

# Manure management increases dairy efficiency

BY WENDY WEHR

**HONEYBROOK** — What is a dairyman's chief concern? Milk production, of course. Care and management of the cows, from feeding to milking, consumes countless amounts of the dairy farmer's time, energy, and resources. And why not? In an efficient operation, more milk means more money, and making ends meet in these tough economic times has to be the dairyman's first concern.

But, face it, easing the financial crunch depends more on efficiency than on simply "more milk." And to put together a more efficient operation, every dairyman should take a close look at another time, energy, and resource consuming part of his operation — manure management.

To run an efficient operation, can you afford to let the nutrients you feed your cows — a majority of which end up in the manure — evaporate into thin air while you buy commercial fertilizers every year to provide nutrients for your crops? Can you afford the time and energy, the headaches and hassle that are part of hauling manure everyday?

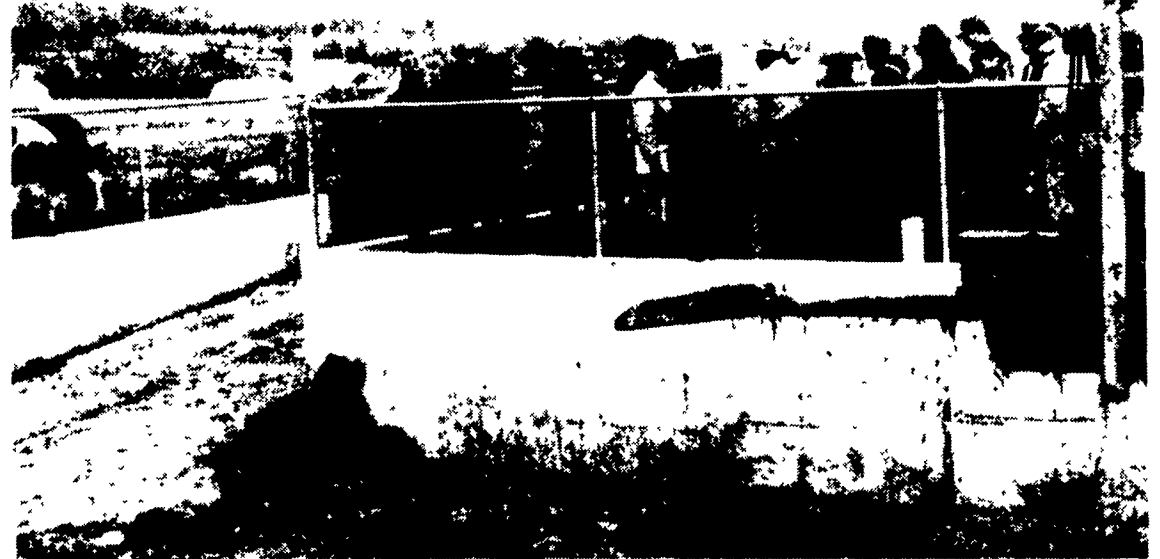
The Extension agents and Soil Conservation Service personnel of Berks and Chester counties think

you can't afford it, and that's why they set up the 6th Annual Agriculture Waste Management Tour, held Wednesday at farms in the two counties.

In selecting the farm operations, Chester County agent Dave Swartz noted that they wanted to give farmers an opportunity to see the many options that are possible for a manure management system. They chose farms that represented very affordable, relatively simple manure pits, as well as more expensive, complex manure handling systems.

On hand throughout the day were Dan Meyer, Extension ag engineer from Penn State, and Marina Juhl, civil engineer from the area SCS office, as well as Extension agents and SCS personnel from both Berks and Chester Counties. The farmers attending the tour had access to a wealth of information about engineering considerations, costs, fertilizer values, and equipment.

The tour began outside of Honeybrook, Chester County, at the farm of Levi Stoltzfus. The group looked at his earthbank storage located at the end of his barn. The gutter cleaner drops manure directly into the pit, which has a six-month capacity. Levi pumps off the liquids before



Participants in the 6th Annual Agriculture Waste Management tour talk about the available options in manure management systems. Here at the Jonas B. Stoltzfus farm is a six-month poured-concrete storage for 50 cows.

hauling the solids. A concrete ramp is used for equipment.

Discussion there focused on the need for a concrete base, suggested slopes for the inside and outside banks and the ramp, required safety measures, and pertinent township ordinances. For earthen banks, a 1:2 inside slope is suggested, and a 1:3 slope on the outside banks allows for easier maintenance. No greater than an 8:1 slope is recommended for the ramp of semi-solid manure storage basins.

While Penn State ag engineer Dan Meyer noted that dumping manure on top and breaking the crust results in some nitrogen loss, he also commented that Levi's system was very affordable. A few years ago, the manure storage system installation cost about \$3,000.

The second and third farms on the tour had drainage systems incorporated into the manure pits. At all three of these farms Harry Barnett of SCS assisted in designing appropriate systems, taking into account each farmer's needs.

The second stop on the tour was the Jonas Stoltzfus farm. Jonas, who runs a 50-cow dairy operation, installed a \$10,000 poured concrete storage facility in 1983. His design included a 2x2 grate leading to a six-inch PVC pipe to drain the liquid off the bottom. He also noted that he empties the pit in the spring and the fall by pumping out the liquid and handling the rest with solid manure equipment.



Chester Extension agent Dave Swartz explains the manure test kit to dairyman Warren Suplee.

Jonas remarked that it's "definitely cheaper to store the manure." After spreading the manure he chisel plows as soon as possible, to prevent nitrogen loss.

"I don't put any fertilizer on my corn," he commented, and that represents a substantial savings. Although he tests the soil to be sure

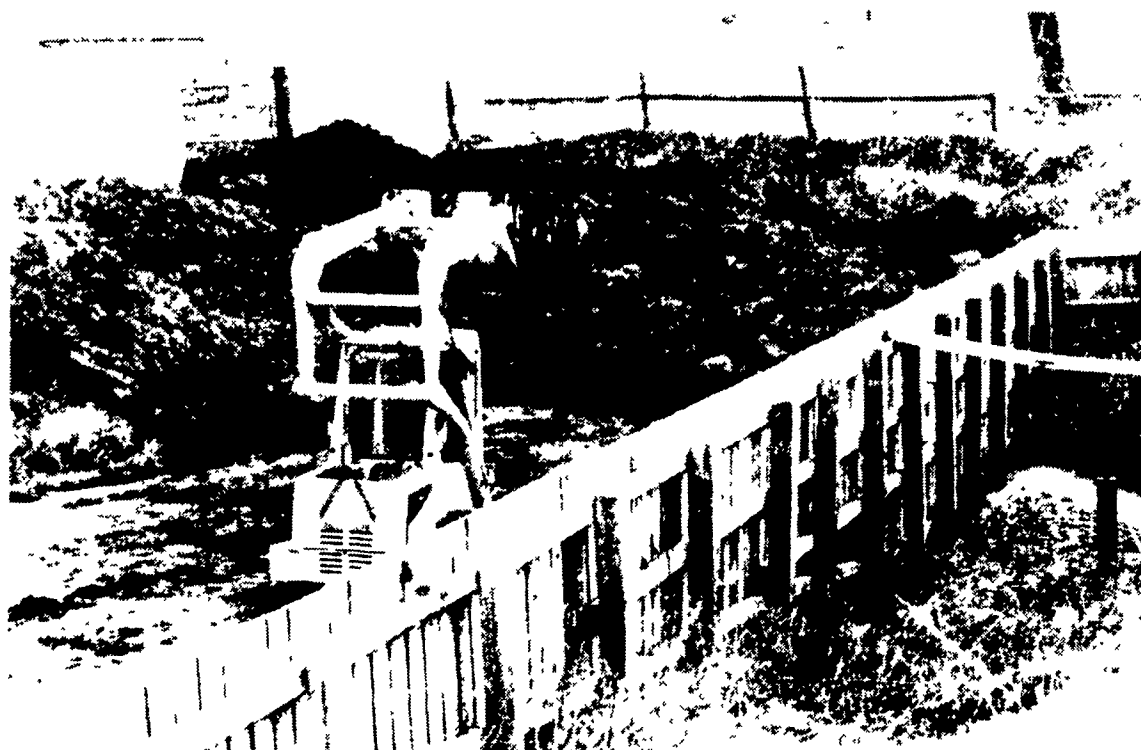
no additional fertilizer is needed, his yields also indicate that the manure is adequate.

To emphasize the potential savings on commercial fertilizer costs, which could amount to \$50 per cow, and to reinforce the need for adequate testing of both

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At the last stop at the Berks-Chester Agriculture Waste Management Tour, SCS engineer Marina Juhl explained the SCS manure management design for the Harvey Z. Stoltzfus farm.



A picket dam along one side of Ivan Zook's earthbank storage allows additional water to drain from the system.



Ivan Zook, right, learned about installing a gravity flow system from his stall barn to manure storage from Penn State ag engineer Dan Meyer.