

# Manure Storage Study Finds Farmers Risk Safety

(Continued from Page A1)

aid of the Ag Advisory Committee to the Department of Environmental Resources (DER), the SCS compiled a list of 125 farms. SCS engineers, along with representatives of the conservation districts, interviewed a total of 99 farm managers about the installation, use, and management of the facilities.

If used as a report card for the integrity of manure storage construction, the 99 farms passed the test. Only a few had minor prob-

lems with the structure or design integrity.

But on the safety factors, farmers at best scored a "F" — failing to make the grade and, in many cases, literally threatening their lives and the lives of those who work on their farm.

## Warrant investigation

Safety and management practices together had flaws serious enough to warrant investigation. (See "A Sad List of Failures,"

which accompanies this article.) The experts interviewed by *Lancaster Farming* all agreed on one major factor — the farmer's failure to protect himself with a self-contained breathing apparatus (SCBA).

"I think the most striking thing to me was that over a third of the operators admitted to going down into a pit without protection," said William J. Bowers, state conservation engineer. "And if a third of them admitted it, probably half of

*'I think the most striking thing to me was that over a third of the operators admitted to going down into a pit without protection. And if a third of them admitted it, probably half of them have done it. That's a real concern.'*

them have done it. That's a real concern."

Many farmers, because they are too busy during planting season, are pressed for time and don't take the necessary steps to ensure they protect themselves from the many dangerous and lethal gases contained in a manure structure.

Because of time and priority implications, farmers are "hurrying to get the work done," according to Robert J. Thompson, agricultural engineer with the Lebanon

## Hurrying

ing to Robert J. Thompson, agricultural engineer with the Lebanon



Frank Goodlander, Lewisberry, served on the Ag Advisory Committee to oversee the manure structure study. Farmers must take time to look into safety considerations of the manure structures, according to Goodlander.

gates and keep them adequately maintained, many farmers who

*'I really don't think you can be too busy to make a safe situation.'*

SCS office. In that county alone, about three farms provided data for the survey that went into the report.

Thompson said farmers must take time to look at their existing systems to make sure safety factors are in place. "I really don't think you can be too busy to make a safe situation," he said.

Thompson recalled the time that a Newmanstown dairy farmer, was busy scraping manure from a bunker area into a manure pit. The farmer and the tractor ended up in the pit, and the farmer drowned as a result.

If farmers would install safety

died as a result of drowning in manure storage ponds or lagoons "might be alive today," said Thompson.

## Tractors fallen

Thompson said that two farmers interviewed in the study admitted that tractors have fallen into manure storage pits. "It's amazing more farmers don't die with accidents like that."

"We really feel that, in order to have a safer facility, there ought to be fencing around it to keep animals out and to keep people from accidentally going into it, and warning signs as well," he said.

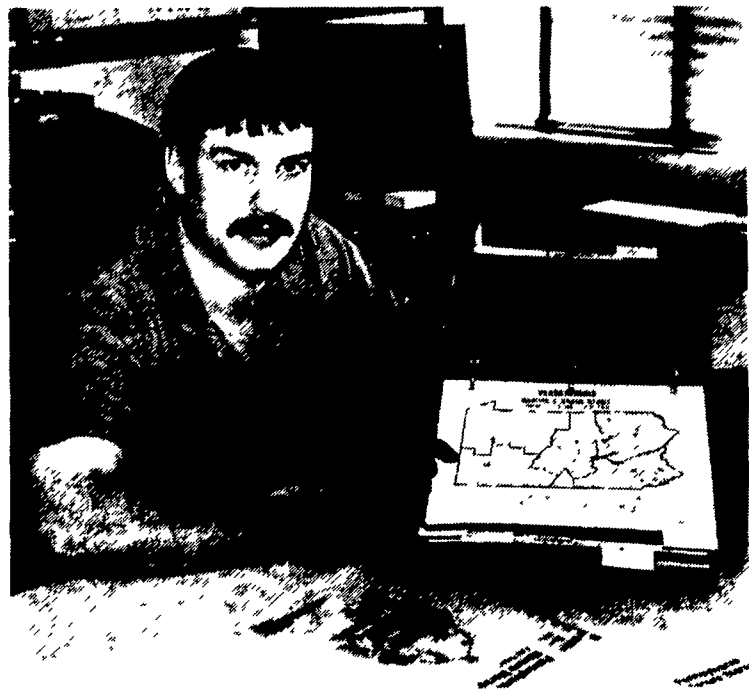
On a farm in north Iowa in 1985, a farmer and two sons were killed when a pump agitator clearing out a manure pit suddenly stopped. One son went down into the pit to try to unclog it — and was overcome by fumes. One by one, each tried to rescue the other, but none wore safety equipment to prevent them from being suffocated by the fumes.

Farmers can be quickly overcome and killed by gases such as highly toxic hydrogen sulfide (which killed members of the Iowa farm family), carbon dioxide, carbon monoxide, ammonia, and other gases.

## Utmost concern

"Safety should be of utmost concern. It needs to be considered more when we're putting manure storages in," said Thompson.

(Turn to Page A38)



Robert Thompson, ag engineer with the Lebanon SCS offices, compiled data on surveys undertaken on 99 Pennsylvania farms and recently published in "Pennsylvania Manure Storage Study." There were serious flaws in safety and management practices on many of the farms, according to the report.

## A Sad List Of Failures

HARRISBURG (Dauphin Co.) — The Pennsylvania Manure Storage Study, released in October this year, revealed some surprising evidence — farmers do not take enough time ensuring that the manure storage structures and their operations are safe.

Some of the findings:

- 49 percent had inadequate or no safety fences to keep children or other people away.
- 51 percent had no safety gate or stop to prevent a tractor from falling over the push-off lip and into the storage. None had a depth staff or marker to indicate depth of fill.
- 36 percent of farms that had reception pits had people in the pits at least once without breathing apparatus.

- 34 percent were routinely filled above design depth.
- 22 percent had overtopped at least once.
- 33 percent with outside lots did not control barnyard runoff.
- 51 percent had never taken a nutrient sample of their manure.

In addition, many of the facilities were located close — within 100 feet — of a water source. Nine of the farms had a facility within 50 feet. "This means that proper maintenance is essential," according to William J. Bowers, state conservation engineer.

Penn State is working on developing signs that warn of the gases or the manure pit itself. But farmers must carefully evaluate safety and maintenance procedures with the facilities.

UNIVERSITY PARK (Centre Co.) — Farmers should take careful steps to ensure their safety when working near manure storage facilities.

Penn State extension safety specialists and SCS engineers working with the Pennsylvania Agricultural Safety Council recommend farmers do the following:

- *Never enter a pit without proper ventilation.* When going in, wear a self-contained breathing apparatus, as well as a safety harness attached to a rope attended by two people at the entrance to the pit. Attaching the safety rope to a winch or hoist is also recommended. *Cartridge-type masks are not safe.*

- *Keep people and animals out of any building where manure is being agitated or emptied.* Provide strong mechanical ventilation during agitation and pumping and for a few hours after pumping has stopped. If an animal collapses during pit agitation, do not try to rescue it immediately. Turn off the pump and ventilate the building until the gases have had a chance to escape.

- *Never fill a manure pit completely, but allow 1 to 2 feet of airspace to accommodate concentrations of gas.* Lower the level of liquid manure in a storage facility before starting agitation to reduce the possibility of gas being forced above floor level.

## Stay Safe, Stay Alive

- *Keep the agitator below the liquid surface, because gas is released in greater volumes with vigorous surface agitation.*

- *Forbid smoking, open flames, or spark-producing operations in the immediate vicinity of the storage area.*

- *Keep all guards and safety shields in place on pumps, pump hoppers, tank wagons, and power units, and maintain electrical motors, fixtures, and wiring in good condition.*

- *Do not leave temporary access ladders leaning against above-ground tanks.* Permanent ladders on the outside of above-ground tanks should terminate above the reach of people or should have locked entry guards.

- *Do not walk, ride, or allow animals on the crust-like surface of open-air storages.* Like ice, the crust is not uniformly solid and can break through suddenly.

- *Warn visitors and guests of the hazards of manure storages.* You are legally responsible for their safety while they are on your property.

Manure storage facility warning signs are available from equipment suppliers or from the Pennsylvania Agricultural Safety Council, 204 Agricultural Engineering Building, University Park, PA 16802.

## Emergency Procedures

Emergencies result from ignoring or not knowing the hazards of

manure storages and the recommended safety practices. Generally, someone enters a pit without a self-contained breathing apparatus and passes out almost immediately from toxic gases or oxygen deficiency. The tragedy is often compounded when would-be rescuers — family, coworkers, or emergency personnel — panic and follow the first victim into the pit.

When someone collapses in a pit, gases are so concentrated that it is suicidal for anyone else to enter without a self-contained breathing apparatus. *The only reasonable immediate action is to ventilate the storage area and notify rescue personnel who can bring the proper equipment.* Barn fans and silo blowers may be activated to provide ventilation, but do not lower fans into the pit because of the possibility of a methane explosion.

In any rescue attempt, the rescuer should have a self-contained breathing apparatus and a safety harness with a lifeline. The lifeline should be attended by at least two people outside the storage unit. Rescuers should never place their own masks on a victim or remove their own lifelines. Ropes, carriers, and oxygen for victims can be lowered into the pit if necessary. Victims should be brought out as quickly as possible, administered 100 percent medical oxygen, and transported to an emergency room.