopped-up plant material ferments in a silo.

Dangers aren't limited to upright silos. Typically, silo gases are associated with upright, concrete silos, but silage in bag systems and bunker silos also produces silo gas. The risks with these other storage systems is lower, however, since they are more easily ventilated with ambient outside airflow. Oxygen-limited silos present different hazards, including the absence of oxygen if a person enters such a structure.

The gas has an acrid, bleach-like odor. It's brown to a yellow hazy color, but can be difficult to see in dim lighting. It's heavier than air, causing it to settle into low-lying areas. These may include the bottom of silo chutes, between silage bags or in low spots within a bunker silo.

Silo gas is highly toxic, even at low levels. Toxic exposure can and does occur to producers, children, livestock, and pets who are exposed to the gas.

A farmer or family member exposed to low levels of silo gas might only notice some mild irritation or intermittent coughing. With higher gas levels, people can become unconscious, and if not removed to fresh air, will die from the gas.

At the lower levels of exposure, the nitrogen dioxide will oxidize in the lungs and create nitric acid. The acid is highly irritating and corrosive. The lungs respond by trying to dilute the acid with more water. Thus, a person can die several hours

Northern Safari 2004 Topics

Composting Livestock Mortalities
January 28-30

Low-Cost Livestock Facilities
February 4-6

Direct Marketing Ag Products
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(cont.)

or even days after an initial exposure to silo gas, due to excess fluid build-up in the lungs. In some situations, death can occur immediately after only one breath of a silo gas and the farmer has no chance of survival even if fresh air is taken in.

Producers frequently ask for an ‘easy’ answer about how they can enter a silo safely right after they’ve filled it, but there is no easy answer. The best answer is to stay out for three weeks to a month unless you have a self-contained breathing unit. Dust masks and pesticide respirators with cartridges offer zero protection against silo gas.

To avoid silo gas exposure, observe the following recommendations:

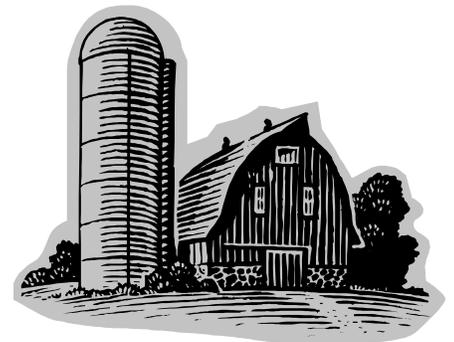
- Don’t allow anyone near the silo or in attached buildings during the two to three weeks after filling. Post a big warning sign for adults, and keep kids out with locks and barriers.
- Ventilate the feed room to remove silo gas that may “spill” down through the chute or be blown out by the unloader.
- Adjust the forage distributor to level silage during the filling process. Don’t enter the silo to level the material by hand any time the gas is present, even at low levels.
- Always ventilate the silo with the blower running at maximum speed for at least an hour before entry, even after the three-week period of greatest danger has ended. Keep the blower running during silo entry.
- A silo is considered to be a potentially deadly confined space.

If you have employees entering the silo at any time, specific regulations apply for protecting the workers. Remind your employees of the hazards and know what regulations and safety precautions you are required to provide.

“A person can die several hours or even days after an initial exposure to silo gas.”

If you absolutely must enter the silo, you need to do it immediately after filling. But even then, there could be significant levels of gas, so maximum ventilation is essential.

Obviously, safety and common sense come into play here to ensure safety for the farmer, family members and workers. Past experiences can actually be a problem if a farmer thinks that just because for years he has been climbing in the silo “x” number of days after filling without a problem, that he can do it again this year. Remember, every year is different and drought stressed corn can be a problem, which many farmers have this year. So, stay out of the silo and if you have to go in, please go in safely and with the right equipment. We want to see your name in the paper associated with a happy story and not a tragic one.



Haylist assists both buyers and sellers

*Kevin Schoessow
Area Ag Development Agent
Burnett, Sawyer, & Washburn Counties*

The combination of alfalfa winterkill this past winter and drought this summer have lead many dairy and livestock producers to look for additional supplies of hay. This increase in demand has led to upward pressure on hay prices locally.

A survey of hay markets in the Upper Midwest indicates hay supplies are generally good and demand is moderate to light. South Dakota reports good supplies of alfalfa with steady prices. Hay supplies in Nebraska appear to be adequate, with good interest from potential buyers, but slow sales. Missouri also reports moderate supply, but light demand.

With hay still available throughout the Upper Midwest and demand slow, this is a good time for producers who need to purchase hay to do so. Inventory your hay on hand now, and estimate your forage needs for the remainder of the feeding season.

Prices for premium quality alfalfa averages about \$118 per ton in the Upper Midwest for small square bales. Large square bales are averaging just over \$100 per ton and large round bales average \$80 per ton for high quality hay with a Relative Feed Quality (RFQ) over 151.

Good quality hay ranging from 125-150 RFQ is averaging \$78 per ton for small square bales to \$57 per ton for large round bales. These hay prices generally do not include delivery charges.

UW-Extension has established a webpage to help clients buying and selling hay and straw. This website includes information on how to buy and sell, current prices, and web-based haylists to buy and sell hay. This web site includes topics such as: What do I need to know before I buy or sell hay? What is straw and hay currently selling for? Where can I buy or sell hay or straw? Included at this site is the Upper Midwest Haylist, which allows farmers to sign up on line to buy or sell hay. The haylist can be found at the following web address; <http://www.uwex.edu/ces/forage/>. If you don't have access to a computer and the Internet, call either Bill or Kevin at the Spooner Area UW-Extension office at 1-800-528-1914 or 635-3506 and we will gladly post your request.

Compost animal mortalities as an alternative

*Tom Syverud
Extension & Outreach Researcher
Ashland Ag Research Station*

On farms it is a common occurrence--animals die because of disease, accidents or other reasons. At one time it was easy to send the carcass to the rendering plant--not anymore. A good alternative is composting animal carcasses. This process can be lower cost and environmentally friendly. Select a site that is dry, away from surface water, and has plenty of room for equipment to turn the compost pile. Assuming a four percent mortality rate for a 50-cow herd, that is two cows a year plus calves that need to be composted. Allow for that much room. Start your pile with a one to two foot layer of straw, bedding or

sawdust. Cover the carcass with an additional one foot of material, then wet the pile down. The process will take six to eight months.

Dan Short, UW Extension Livestock Specialist will give composting recommendations and present his research information on composting of mortalities in January 2004 during the Northern Safari tour of agricultural presentations in the northern counties.

Drought-stressed corn may have high nitrates

*Tom Syverud
Extension & Outreach Researcher
Ashland Ag Research Station*

Several factors contribute to high levels of nitrates in drought-stressed corn. When leaves die, the plant can not properly utilize the nitrogen fertilizer that is taken up from the soil. Secondly, after a rain, nitrates are taken up fast and it takes time for those to equalize throughout the total plant. Other factors include high levels of fertilization, frost damage, and other nutrient deficiency problems.

Ensiling is the best way to handle stressed corn, because in two to three weeks the potential for nitrate toxicity is eliminated. Raise the cutter bar and chop high, leaving 12 inches of the stalk in the field. When opening the silo; however, run the blower an extra 30 minutes because the amount of silo gas produced during this time is very high. When first feeding this silage, several steps can be taken to minimize problems. Introduce the silage into the diet slowly and mix with other low-nitrate feeds. Finally feed a balanced ration because nitrate toxicity is worse when the diet is low in energy.

Milk Money profits WI Dairy business community

Richard Vine and Jeremy Heim are Wisconsin dairy producers living in different parts of the state with two completely different management styles and herd sizes. While Vine milks his cows in a traditional tie stall barn in Clark County, Heim's Kewaunee County operation has grown to include the use of a milking parlor and a modern free stall barn.

What they do have in common are the substantial benefits of participating in Milk Money, the University of Wisconsin-Extension program available to all Wisconsin dairy producers as a means of improving milk quality.

"The production of high quality milk has never been more important," says Dr. Pamela L. Ruegg, DVM, MVPM, UW-Extension Milk Quality Specialist, UW Department of Dairy Science and the designer of the Milk Money program. "Consumers demand that their milk be produced under the most hygienic standards and they expect their milk to come from healthy cows.

"The production of high quality milk is essential to the continued profitability of the Wisconsin dairy business community," Ruegg adds. Several years ago, Ruegg used a pilot study to test her hypothesis that dairy producers would strive toward improved milk quality if they could work together more closely with their consultants in "teams." The results of the pilot study were highly

encouraging and lead to the formal roll out of the "Milk Money" program, a team-based approach to managing for milk quality.

A recent look at before and after data supplied by 75 dairy herds completing the Milk Money program further emphasizes not only the value of the program itself, but also the role of UW- Extension. Leadership provided by county Extension agents throughout Wisconsin contributes to the results dairy producers harvest from the Milk Money program.

"The Milk Money program serves as an example of how UW-Extension can work with the Wisconsin dairy business community to achieve mutual goals"

On average, each of the 75 dairies improved monthly milk income by \$2,032. The total improvement in monthly milk income for these 75 herds was \$152,403. That's \$152,403 being returned to these 75 dairy families each month for use in paying bills and reinvesting in their operations, Ruegg notes. If carried out for a year, that's \$1,828,836 increased return for these 75 herds.

"Team leaders are very important to forming successful Milk Money teams. UW- Extension agents served as team leaders on 26 of these dairies and are a driving force in assisting Wisconsin dairy producers to use the program most effectively," Ruegg says.

Typical benefits Wisconsin dairy producers see when working in Milk Money teams include: reductions in

bulk tank somatic cell counts (BTSCC), a key indicator of milk quality, a reduction in cases of clinical mastitis, a reduction in sub clinical mastitis, a reduction in treatment costs, and an increase in quality milk production. Because milk plants pay bonuses for quality, producers often reap an increase in what they are paid for their milk.

The benefits Wisconsin dairy producers see usually result from the adoption of the best management practices (BMP) discussed and then implemented during Milk Money. Such BMPs include: more routine analysis of milking equipment, performing bulk tank cultures, culturing for clinical mastitis, keeping better treatment records, developing standard, written milking routines, wearing gloves during milking, more frequent consultation with dairy professionals, and adaptation of the team management style.

Additionally, the Milk Money program serves as an example of how UW-Extension can work with the Wisconsin dairy business community to achieve mutual goals. Major financial support for the Milk Money program comes from the Wisconsin Milk Marketing Board (WMMB), a milk marketing and promotion organization funded by producer check-off money. The WMMB sees quality milk production as a cornerstone in promoting Wisconsin dairy products in national and global markets.

Bill Saumer has assisted several producers in the Burnett, Sawyer, and Washburn county area with the Milk Money program. If you have questions regarding this or any other program, contact him at 1-800-528-1914.

Who's on your side?

John Markus
Area Agricultural Agent
Ashland & Bayfield Counties

No man is an island. Certainly that old saying applies to the food system as it faces opposition from a host of activist groups. You simply will not succeed alone. The thing is, your industry doesn't have to work alone.

Each industry segment has its own association that works in its favor. Essentially all of them at least monitor opponents' issues and activities. Some lobby, and others conduct research and educate members and the public. Here is a list:

American Association of Bovine Veterinarians – www.aabp.org

American Association of Food Hygiene Veterinarians – www.avma.org/aafhv/default.htm

American Association of Swine Veterinarians – www.aasv.org

American Farm Bureau Federation – www.fb.org

Animal Health Institute – www.ahi.org

Dairy Management Inc. – www.dairyinfo.com

Food Marketing Institute (retail grocers) – www.fmi.org

National Cattlemen's Beef Association – www.beef.org

National Council of Chain Restaurants – www.nccr.net/newsiteindex.html

National Pork Board (research, promotion and education) – www.porkboard.org

Free soybean cyst nematode testing offered

A limited number of free test kits will be distributed on a first-come, first-served basis. Each kit has a bag and a prepaid mailer for one soil sample which should represent 10-15 acres. Postage and lab fees are prepaid.

These test kits are available now and can be requested from the Spooner Area UWEX office at 1-800-528-1914 or directly from Colleen Smith at clsmith8@wisc.edu or 608-262-7702.

National Pork Producers Council (public policy, legislation and regulatory issues) – www.nppc.org

There are a few groups that are working to join food system voices against the activists. Here is a snapshot of those groups:

Animal Agriculture Alliance
www.animalagalliance.org

Headquartered in Arlington, VA, the Alliance evolved from the Animal Industry Foundation in 2001 to expand its scope of work and reach a broader audience. Its stated mission is to “support and promote animal agriculture practices that provide for farm animal well-being through sound science and public education.”

Membership requires a “tax-deductible commitment” annually. Alliance members include a variety of agricultural and food industry associations, science and research organizations, food-animal producers, cooperatives and allied industries.

Center for Consumer Freedom
www.consumerfreedom.com

Headquartered in Washington, D.C., the CCF is a “non-profit coalition supported by restaurants, food companies and consumers working together to promote personal responsibility and protect consumer choices.”

As stated on its web site: “CCF is not opposed to any group. We are opposed to actions that restrict your right to make your own choices, and to extremism that endangers businesses and individuals in the name of ideology.”

The CCF receives financing via tax-deductible contributions. It acts as a watchdog, and something of an attack dog, against a variety of activist causes. It provides profiles and financing information on activist groups at www.activistcash.com. It also monitors the Center for Science in the Public Interest at www.cspiscam.com and the animal rights' movement at www.animalscam.com.

Faces of Agriculture
www.facesofag.com

“Securing our future in food production” is the tag line on the group's web site. FOA is reaching out to crop and livestock producers, processors, retailers and other “critical players in the production of food.” Made up primarily of producer volunteers, the group offers tips and resources to inform others about agriculture and food production. “It is time to balance the scale with common-sense ideas based on sound science,” the FOA web site states.

Source: *Food Systems INSIDER* July 2003

Spooner ARS agronomy update

*Phil Holman
Asst. Superintendent
Spooner Ag Research Station*

Harvest is progressing for some of the research trials, and soon we will be harvesting our general production fields. One thing that is very apparent is the benefit of irrigation.

Corn: The corn died early and has some European corn borer pressure. The corn plants in the field are lodging; with up to 75% of the plants falling over for some varieties. The non-irrigated sandy soil variety trial had averages from 50-90 bu/A. The plants had pollinated but seed fill was poor with most varieties having very small kernel size. The silt loam location and irrigated plots have not been harvested yet.

Corn Silage: The silt loam location variety trial had many long season varieties which had barely pollinated before the dry weather. Some had not even dented, however the plant was below the normal moisture range for corn silage. Yields were around 6 tons dry matter per acre for the silt loam site. The irrigated trial had exceptional silage yields with wet harvest over 30 tons per acre and some varieties around 10 tons of dry matter per acre.

Soybeans: The irrigated soybean variety trial yields ranged from 37 to 53 bushels per acre. The silt loam location yields ranged from 15 to 30 bushels per acre. Yields were affected by the dry weather and also showed any slight difference in elevation in the plot area. Soybean seed size was very small.

Alfalfa: First winterkill, then drought conditions affected the alfalfa. Yields were poor for both first and third harvests. Another blow to the forage supply is that the pastures quit producing forage because of the dry weather. Late summer seeded alfalfa looks good in one field and fair in the other. Both fields are irrigated. The seed is still in the bag for the other field that should have been seeded.

Canola: Canola yields were great. I don't have exact numbers but the rough estimate was over 3,000 pounds per acre on some of the varieties. For those interested in another grain crop, canola may fit the rotation. I have also learned that the river elevators are buying canola, so we now have an available market for the grain.

Potatoes: Potato variety, herbicide and disease plots were harvested in mid September. Yields ranged up to 400 cwt/A and the potatoes had a good appearance. One problem we had was that the sandhill cranes took a liking to potatoes in August. Garbage bags on poles in the fields seemed to keep them away.

Emergency Forages: This study will give results on what yields to expect and how to manage different species such as soybeans for forage, sudangrass, sorghum-sudangrass, foxtail millet, pearl millet, Japanese millet, corn silages, new seeding alfalfa, forage barley, barley & peas, oats & peas, and Brown Mid-Rib forage sorghum.

So far there have been some successes and some things have been learned about what not to do or expect from some of the plant species.

I still have several things to harvest, and then data for the studies will be put together. Complete information on the Ag Research Station Trial Results will be available at that time. Extension publications, the Internet and farm publications have the variety trial results in early December. Other trial results are used for researcher presentations at industry or grower update meetings. The emergency forages information will be published on the Internet and into an extension publication.

New Research Plots:

Winter Wheat: Some of our oats fields and all the sudangrass fields were planted to winter wheat. Included is a winter wheat variety trial to look at winter hardiness and yields. Many of the newer high-yielding winter wheat varieties were developed further south and have had limited winter hardiness testing.

Alfalfa Grass Mixtures: Included in the late summer seeded alfalfa is a trial to look at the yield and quality of alfalfa grass mixtures. Treatments are alfalfa alone, alfalfa/timothy, alfalfa perennial ryegrass, alfalfa early maturity orchardgrass, and alfalfa with a late maturity orchardgrass. These treatments also will have vegetative, early bloom and full bloom harvests to measure the yield increase and quality decline.

Forage Grass Maturity: Several varieties of orchardgrass, timothy, perennial ryegrass, and fescues were seeded in August. Next year maturity ratings will be taking as to their heading date. This study is being done with the same varieties and same species in several locations and states to see climate effects on grass maturity.

Questions about organic agriculture? We've got answers!

*Kevin Schoessow
Area Ag Development Agent
Burnett, Sawyer, & Washburn Counties*

As farm businesses look for ways to remain both profitable and sustainable, there are more and more who are taking a closer look at the organic market. The organic agriculture industry has steadily grown over the years as the demand and marketing of organic products has grown. Organic products are no longer found in the specialty food stores of large urban centers, they are finding their way onto shelves in local grocery stores and in farmers markets and roadside stands all across the state.

There are many reasons why farmers participate or at least are interested in participating in certified organic production. Prices received for certified organic products is perhaps the first reason to “go organic”, but equally important is the commitment to sustainable farming practices that foster recycling of resources, promote ecological balance, and conserve biodiversity.

I recently had the opportunity to attend a “crash course” on Organic Agriculture, with specific emphasis on grain and row crop systems. The Midwest Organic and Sustainable Education Service or MOSES sponsored this training. The purpose of the workshop was to provide UW-Extension agents with the resources, contacts and knowledge to help farmers make decisions on whether “going organic” is the right business and personal decision to make.

The training was fast paced and we received a binder full of resources with contacts, directories, check sheets, teaching materials, regulations and rules and production references. There was even a small section on research. In the interest of space, I won't go into all the details or requirements of organic certification, but I would like to outline some key points:

First--know your markets! As I stated earlier, prices are perhaps the main reason why farmers have an interest in organic production. Just because your neighbor sold organic soybeans for \$15/bu is no guarantee that you will. Growing and marketing organic products requires farmers to understand what the buyer's needs are before selecting a certifying agency, much less a crop to grow.

The second point is--be prepared to document, document, document. The whole reason why organic products demand a higher price is that the consumer has confidence that organic products are produced in accordance with set organic standards. It is for this very reason that the USDA initiated the National Organic Program and the National Organic Standards. These standards were put together with considerable input from consumers, organic producers, organic agencies, inspectors, and associations. While there are still some “rough edges” to smooth out, these standards spell out the legal requirements that all organic certifying agencies must follow.

The basis for organic certification is the organic system farm plan. This plan not only spells out production practices, such as crop rotations, nutrient management, weed/insect management, but also requires

farmers to document all aspects of producing the products. This would include a field activity log that documents all activities that took place with production, from planting the crop, to dates of cultivation to harvest and storage. Records include affidavits of all purchases stating that they comply with current organic requirements. There must also be documentation on how the crop was harvested, what was done to insure there was no commingling or contamination. Even harvest yields are to be documented. Each certifying agency has their own specific requirements on how this is done, but the fact of the matter is that organic farmers must be willing to share this documentation with certifying agencies, inspectors, government officials and even buyers.

“Products are now appearing in local grocery stores”

The third point I would like to make is that farmers must completely understand or “believe” in the sustainable whole system approach to farming organically. Like any other business there are some very specific requirements for success. As a farmer, if you are not excited to make changes and subscribe to the organic system, chances are you will not succeed. For many organic farmers, it is the life style as much as the farming style that creates and drives their desire to farm organically.

If you would like more information on organic agriculture, please give me a call. In addition to all the contact information available, I also have a compliance checklist that producers can fill out to determine how close you might be to complying with Federal Organic Standards.

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gasses**

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**Check out the updates on all the
new research trials**



Kevin Schoessow
UWEX Area Agricultural Agent

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