



## MONTHLY NEWSLETTER



### Foxboro

PO Box 280  
552 Ashley St.  
Store: (613) 962-0769



### Picton

38 Cold Storage Rd.  
Store: (613) 476-2171  
Crops: (613) 476-9183

Fuel: 1 (866) 924-2322

[www.countyfarmcentre.com](http://www.countyfarmcentre.com)

### Madoc

278 Lawrence St. W  
Store: (613) 473-9040



## AGRONOMY CORNER

### NITROGEN AS A SYSTEM

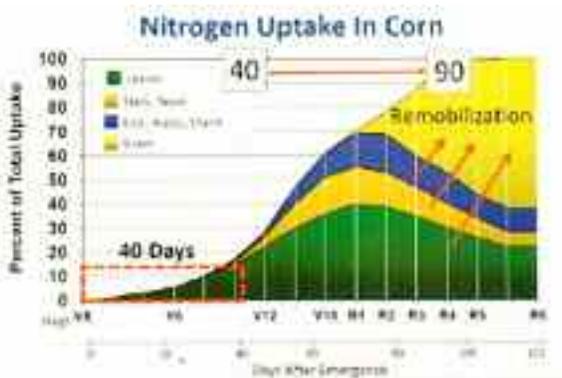
How do we manage Nitrogen?

- Need to look at Nitrogen differently
- Use all the tools that we have
- Build the system to match your farm and the crops demand for nitrogen



Why does it matter?

- Manage nitrogen losses
- Increase yield
- Get the most out of your input dollars
- Protect the environment



## IMPORTANT ADDRESS CHANGE

Our Foxboro address is changing May 1, 2018. The PO box number must be included going forward. The complete address is:

**County Farm Centre**  
**PO Box 280**  
**Foxboro, On K0K 2B0**

## STORE NEWS

Father's Day is June 17th and we have a flyer loaded with great ideas for dad - BBQs, lawn-mowers, tools and snacks.



Keep an eye out for this month's flyer in your mail.



## Dangerous Gases in Confined Spaces on Farms

Confined spaces are dangerous not just because ingress and egress from such a space, which is not designed or built for continuous human occupancy, is difficult or restricted. These pockets of space are also potentially deadly as they may contain a hazardous atmosphere. For those who work in agriculture, exposure to dangerous gases in confined spaces like a grain silo or a manure spreader tank is a real risk.

Silo gas is formed by the natural fermentation of chopped silage shortly after it has been placed in a silo. Although a variety of gases are released during this process, the type of silo in which the forage is stored determines which type of gas will be predominant, according to guidelines for farming operations from the Ontario Ministry of Labour (MOL).

For example, both nitrogen dioxide and carbon dioxide are created in sealed silos, but carbon dioxide is produced in far greater amounts, which can replace the silo's oxygen. In high concentrations, carbon dioxide can overcome someone with little warning.

Nitrogen dioxide, on the other hand, causes severe irritation to the nose and throat and may lead to inflammation of the lungs. Low-level exposure to this gas triggers little immediate pain or discomfort, yet death can occur immediately. A farmer might breathe the gas without noticing any serious ill effects and die in his sleep hours later from fluid collecting in his lungs, the MOL notes.

Potentially lethal levels of nitric oxide (NO) and nitrogen tetroxide (N<sub>2</sub>O<sub>4</sub>) can also be produced in the silage process, according to Health and Safety Ontario. These gases start forming soon after loading chopped plant material into the silo. Exposure to NO can result in chemical burns, permanent lung damage and even death.

Dangerous gases in confined spaces like manure storage and silos are always present. For example, manure from a storage pit needs to be agitated to minimize solids accumulation and create a uniform fertilizer for field application. While the practice of agitating stored liquid manure is followed extensively by farmers, the churning itself releases accumulated gases like hydrogen sulfide and methane, which pose a significant health risk to both people and animals in the facility. Michigan State University recommends the following safety precautions when agitating manure pits:

- Do not enter the barn while manure is being agitated in the pit below. Instruct family members and animal caretakers to stay out of the building while the manure is being pumped and agitated.
- Use lock-out tags to remind everyone of the activity taking place.
- Set ventilation rate at the maximum level and adjust fresh air inlets to meet the needs of the barn's exhaust fans, but do not open doors and windows that are not normal fresh air inlets, as this unplanned area of incoming air may short circuit the system, causing stagnant areas with little or no air movement.
- Be extremely cautious if the manure in the pit is foaming. Foam contains high levels of methane, and agitating the manure will break the foam bubbles, resulting in methane build-up in the building that can cause fires and explosions.
- Never enter any manure pit, small or large, without proper safety equipment.

Like manure storage pits, silos also contain toxic gases that can quickly overcome a person. Ontario's Ministry of Labour recommends the following safety measures when working in and around silos:

- Watch out for gas odours and fumes that are yellowish-brown or reddish in or near a silo. Silo gas is heavier than air and will displace oxygen.
- The greatest danger from nitrogen dioxide gas from silage is during the first 12 to 60 hours after filling. If gases are detected, do not enter the silo for up to six weeks after filling stops.
- Workers should not enter a silo without a self-contained breathing apparatus and a safety harness attached to a life-line.
- If a worker has to enter a silo, there should be another person outside to render assistance if needed. Keep a hatch door open near the level of the silage within the silo.
- Post all appropriate warning signs to warn people of the need to stay away from these areas and to only enter them with appropriate training and personal protective equipment.

Jean Lian is editor of OHS Canada.

