

# DAIRY VETERINARY NEWSLETTER

July 2021

## Milk Price Volatility, Drought and Uncertainties about School Reopening

In over 45 years of following the milk price and being involved in the dairy industry, I want to acknowledge that the combined challenges of current conditions are as daunting for dairy producers and the dairy industry as I can remember. The milk price has had more volatility during the last 19 months than at any time since the Minnesota-Wisconsin (M-W) milk pricing system was introduced in 1961 (the M-W price ended in 1993, and price fluctuations increased, but not like in the time of the current pandemic). Currently the USDA milk price projections are decreasing, but not to the extent that they were from January through May 2020.

According to tree ring records, this year's drought is the third worst during the last 1200 years in Utah. Increased extremes in weather are evident when one looks at the temperatures, flooding, wildfires and weather conditions of the last 10 to 20 years. I have lived here for 15 years, and I have never seen the kind of fire smoke anywhere that has been present in the air here recently; I thought it was bad last year. There are many accounts from around Utah of dairy producers having water allotments shut off, or giving up on watering approximately one-third of their cropland, and/or selling off dairy cattle strictly because of the short water supply. Projections of the cost of buying livestock feed are high at this time, driven by scarcity.

As the school year is starting in many parts of the country, the pandemic situation with the COVID-19 Delta variant, particularly with many school age children not eligible to be vaccinated, is reviving the political divides. Reopening of schools in some parts of the country, and whether more parents may send their children to alternatives other than public school, is uncertain. What this means for the dairy industry in terms of school lunch milk and dairy product consumption remains to be seen.

Resiliency and persistence are two hallmarks of people in every aspect of the dairy business, and I am even more appreciative of that in today's times. When we finally emerge from this pandemic, I hope the pent-up demand for many things including dairy foods rewards all of those in our remarkable industry, including dairy veterinarians.

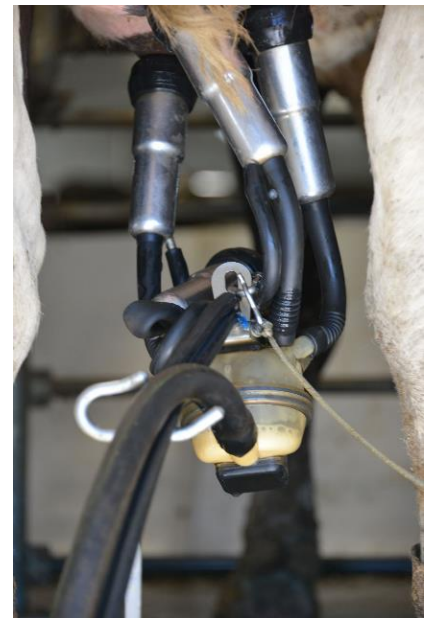
## Automatic Takeoff (ATO) Performance Monitoring - A Practical System

Approximately 20 years ago, one of our students in the Milk Quality Elective course that I helped teach in the Cornell veterinary school was Dr. Paul Virkler. He has made a great career of milking system evaluation as well as other aspects of udder health and milk quality. Recently, he wrote an interesting article in *Progressive Dairy*, July 19, 2021 issue. It covers many practical aspects of monitoring the performance of automatic takeoffs (ATO) in milking systems.

One important thing to realize about ATO of milking units is that when they were first being developed, a major issue to dairy producers was concern/perception that they left too much milk in the cows' udders after milking. Some of the early attempts did indeed leave quite a bit of milk in each quarter, but that was overcompensated

for to make sure that producers were satisfied with the milkout. The above statement is not to cast blame; everyone was trying to look out for the cows as well as to reduce mastitis and maximize milk production per lactation. Nevertheless, when they first came to market, ATO were designed to milk cows out excessively and often pulled the teat cups off very rapidly after vacuum was broken so they did not hit the floor. Seeing ATO operate such that cows were overmilked by a minute or so and then the teat cups were virtually pulled off the teats sideways was not uncommon for 20 years or so.

With the development of the Lactocorder®, it began to be more visually evident that ATO often overmilked and then pulled teat cups off under vacuum, creating reverse pressure gradients propelling air and some milk back up through the teat ends. Many producers who could never be convinced before that their ATO overmilked cows would believe it when they saw Lactocorder recordings. The function of many ATO has therefore been improved during the past 10 to 20 years. However, like any mechanical devices, especially those that can be adjusted by human beings, monitoring how ATO perform is one of the many important components of a successful milk harvesting program to reduce the new infection rate of mastitis.



### **Three category scoring system for initial ATO evaluation**

One thing we talk about every year in the veterinary epidemiology course I teach in the USU veterinary school is the concept of a three category scoring system. Studies have shown that it is much easier to achieve standardization and agreement among different people when scoring to evaluate anything when the scoring system includes no more than three levels. Essentially, we can all score “Good, Intermediate, Bad” or “Too Much, Just Right, Too Little” when evaluating just about anything a lot easier than we can when we attempt to add more levels than that.

Therefore, the system Dr. Virkler described has three main categories:

- Milking unit hits the deck on retraction
- Good retraction
- Unit hangs onto teats at retraction (I have found this to be more common than units hitting the deck, which is usually not tolerated for long because such units are damaged too often.)

## **Differentiating individual unit problem(s) vs. a milking system wide ATO problem**

It takes some time observing multiple cows milking with each unit to determine this. Sometimes only certain milking units have retraction problems, and they have them after milking any cow. When there are system wide issues with ATO, it becomes evident pretty quickly that all units are showing the same problems, including following at least one change to a different group of cows being milked.

For individual units with retraction problems, there are several things to look for:

If a unit hits the deck, is the retraction cord or chain missing? Does the cord or chain not move at all, or have a delay in moving during retraction relative to other units? Is the cord or chain too long, with excessive slack in it? (See below regarding vacuum shutoff delay time; this may be too long if the above are not found and unit(s) hit the deck).

Alternatively, if a unit hangs on the teats at retraction, is the cord or chain too short, not hanging with any slack in it to start with? (This results in the unit pulling off more rapidly than intended before vacuum is completely shut off.) Are there plugged air vents on the inflations or the claw of those units? Both vented inflations and vented claws should not be used at the same time; venting is better when on inflations only or the claw only. If vents on liners or claws are plugged, assign the task of making sure all vents are open before each milking to someone such as a parlor supervisor or head milker. This should be a habit before every milking shift begins. If all vents are open and the chain or cord are of adequate length, test whether the vacuum is shut off during retraction; this can be tested with the unit not on a cow. Activate unit retraction and see whether the vacuum to all teat cups is indeed shut off as part of the process. Dr. Virkler notes that failure of vacuum shutoff can be found in more than 25% of milking units if this is not monitored regularly. If there are no plugged vents and vacuum is shut off, the vacuum shutoff delay time should be gradually increased by small increments; this should be referred to those who service the milking system. Regardless of whether any of the above are found or no obvious explanation is detected, number and record any units with consistent retraction problems for further attention, including by the milking equipment dealer or service company.

When there are system-wide ATO problems, again in my experience it is less common to observe most or all units hitting the deck compared to when they are all hanging on the teats too long. However, both do indeed occur.

When all units are hitting the deck, the first thing to evaluate is the vacuum shutoff delay time. As described above, refer this to whomever services the milking system. The vacuum delay should be decreased in small increments and the retraction observed for at least one milking after each change. If vacuum shutoff is not delayed - it may be set to zero seconds - and units still hit the deck, Dr. Virkler notes that the retraction cylinders require attention. Rarely in my experience, it may be found that all units have retraction cords or chains too long, with too much slack; this is usually seen shortly after installation of a new system or new milking units. Another potential problem is if chains, more commonly than cords, become caught in the equipment cabinet that they are pulled back into. Maintenance steps such as checking and replacing the bushings that chains run through need to be regularly scheduled.

When all units are hanging on teats too long during retraction, the most common reason is that the vacuum delay is absent or too short. This should be noted and referred to the milking equipment service provider for gradual increases in vacuum delay time with monitoring following each increase. If all chains or cords are too short, this can occur following installation or as a result of poor maintenance including tying broken cords together. Either the farm personnel or the equipment dealer need to resolve the situation by installing longer chains or cords and subsequently monitoring how units are removed by the ATO.

This practical system to evaluate ATO is a valuable service for any dairy farm.

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### Utah Veterinary Medical Association Continuing Education Event Coming Up

The UVMA is planning a Mountainlands Veterinary Conference for **December 9-11, 2021 in Park City, Utah**. There will be large animal, small animal and veterinary technician subjects presented concurrently. Among the many subjects presented will be large animal toxicology and practical field procedures and sample collection that can be done for clinical pathology as well as updates from the State Veterinarian of Utah.

As summer ends and fall arrives, I hope we will see better days ahead; thanks for all that you do for the dairy industry. Please let us know your comments and suggestions for future topics. I can be reached at (435) 760-3731 (Cell), or [David.Wilson@usu.edu](mailto:David.Wilson@usu.edu).



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