

Ecological manure: a sound investment in fertility management

by Roger Henry

Harry Elsinga of Brookwater Farm, is a dairy farmer in central Prince Edward Island. He produces all his forage and some of the cereal requirement for his herd of 50 registered Holsteins. In the latter 1980s, he became interested in a more ecological farm management system for his cows, both for production of feed and herd health in the barn.

One of the first steps in the transition to ecological farming is to develop a proper manure management system. In 1988, Elsinga decided to install a liquid compost system to contain the manure runoff from the manure storage area.

Prior to 1980, the manure handling system at Brookwater Farm consisted of a hydraulic ram which pumped the manure from the dairy barn into a collection yard (a cement pad with a clay berm around it). The manure had a semi-solid consistency and was relatively difficult to handle. During the spring and fall seasons, a considerable amount of liquid was lost to run-off. In 1988 Elsinga installed a belowground, aerated cement tank in the lowest side of the cement pad, into which the liquid manure now drains directly. It is collected and then aerated each spring to produce a liquid compost. The draining of the liquid leaves a solid manure on the pad, which also composts on its own. Consequently, Elsinga has solid and liquid compost to apply to his land instead of the raw slurry he had before.

The liquid manure is converted to liquid compost by aeration, fine bubbles of air being pumped into the liquid during the warm months of the year. During this period of approximately 2 months, air is pumped in for several minutes each half hour, around the clock. This produces a liquid compost which has very little odour, with nutrients in a more stable form, thus preventing losses to the atmosphere. This product is then ready for field application after the hay crop is removed.

Elsinga applied the liquid compost after the second cut of alfalfa at a rate of 2,000 gallons/acre. Because the system retains the liquid manure, 180,000 gallons of liquid compost were available to spread on the alfalfa. In addition, the solid manure had essentially composted on its own without turning with a front-end loader and a manure spreader. This will be the third crop year using only compost as the fertility source, as the need for purchased fertilizer has been eliminated .

The fertility and solid manure equipment (less material handled more easily) savings have paid for the cement tank and aerator in 3 years. To date Elsinga has been very pleased with the yield results for alfalfa, barley, and oats. He has managed to maintain yields on all his crops at levels equal to those attained prior to his switch to ecological methods. He continues to experiment with alternatives in the area of animal health and feed additives, in the process maintaining herd performance.

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