

Milk Production Increases 2 Liters/Cow/Day

By Linda Harrington

Allan MacMillan and Tara Hill-MacMillan are the fifth-generation running Charles Hill and Son Farm in Central Onslow. They recently offered a tour of their brand new dairy barn to over 100 visitors on a bus trip from Dairy Focus, held in Halifax.

Planning for this 330' x 145' state of the art dairy facility began about 5 years ago and took approximately 17 months to build. Sheehy Enterprises supplied everything in the new barn expect for the bedding distributor which was installed by Northumberland Silos.

The priority in this new facility is cow comfort. Automated fans keep the temperature controlled. An automated bedding distributor spreads the bedding without ever having to move the cows. There are rubber mats on the floors to minimize wear on the hoofs with concrete in the center aisle to encourage the cows to lay down and produce milk.

The MacMillan's have four children, ages 14, 12, 11 and 9. They grow approximately 95% of their feed requirements relying on Shur-Gain for pellets and nutrients. Fundy Veterinary Service provides the farm with required animal healthcare. Breeding is done with artificial insemination, which is obtained from Alta Genetics Inc.

In addition to the traditional suppliers for the farming operation, the MacMillans require the normal professional business services, which are supplied by ScotiaBank; MNP Ltd for accounting and Caldwell Roach for Insurance.

"My grandfather would be thrilled to see how things have changed. The cows are much more comfortable. The stalls are bigger, and they are milked more often," says Tara. "This results in much less mastitis, less post calving issues and much quieter, happier and friendlier cows. The bonus is an increase in milk production of 2 liters/cow/day since we have moved into this barn." Tara says the cows adapted to the robotic milkers quicker than their human managers. With regard to milk production, the herd averages approximately 38-39 liters per day, although recently a couple of high producers have produced 70 liters per day.

The robotic milking system required a breeding program to have dairy cows with "robot ready udders". "These are a square

udder with teats in the center of each quarter, so the camera can see them," says Tara. "We have a few cows with issues, who are manually sorted and then have the teat cups attached manually, but most of the herd is milked automatically." The farm has 162 cows, milked by 4 robots and they hope to eventually expand to 200 cows.

Calves start off on an automatic milk feeder in one of the other barns, so the robotic system is something they grow up with. Once a cow calf's out, they are moved up to the new barn where they are on a comfort pad for a day before joining the population of dairy cows.

The cattle roam freely from feed troughs to milking stations, following alleyways with gates that open automatically, triggered by collars around their neck. They are milked from two to four times per day depending on how much milk they give. "If they are to be milked 4 times per day, then every 5.5 hours they can enter the sort gate and into the milking parlor. Otherwise the force flow system will direct them out into the barn to eat," says Tara, who appreciates the changes to milking schedules. "We used to milk at 3:30AM and then again at 3:30PM. Now I have access to the robots on my phone, so I can check and see everything is fine without having to be there. Initially we haven't seen any actual time savings, but we will need a year to establish a routine. The schedule is more flexible, allowing for more time with the kids and I can come back and do the chores anytime."

The cows can go to any of the four robots for milking. Once they step into the milking parlor, a 3D camera is used to automatically hook a cup to each of the four teats. In a single attachment the teat is washed, stimulated, foremilk is removed, milking is carried out and then the teat is finally dipped and the cow is let go. Data is recorded and easily accessed for each cow in the herd.

The bedding itself is very innovative. Instead of sawdust and straw, the manure is recycled. Similar innovative bedding technology is used in many of the southern states and in Europe. An automated barn cleaner pushes the used bedding into a recycling system which compresses and removes the liquids. The final product is a dry spongy material much like peat moss, which is



Robotic milking uses a single attachment where each teat is washed, stimulated, foremilk is removed, milking is carried out and then the teat is finally dipped before the cow is let go.

then delivered back to the cows by an automated bedding distributor that travels across the ceiling above the stalls, dispersing the material. "We used to use 6 tonnes of sawdust per week in the other barn," says Tara, pleased with the reduction in waste material they used to have to transport and spread in the fields. Sawdust is still used in the other barn housing calves, young heifers and dry cows, until they have calved.

There were many farmers checking out this new facility and asking questions of Tara and Allan on this Dairy Focus tour, the first of two tours in the area. TD Agriculture was the sponsor for the Charles Hill and Son Farm tour.



The automated bedding distributor passes overhead so cattle do not have to be disturbed.



After the liquids are removed from the manure, the product looks much like peat moss and can then be reused for bedding.



A roller press produces greener bedding, reducing waste material.

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