

# Manure management

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manure and soil, Dave Swartz showed a manure test kit which is available through Extension. The \$22 test analyzes nitrogen, the most valuable nutrient in the manure, phosphate and potash. Of course, soil tests must follow as well.

At the third farm, owned by Ivan Zook, the group looked at how a picket dam drains excess water from his earthbank storage with a concrete bottom. The liquid flows by gravity through 900 feet of drainage tile to a meadow diversion terrace.

While Ivan currently uses a front-end loader to push the manure from the stall barn and heifer housing into the pit, discussion centered around the ease with which he could install a gravity system from the stall barn to the pit.

Dan Meyer explained that by using a 36-inch pipe, with nearly an eight foot drop from the stall barn to the pit, 4,000 pounds of pressure would be created to push the manure out into the pit. The only additional change that Meyer recommended was a change from long to chopped straw, to diminish any chance that the system would plug up.

The Zook manure storage system handles the waste from both the stall barn and the heifer housing, a feature that Dan Meyer pointed out to the dairymen as worth consideration. The dairyman should always look ahead toward future changes, too, so that potential for expansion can be designed into the system.

Before moving on to the next farm, discussion returned to the

financial pluses of manure management systems. Despite the estimated savings on fertilizer costs of \$50 per cow, many farmers still can't see laying out the initial investment for installing the system.

To answer this concern, Henry Bohn, of the federal Agricultural Conservation Program, explained the funding opportunities available to farmers who want to install a manure management system. In Berks County, ACP will fund 75 percent of the cost of the animal waste facility up to \$2,500, and in some counties the upper limit is \$3,500.

In addition, through the Chesapeake clean-up effort an additional \$2 million will be available to aid farmers who are willing to adopt better waste management practices.

As discussion turned to the problems in the Chesapeake Bay watershed, Berks Extension agent Clyde Myers reminded the dairymen to take the lead. "If we don't watch ourselves, the federal government may end up regulating how much manure we can put on our fields," he cautioned.

Dan Meyer also commented on governmental crackdown on the pollution problems. The high nitrate levels in Lancaster County groundwater, for instance, may lead to DER mandatory guidelines for applying nitrogen.

The fourth manure system viewed on the tour was a 360,000-gallon, 16x62 Butler Liqui-Stor on the farm of Marvin and Gary Stoltzfus, Elverson. This offers six months of storage for 100 cows. Manure from the free stall barn is

scraped into a reception pit and pumped into the storage, and parlor wastes are also diverted into it.

While this system required the greatest investment, including the cost of equipment, it also has some advantages for some dairy operations.

In this particular case, remarked Berks County SCS technician Roy Shryock, the high water table of the land surrounding the barns would have meant trouble with drainage.

Dan Meyer noted that he figures about a 70 cow minimum for considering a liquid manure system that may require a \$50,000 to \$80,000 investment. He also pointed out that a liquid system is well-suited for free stall operations, and it does offer advantages for incorporating the manure into the soil.

In Marvin and Gary's operation all the manure is injected into the ground. In any manure system, incorporating the manure into the soil as soon as possible is crucial to prevent nitrogen losses. Twenty-five percent of the nitrogen is lost each day it sits on top of the soil.

At the fifth and final farm on the tour, the Extension and SCS personnel gave the group an opportunity to see the planning and design that goes into creating a manure storage system. At the Harvey Z. Stoltzfus farm the SCS personnel have designed a system that has yet to be built.

Currently Harvey hauls manure every day, and last winter he stored it on a pile because he couldn't get into the fields. Everything from designing around a township road that splits his property, to diverting surface water runoff, to incorporating waste from a nearby heifer



An advantage of a liquid manure system is that the waste can be injected directly into the soil with minimum nutrient loss.

facility, had to be taken into consideration in the plans.

What SCS has come up with for Harvey is a gravity flow system from the stall barn to an earthen bank pit with concrete bottom, which will be situated across the road near the heifer housing. SCS engineer Marina Juhl outlined the detailed specifications written up by SCS.

And what everyone should realize, pointed out Clyde Myers, is that all of the SCS services provided to Harvey up to that point are free. And once the design is done, the farmer is under no obligation to build the system. Very often they design systems and nothing ever comes of it, added Marina.

Also the SCS planners strictly follow DER guidelines. For this

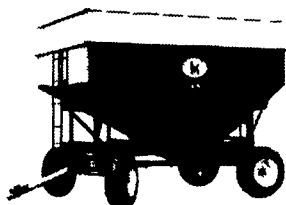
reason, and because of the cost sharing benefits, remarked Clyde Myers, using SCS is a real plus. "Should DER ever come to you about pollution problems, you'd have a leg to stand on in court if you've followed their guidelines," he noted.

In concluding the day's program, Marina Juhl reminded everyone that SCS is not trying to force their ideas on anybody. "We want to work with the farmer and do what's in his best interest."

As a dairyman, maybe you need to think about your best interests, too, and take a look at your manure management system. Planning and building a system tailored to your individual needs may be a healthy addition to the efficiency of your dairy operation.

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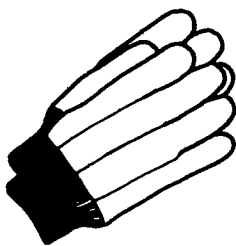
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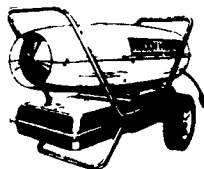
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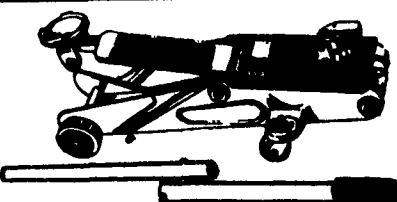
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