

Swine Odor Control A Tough Hog To Handle

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study the results of odor containment.

Results for the use of straw was promising. Straw at depths of six to 10 inches as a layer on top of the lagoons worked well.

Almost any kind of straw will do. Corn stalks were useful but their weight was a detriment. At least 300 earthen-basin manure lagoons in Iowa are under straw cover, according to Bundy.

Total cost of odor control, using 40-pound wheat straw bales at a cost of \$2.50 per bale, with an average storage depth of 10 feet, was 30 cents per pig marketed for a 4-inch cover, 46 cents for 6-inch cover, 61 cents for an 8-inch cover, and 76 cents for a 10-inch straw cover.

Research looked into the use of "leka rock," a clay-type material, in earthen basin. The manure had to be pumped out with the cover to about eight inches of the surface. Another system looked at the use

of aspirators to inject air into the manure, creating surface bubbles which would harden, forming a crust cover over the manure.

With straw, there was little or no fly development. With the case of the crust, however, fly control became a problem. Bundy noted that you trade one problem for another using some of these methods.

On the round steel slurry tank on the Iowa State farm, a 40-60 mil plastic cover was placed on the tank. Odors were reduced 80-90 percent at a cost of \$2-\$3 per square foot.

As for application, a system of injecting the manure below ground is "excellent for reducing odors," noted Bundy. One system makes use of a large tanker with a battery of dragging hoses which spreads manure on the grassland, reducing the trajectory of the odors.

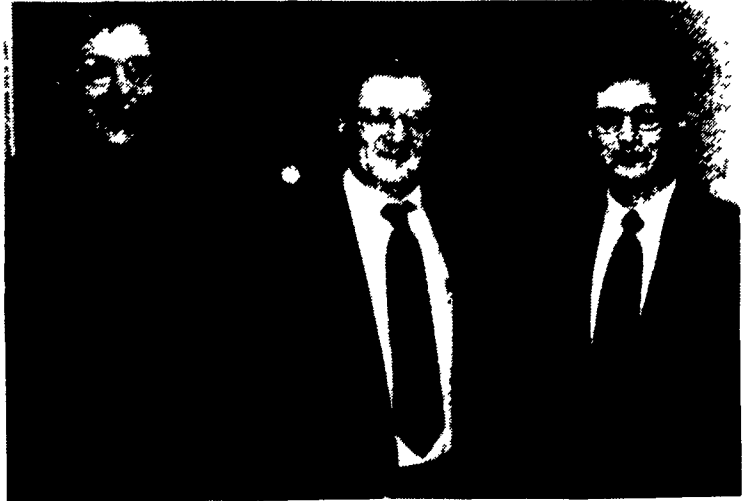
Untreated manure spread on the surface of fields has an odor

threshold of 2,818 — high and noticeable. Buried with plow, the threshold quickly drops to 200; with harrow, to 131; and with injection, to 32.

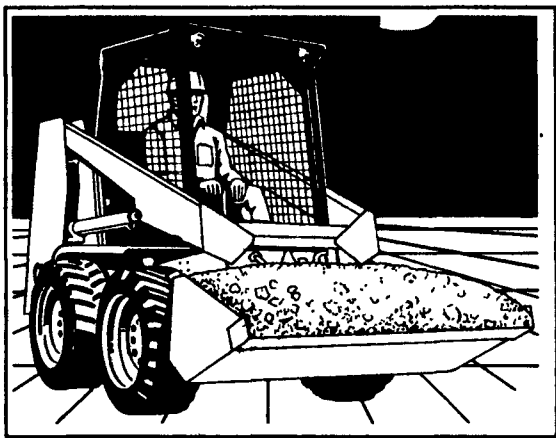
In the end, good management will help curtail litigation. It's important not to spread when summer activities will in bloom and to quickly incorporate the manure to reduce odors.

The best time to spread manure is on a bright, sunny, day, with low wind. That is the most "unstable" atmosphere, Bundy said, which is good to help reduce odor complaints. The worst time to spread would be during stable weather conditions — on a cloudy, cool, somewhat windy day.

Iowa State learned a lot about odor control and wind direction in the years since a neighbor sued them in 1990. But in most nuisance complaints, it is more likely that complaints will be clusters.



At the Pork Forum, a meeting sponsored by Lancaster Pork Producers and the industry, Dr. Dwaine S. Bundy, center, reviewed wide-ranging research that his department has accomplished in the field of swine odor control. At left, Dan McFarland, extension ag engineer from Penn State and ventilation specialist, noted it is important to match the correct type of ventilation system for the season. At right is Chet Hughes, extension livestock specialist, who provided a review of Pork Quality Assurance Level III certification.



2nd Annual Keystone Farm Show CHAMPIONSHIP SKID STEER RODEO

York Fairgrounds, York PA

Tuesday, January 5th

Registration begins at 12 noon at the show

RODEO Begins at 1 pm ends at 3 pm

You'll Be Operating These
Skid Steers...

Case Model #1845C
Provided by Messick Farm Equipment

New Holland Model#LX565
provided by Messick Farm Equipment

John Deere
provided by Deere Creek Equipment

Mustang
provided Penn Fork Truck

Gehl Model#3825
provided by Gehl

Bobcat Model#763
provided by Finch Hanover

JCB Model#185
provided by Ag Industrial Inc.

For A Chance to WIN
These Prizes...

\$1,000 Worth of Seed Corn
provided by MYCOGEN

\$750 worth of Seed Corn
provided by GOLDEN HARVEST/AGRICULVER

\$650 Value 2 day rental-
Mustang Skid Steer
Provided by PENN FORKLIFT

\$500 worth of Seed Corn
provided by CHEMGRO

\$100 Value Custom Embroidered Jacket
provided by RUBY'S SEWING ETC.CUSTOM
EMBROIDERY

\$50 Toward Rental or Purchase of a
Pressure Cleaning System
Provided by PROGRESSIVE PRESSURE SYSTEMS

\$50 Worth of Baler twine
Provided by VERMEER

Also PARTICIPATION PRIZES TO THE FIRST 50
REGISTERED CONTESTANTS PROVIDED BY:

TeeJet, AgriCulver Golden Harvest, Chemgro,
Mahoning outdoor Furnaces, Vermeer, GSI &
Country Folks of PA

The Skid Steer Rodeo is a timed obstacle course type event. Each contestant will have to operate all participating skid steers on their assigned course. The quickest overall time for all events will be declared the winner. Penalties are given for hitting props, non-completion of an event etc. Unsafe operation in any event will cause immediate disqualification. Registration is just prior to the event at the show. There is no charge to enter. All operators MUST BE at least 18 YEARS OF AGE. Be prepared to prove it.

For More Information on the Keystone Farm show or the Skid Steer Rodeo Call Ken Maring

1-800-218-5586

Bundy learned it's important to be able to measure odors.

"If we can't measure something, we're just chasing our tails," he said. Without a system of measurement and recording, "we have nothing to stand on in legislative issues."

Several pit additives were also studied at Iowa State. One of the purposes of the program, Bundy noted, was to help companies develop a better product. Some challenges, however, included the fact that the product formulation can change often, sometimes within 4-5 months; companies go in and out of business, perhaps too often; and there is concern that the product the university tested may not be the same one that ends up in the hands of consumers.

The product should be available to producers in sealed containers, Bundy noted, much like pesticides.

Three different types of additives were tested, including chemical additives (coal- or copper-sulfate based), used to kill microbial activity and prevent odors; microbial, to get the natural process of breakdown under way to reduce odors; using enzymes to increase the effectiveness of microbes; and alkaline by-products, which include kiln dust and fly ash, to reduce odors.

The university employed a variety of methods, including bench, column, and some field testing and applications. Many field tests of the products show promise.

One thing the researchers quickly noted is that manures can be reduced from simply controlling the feed water and minimizing waste. However, this posed a challenge in agitating and pumping the manure because of

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