

## What you need to know before getting Robots

Tina and Doug Suhr of Kasson, MN owners of Zumbro Ridge Farms – Ti-Do Holsteins decided to update their current milking system in September 2008. Previously they had double 6 herringbone Surge parlor. The Suhr's decided to install two Lely Astronaut A3 Robotic Milking systems. As of today they are milking 110 cows. Provided is a question and answer interview, with responses from the Suhr's.



### **Did you compare several robot manufacturers?**

In comparison to the other manufacturers of robots, Lely has been working in the industry the longest, with their first robot installed still in use today, sixteen years later! In December 2007, we went to Holland to attend to a very large trade show where there were about seven different robot manufacturers present. In comparison, we liked Lely's technology the best.

**Is there a lot of maintenance on the robots?** The total maintenance on the robot takes us about ten minutes a day and an additional 40 to 60 minutes. Most of the parts have five or ten year warranty.



**Why did you decide to get robots?** The benefits of the robots include the ability to track milk production on each quarter separately to allow us to catch sick cows quicker. It also monitors conductivity on each quarter each milking. Another feature that will help with management is the upgrade to pedometer tags to help with heat detection. Full body weight is also recorded every time the cow walks into the robot. The average cow is milked 2.7 to 3.2 times per day which will hopefully allow us to increase the milk production. Prior to the robot we milked twice a day. The main reason we installed them is to eliminate the burden of employee management, which can be very stressful.

**What about the money?** CASH FLOW is the biggest consideration to keep in mind when looking into a robot. It is a large up front investment, but if you want to update your current milking facilities, it would also be a large investment. It would have cost us almost as much to update our existing milking parlor, which is a double six herringbone parlor with automatic takeoffs. In addition, we would still have had employee management issues.

**How do your robots compare to hired labor – pro and cons of pricing, dependability, etc.** We (Doug and Tina) run the dairy ourselves on a regular basis. During planting and harvest time, Doug's father will help and during hay seasons a neighbor boy or nephew will help. Before the robots, we had one full time employee. If we compare robots to hired labor, robots have huge advantages in reliability,

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temperament, cow handling and comfort. An advantage Robots have over humans is that they can consecutively pre-dip, milk, and post-dip every cow consistently every milking. For example, when we dry off our cows now, we have to strip some milk out of each quarter to find the opening to dry treat the cow. The teat end health is unbelievable with no dry cracked teat ends.

With the robots you pay for your labor up front. Within five years of what we would pay an employee, it will pay for one of our robots. Also, our stress level from having the hired hand is no longer there!



**Any benefits/hindrances for a particular freestall/bed pack design? Are the robots more suited for a particular setup or management style?**

The robots can work with any type of freestall barn or bedding pack. From what we have heard, our herd is one of the only herds using sand/limestone bedding. Using sand is not bad by any means; it just requires a little more robot maintenance. What do I mean by that? Sand is abrasive and it rubs the strings (similar to those on automatic takeoffs) and causes them to break more often than using straw bedding. In the end, we adjust the strings once a week so the worn part is removed and a

fresh piece of string is exposed. If we did not adjust the string, we would receive an alarm that the string was broken and at that time we would change it. For the most part, it is not a big problem or hassle to fix.

**What is your procedure on test day?** On test day, we usually start in the evening since it takes around 12 hours to collect the samples from each robot, and we start the other robot early the next morning. We are done with all of the testing within a 24 hour time frame. When we start testing, I hook up an air hose and another small hose to transport milk, level and turn on the shuttle (contraption that holds the sample bottles), and we're done for 12 hours. After 12 hours (give or take a few), I run a report to make sure all of the cows at that robot have been milked. If they have not been milked, we will manually run them through. Next, I disconnect the shuttle and turn it off, take it to the other robot, hook it up, and turn it back on. After 12 hours, I run my report again make sure I have all of the samples, disconnect the shuttle and turn it off. Once the DHIA field tester comes to pick up the samples, I run a report or two, he imports the files into his computer, and we are done for 30 days! It is not hard, the first time it seems overwhelming, but after you do it once it is pretty easy.



**Shuttle renting – pros/cons and future of it** We own our shuttle, and currently rent it to one other dairy in southern Minnesota. However, I think DHIA is considering purchasing one to rent it out. Pros, you don't even have to be there to test – the robot does it for you! Cons – hum.....I don't have any at this time.

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**What are the benefits or remaining on test?** With a herd of registered animals, we need to stay in good standing with Holstein Association by testing ten times a year. We are also staying on DHIA test for our own marketing purposes. So having said that, we will start with our next test and compare the conductivity values for SCC from the robot to the actual DHIA SCC to see how accurate the robot is for our own purposes. It also is beneficial to stay on test to remain part of a network of dairy farmers.

**What types of information do you get out of the robot/computer system?** The robot computer software gives you more information than you need to know some days! It gives you the cow's weight, teat temperature, conductivity, dead milk time (let down time) per quarter, milk time per quarter, pounds produced, milkings per day, seven day average milkings, and seven day milk average. We have an optional activity (similar to a pedometer) that helps detecting heats and also identifying sick cows. You can receive your herd average as a whole herd, herd average per age group (1<sup>st</sup> lactation, 2<sup>nd</sup> lactation, aged cows), or per robot. It will tell you which quarter/s on the cow need to be checked for possible mastitis. Also, we can record our cows information into Scout or DairyComp305, which Lely and DHIA are working together to somehow get the information from T4C (Time 4 Cows, the Lely management software) back to DHIA and then after test day from DHIA to T4C. The computer also keeps track of where each cow's milk went; whether it went into the bulk tank or in a bucket for treated cow milk or colostrum. It also lets us know the things that we can't see, such as the wash cycles that occur so if need to look back to make sure that all the wash cycles occurred correctly.



**What can the robot measure and how can it help you manage?** With the conductivity values, the robot helps us catch mastitis in the early stages, but for the most part the incidence of mastitis is much lower than milking without robots. We believe this is due to the robot detaching each quarter as soon as it has finished milking. We have found that on every cow there is one quarter that takes almost a minute longer than the other three quarters. Since the quarters are not over milked, the teat end health is fantastic! The robot has also helped us detect heats that we would have never seen in the middle of the night. Since September, we have breed about 40 cows off the heat detection list that we would not of have seen before. This helps us keep our days in milk down, which long term means PROFITABILITY!

The robot also generates an attention list of the cows that have not visited the robots in twelve hours. Twice a day, we print the list and get those cows to manually run them through the robot. Currently, our list mostly consists of aged cows that are mid to late lactation. All cows receive a pelleted feed inside the robot while they are milking. These cows on the attention list normally do not need the extra energy from the pellet. However, we have already seen a turn around when the cows are dried off and freshen in again. They begin milking on a regular schedule again and you would have never guess that they used to be on our attention list daily!

The robot gives us feed back on how we are doing from a management standpoint. If we don't feed them correctly you will notice a difference within about six hours at most. With robots, instead of spending your time in the parlor milking cows, you now are watching your cows, forcing you to be a better herdsman for your cows.