

Milkhouse waste water management

An Innovator Report on Ron Forbes, Ingersoll, Ont.

by Jeff Quinn

The current President of the Oxford Soil and Crop Improvement Association is another example of the innovative spirit possessed by farmers that result in common sense solutions to chronic problems. Ron Forbes farms near Thamesford, Ontario and milks 40 Holsteins. He is one of 30 farmers cooperating with Mitch Anderson, a University of Guelph graduate student, in a study on ways to reduce milkhouse waste water and thereby lessen the clogging-up of septic systems and reduce the excessive phosphorus loadings into tilelines and waterways.

"One day I took some time along with Mitch to just stand and watch the pipeline cleaning system go through its cycle and we noticed there was a considerable volume of water still in the sink by the time the rinse water had made its first return" Forbes says.

Their assessment was to reduce the volume of water (and hence the amount of detergents and cleansers). By dropping the water level to just what's needed to keep the inflations covered but not sucking air before the first wash water returns, there would still be sufficient volume to clean the pipeline.

From this initial premise, Forbes then designed an insert to fit into the standard-sized sink to further reduce the effective volume of the sink by bringing in the sides while maintaining a deep central channel into which the milking units fit.

This narrow central channel keeps the units from sucking air with substantially less water in the sink. Simply by lengthening the little hose connected to the pressure switch, the shut-off mechanism is activated sooner and prevents overfilling.

Mitch Anderson discovered most of the pipeline cleaning systems in the study were not properly adjusted, with one of them contributing close to 1,000 litres per day of milkhouse waste water!

"This simple adjustment could go a long way towards solving the pollution problem from milkhouse waste water if everybody was to do their little bit to reduce their excess contribution" concludes Forbes.

On Forbes system, with 4 milking units, there was a savings of 20 litres per washing, or about 33%. In addition, there is an air injector in the system which already significantly

reduces the water volume. A prerinse of about 4 litres of warm water can eliminate a high percentage of the milk film still in the lines and this can be fed to calves. After the prerinse, Forbes directs the next rinse into a trench leading to his liquid manure tank. This prevents almost all of the milk solids from entering into the septic system and avoids plugging the septic beds with milk fat. A failing septic system can be brought back to life just by reducing the daily injection of milk solids into it.

Forbes cautions, however, that "everything is still in the investigative stage", with the biggest concern of milk quality yet to be dismissed. With greatly reduced water volume, it has not been possible to maintain the final temperature in the wash water above 120° F from the initial temperature of 160° F. This raises the possibility of unsatisfactory control of bacteria.

For this reason, Forbes has had extra milk sampling done to closely monitor Plate Loop Counts. The Dairy Inspection branch of the Ontario Ministry of Agriculture and Food is more concerned about the temperature maintenance problem and not so much about the units sucking a little air when less water is used.

In summary, while there is some concern that drastically reducing water volume may reduce the thoroughness of pipeline cleansing, the savings in detergents and hydro costs alone merits consideration from an economic standpoint. Simply adjusting the filler hose to prevent excessive water use and prerinsing the line to get rid of most of the remaining milk solids will probably do the most towards reducing pollution problems from milkhouse wash water.

Moo often we don't take the time to think about things" was Forbes closing comment and it is a challenge to all of us to consider our ways!

Copyright © 1991 *REAP Canada*.