

Beware of toxic confinement gases in hog houses

NEWARK, Del. — Liquid manure in hog confinement facilities often is stored in underground pits or tanks. This practice reduces labor requirements, but it introduces serious problems for people and livestock from toxic gases generated by manure decomposition.

Manure gases have caused a multitude of hog deaths and a tragic number of human deaths. Since the gases are normally suspended in the liquid manure, the most dangerous situation occurs when the manure is being agitated to mix settled solids with the liquid for pump removal.

Four main gases are produced as manure decomposes, all of which are colorless, explains Ron Jester, Extension safety specialist at the University of Delaware. These gases are ammonia, carbon dioxide, hydrogen sulfide and methane.

Ammonia is released from both fresh and decomposing manure. It has a strong, pungent odor and is irritating to eyes and noses. This odor is most frequently associated with confined livestock operations. Ammonia does not present an immediate human health hazard although, in high concentration, it may set off or aggravate respiratory problems.

Carbon dioxide is an odorless gas that is always present in buildings to some extent. Agitation of stored manure can release large amounts of carbon dioxide. When ventilation equipment is functioning properly this is not likely to be a

direct problem. However, its presence may cause more rapid breathing which can compound the effects of other toxic gases.

Hydrogen sulfide is an extremely toxic gas produced by manure decomposition. This gas is usually responsible for human deaths associated with liquid manure. Like carbon dioxide, hydrogen sulfide is heavier than air and most of the gas will stay suspended in the manure until it is agitated.

Moderate concentrations of hydrogen sulfide cause dizziness, headaches and nausea. High concentrations, which may occur during manure agitation, can cause immediate unconsciousness and death through respiratory paralysis. Even though hydrogen sulfide has a rotten egg odor, this does not give adequate warning since high concentrations can deaden the sense of smell.

Methane is not a toxic gas but in high concentrations it can have an asphyxiating effect similar to carbon dioxide. Another hazardous property of methane is its explosiveness. While a few isolated explosions in hog buildings have been attributed to methane, it would be unusual for the methane concentration in manure pits to reach an explosive level, says Jester. Methane is an odorless gas.

The chance of tragedy occurring can be reduced greatly by proper design and operation of the ventilation system. A system designed to adequately remove odor and moisture from the building also will keep gas levels within the

acceptable range during normal operation.

He suggests installation of a good pit ventilation system that remains in operation during agitation and pump-out. "This is when pit ventilation is needed most," he says.

When agitating in a pit underneath a building, the specialist advises removing animals if possible. Since this usually is not

possible, the next best alternative is to turn all ventilation fans to maximum capacity and adjust inlet baffles to assure that fresh air reaches the pigs.

If it's necessary to enter a manure pit, Jester says to go in only using a self-contained breathing apparatus and an attached rope and harness with two people standing by.

"The cost of safety equipment is small in relation to the cost of the confinement building. It's significant in relation to the value of a human life," Jester says. Neighbors can buy the equipment together and share it, he adds.

Moore family

(Continued from Page D3)

Get of Sire
1 Moore, 2 Miller, 3 Burger, 4 Harpster, 5 Runkle

Pair Yearling Ewes
1 Miller, 2 Burger, 3 Laudenslager, 4 Moore, 5 Runkle

RAMBOUILLET
Yearling Ram
1 & 2 Moore, 2 Emil Mellott, 4 George Mellott
Ram Lamb
1 & 3 Moore, 2 & 4 Miller, 5 Mellott

Champ Ram-Moore
Pair of Ram Lambs
1 Moore, 2 Miller, 3 E. Mellott, 4 G Mellott

Yearling Ewes
1 & 2 Moore, 3 Miller, 4 E Mellott, 5 G Mellott

Ewe Lambs
1 & 2 Moore, 3 & 4 Miller, 5 E Mellott

Champion Ewe-Moore
Pair Ewe Lambs
1 Moore, 2 Miller, 3 E. Mellott, 4 G Mellott

Pen of Lambs
1 Moore, 2 Miller, 3 E. Mellott, 4 G Mellott

Breeders Young Flock
1 Moore, 2 E Mellott, 3 Miller, 4 G Mellott

Flock
1 Moore, 2 Miller, 3 E. Mellott, 4 G Mellott

Get of Sire
1 Moore, 2 E Mellott, 3 Miller, 4 G Mellott

Pair Yearling Ewe
1 Moore, 2 E Mellott, 3 Miller, 4 G Mellott

Fact sheet explains no-till

NEWARK, Del. — Gratiated with their successful results with no-till corn production, many local growers are now anxious to try no-till wheat and barley.

They'll need a special grain drill, says Delaware Extension agronomist Frank Webb, but these growers feel that the long-term energy savings will offset the cost of the machinery.

For the last two years, Webb has been working with no-till wheat and barley at the University of Delaware's Georgetown Substation. While this is not long enough to draw final conclusions about yield potentials, disease

occurrence, or insect problems, preliminary results for both grains look promising. Both years the no-tillage wheat and barley yields have been about the same as conventional grain yields.

Webb has prepared a fact sheet that explains the procedures that must be followed for no-till wheat and barley production. He discusses yield results; how to choose a drill; fertility and top dressing; liming; seeding date and variety selection; and weed control.

The fact sheet is available free of charge from all Extension offices in Delaware.

Gain more profit on pork by feeding out your hogs on CFS Waxy hybrids... the proven way of increasing weight and rate of gain without increasing feed costs.

CFS Waxy hybrids will help your hogs gain up to 10 percent more weight, and gain it faster, on the same amount of feed. And you won't pay a "yield penalty" when you raise CFS Waxy for feed, because our waxy hybrids will equal or surpass the yields of comparable dent varieties. Call your CFS dealer today for full information.

Your CFS dealer is:

George B. Steele
Rd 1 Box 127
Manheim, PA 17545
717-665-6931



Custom Farm Seed
Mornence Illinois

Leadership Through Research Experience



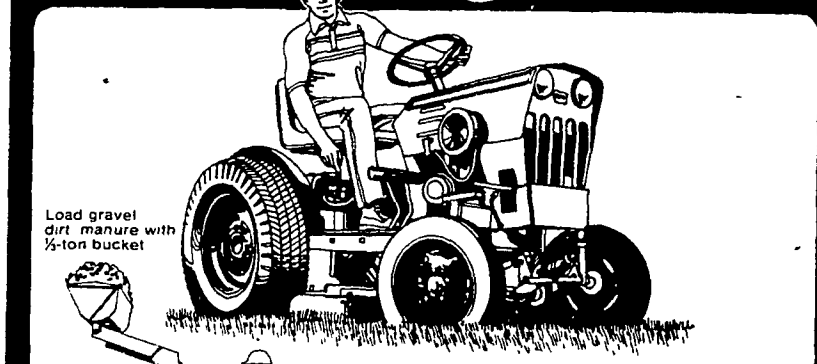
More Pork—Faster Gain

Feed CFS Waxy



POWER KING

one tough tractor!



Load gravel dirt manure with 1/2-ton bucket



Prepare perfect seed beds with 32" rotary tiller

Puts power in your hands like no other compact tractor you've ever seen. Power to do big jobs... more kinds of jobs. You can mow up to 3 acres an hour. Plow 8" deep. Front load with 1/2-ton bucket loads. Till, cultivate, bulldoze, blow snow, split wood... get your tough jobs done fast and easy!

Power King's energy efficient, too. Rugged automotive type, all-gear drive delivers nearly 100% of cast iron engine's power to big, ground-gripping drive wheels... squeezes more work out of every drop of fuel! Ground clearance up to 19" lets you cultivate tall crops, work in rough ground.

Get tough, American made Power King in 14, 16 and 18 hp models, with over 20 man-sized attachments. Come in and see Power King today!

OFFER EXTENDED TO NOV. 14, 1981

15% OFF OUR REGULAR PRICE

MODEL 2414 14 H.P. Sale **\$2,931.00**
Hyd. lift, 3 pt. hitch, lug tires
Reg. \$3,449.00

MODEL 1614 14 H.P. Sale **\$2,489.00**
3 pt. hitch, lug tires
Reg. \$2,929.00

MODEL 1616 16 H.P. Sale **\$2,923.00**
Hyd. lift, 3 pt. hitch, lug tires
Reg. \$3,439.00

MODEL 2418 18 H.P. Sale **\$3,100.00**
Hyd. lift, 3 pt. hitch, lug tires
Reg. \$3,649.00

Good's Lawn & Garden Center
Rt. 322 - 1 mile East of Blue Ball
phone 717-354-0076
Open daily 9 to 9, Tues. & Sat. 9-5

