

Nutrient bonus by keeping the juices

by

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Run-off from manure is not only a potential source of pollution but is also a waste of nutrients. A bus load of farmers from Quebec's Chateauguay Valley examined that proposition up close during an early November tour of different manure structures.

Sponsored by the Huntingdon Agricultural Society and the local branch of the Quebec Ministry of Agriculture (MAPAQ), the tour ventured into northern Vermont to compare developments and programs, before returning to visit two farms in southern Quebec which had recently constructed manure handling facilities.

The Vermont manure handling program is part of an overall project to improve the water quality for the Missisquoi water basin. There are 535 farms within the basin, and 200 have so far voluntarily signed up for the program.

Decent slope

The most apparent point from the tour is the advantage gained from having a barn on the side of a hill, which is not hard to find in Vermont. Gravity does all the hard work while capital and maintenance expenses are reduced considerably without the need for heavy duty pumping equipment. Having a good slope around the yard is also key to easy collection of run-off from barn roofs and manure from exercise yards.

Regardless of the drop from barn to pit, the State of Vermont has a well financed program intended to keep its waterways clear of livestock manure. The program is based on the premise that land owners must pay for conservation and environmental measures; the public, however, also benefits and should therefore make a contribution.

The government pays 75% of construction costs for manure handling facilities, up to a maximum of \$35,000 per individual or \$70,000 for a partnership (which means a husband and wife in partnership can receive

the higher amount). The State contribution is based on average costs for 40 selected farms from the year before.

Quebec has a similar program available, although funds always run dry before all farmers can be accommodated in one season. The attitude towards such programs is also different; the landowner is responsible and the government makes a contribution only because other sectors (i.e. municipalities) are receiving financial assistance with environmental projects.

The Quebec program pays up to 70% of costs, usually less after adjustments are taken into account (i.e farm labour). The provincial contribution is a maximum of \$30,000 per building and \$100,000 per farm.

Conditions

The Vermont pits must have capacity for 365 days (including rainfall if not covered) and all run-off from around barns and milkhouse waste must also be included in the calculation. "We've had no complaints of pits too big, but with wet weather they can be too small," says James Monahan of the soil conservation service of USDA , one of eight conservation and agricultural agencies combining to run the program.

There are no regulatory agencies involved and there is no watchdog to enforce rules. The program is relying on the cost reductions realized by farmers through better management for compliance. This is in stark contrast to Quebec, where farmers complain about the undue conditions often imposed by inspectors from the Quebec Ministry of the Environment. Cross-jurisdiction between ministries often means that compliance is enforced first and education and incentive for better management comes later (if at all).

Value-added

An interesting adjunct to the construction element of the Vermont program is an advisory service for manure evaluation. A technician tests the manure before spreading and then calculates rates by computer based on the nutrient analysis.

The service costs the farmer \$2.00 per acre for corn and alfalfa and \$1.00 per acre for grass and clover. The balance is picked up by federal government funding on a trial basis to see how the program works. So far, 90% of farmers who used it in the first year have

returned. "We need to cut costs and this is a way to find out how," says Monahan.

Separation

The trend of the 1980s was to make manure handling all liquid. While handling is easier, difficulties with bedding made barn life miserable with some systems; the loss of nutrients from field run-off and compaction from heavy equipment have also become problems.

A dual pit system now seems to be the route to go, with a secondary pit for siphoning-off extra moisture from the solid portion. This is where the hill becomes especially handy.

The solid manure becomes easier to handle and the liquid can be used for supplementary fertilization. Tom Bates, a Vermont dairy farmer recently installed two earthen pits at a cost of only \$40,000. The sand floor self-seals quickly to prevent seepage.

The first pit takes the manure and yard run-off from the 110 cows, with the solid portion being spread twice yearly. The liquid goes to the second pit and is used to fertilize the pastures throughout the summer, reducing the one-time dose. "I use an old fuel tank adapted for the purpose to put on 300,000 gallons. I spent not one penny on fertilizer for pastures," Bates says.

Pierre Phillion, an agronomist at the Huntingdon, Que. MAPAQ office, concurred with those comments. He noted that the old standards gave little value to manure. To-day, however, phosphorus and potassium are given 100% of their value, and nitrogen 50%. "We have trial farms where they are using manure and just 100lbs per acre of fertilizer at planting and they are growing great crops," he says.

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