

Sewage sludge is recyclable resource

BY SHEILA MILLER

LANCASTER — A growing number of farmers throughout Pennsylvania and neighboring states are cashing in on a good idea — working with municipalities in a symbiotic sludge disposal program.

Applying sewage sludge to farmland is not a new idea, though. In fact, it's been a common practice since the 1950's.

But recently, with the cost of chemical fertilizers skyrocketing and the push by environmentalists for recycling wastes, farmers and municipalities have learned they can benefit one another. Farmers have found sludge is a beneficial supplement to their fertilizer program. And, municipalities have found a way to dispose of waste they would otherwise have to burn or bury.

One such reciprocal program is being carried out by the City of Lancaster's Bureau of Sewers. Liquid sludge from the city's North Wastewater Treatment Plant and dry sludge from the South Plant are spread on local farms.

According to LaRue Van Zile, supervisor of sewage operations, liquid sludge has been disposed of on Lancaster County farmland since the 1950's. The dry sludge, he said, is relatively new — and has only been applied this past summer.

Van Zile explained that liquid sludge consists of 96½ percent water and 3½ percent solids. The dry sludge, on the other hand, is 35 to 40 percent solids. In one year's time, he said, the City of Lancaster's treatment plants generate 3000 wet tons of sludge each year.

At the City's North Plant, the liquid sludge is processed in anaerobic digestors. The sludge is transported from the plant to the farms in the two 5000-gallon tractor-trailer tank trucks. From the tankers, the sludge is transferred into a Big Wheel sludge applicator, a 1500

gallon tank truck with high flotation tires. The sludge is then either sprayed on the surface of cropland or injected.

Van Zile commented the sludge from the North Plant is a "good quality sludge" with a fertilizer analysis of about 128 pounds of nitrogen, 280 pounds of phosphorus, and 25 pounds of potassium after the maximum annual amount is applied to an acre of cropland. He noted the maximum lifetime rate is 3.45 dry tons per acre with the limiting factor being the amount of nitrogen.

The limiting factor on application rates for sludge from the South Plant is the heavy metals, especially cadmium and zinc. Van Zile expressed hopes that by 1983, the City's industry would be in compliance with the Environmental Protection Agency's ruling to clean the metals from their waste by pretreating. He noted the primary source for the heavy metals was the metal platers at printing plants.

Although 15 percent of the sludge at the South Plant is handled as a liquid, most of it is filter cake sludge. This sludge has been processed by the Zimpro heat treat-



William Horst, chief operator of the Lancaster South Wastewater Treatment Plant, discusses the farmland sludge application program with LaRue Van Zile, supervisor of sewage operations for the City of Lancaster.

ment method which destroys bacteria and viruses, and changes cell structure, noted Van Zile. A vacuum stabilizes the organic matter (Turn to Page A26)



Franklin Myers, who raises beef cattle and cash crops, looks over his short season barley with Horst where sludge was applied prior to planting in July.

Lancaster farmers

(Continued from Page A23)

the layer would not disintegrate with disking.

Myers said he is happier with the sludge now that he is chusing his fields rather than no-tilling. However, he said there are still problems of getting the sludge on at the right time.

"I've applied sludge in the early spring, but that's not too good a time since scheduling is tight. Any delays in preparing the fields means a delay in planting. "Summer and fall seem to be the best times to go with sludge."

Waiting until later in the season also cuts down on the chances of soil compaction since the ground isn't as wet, added Myers.

One of his main concerns about sludge application, Myers said, is the heavy metal content, but he quickly added the state regulatory agencies monitor the sludge quite closely.

Myers said he applies the sludge on fields the fur-

thest distance from his barn, and only on those fields scheduled for corn or small grains. Myers recalled one year he burned a hay field of Reed canarygrass by applying sludge, and said he wouldn't recommend applying it to hayland.

This year he spread the sludge on 10 acres of barley stubble in July and planted barley on September 15 without applying any other fertilizer. The sludge was chused in the day after it was spread, said Myers, pointing to the healthy, green color of the young barley plants.

Next spring, Myers said he will apply 30 pounds of nitrogen and will harvest his short season barley and double crop a 90-day corn for ensilage.

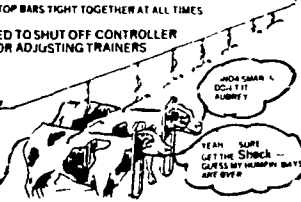
When using sludge in an operation, Myers cautioned farmers to use common sense and leave a buffer zone around populated areas to avoid complaints.

In my opinion, I don't

think the smell of sludge is more psychologically as bad as liquid poultry manure. But, people get it's sludge. -SM

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