Drs. Mitch & Mark Attend Secure Milk Supply Training This way of thinking about biosecurity on your farm has some merit to consider.

Milking Machines: What are your settings?

I often get asked what should my system vacuum or teat end vacuum be? Well the most simple explanation is: it depends. The teat end vacuum is the one value we should care the most about, it's the one that the cow experiences 2-3 times per day. It's also one that is one of the more challenging data points to capture. Milk flow affects how this number changes; the higher the flow, the lower the vacuum. Where this becomes an issue is during times of low flow. During times of low flow (either from a bimodal milk flow, or at the end of milking), teat end vacuum rises, which can lead to teat end damage. Other things that may affect teat end vacuum are the length of the long milk hose, restrictions in the line such as automatic take offs, milk meters, etc.

Lower teat end vacuum is generally better; however, liner selection can also be an issue. Every liner is designed to run at a particular vacuum. This has to do with the liner characteristics, and the amount of massage applied to the teat end during the rest phase of pulsation. Some liners are designed to run at a lower vacuum (tend to be characterized as a gentle liner), while others are designed to run at a higher vacuum (faster milking liner).

Pulsators are another area that is important to know your settings. It's not as simple as needing a ratio of 60:40, and a rate of 60 ppm.

In fact, your milking speed may be decreased by having a ratio that is not aggressive enough, which can lead to more teat end damage. One would think that a longer D phase (rest phase) would provide more massage to the teat ends, when in fact you may just be prolonging milkout by slowing milking speed. During D phase, teat ends are still exposed to the teat end vacuum due to creases in the liner. I do not recommend D phases longer than 300 ms. Similarly, B phase (milk phase) can be too long or too short as well. B phases much longer than 525 ms will not allow a faster milkout. A few of the pulsators should be assessed during milking to see how your pulsators function during milking, as they will differ when doing a dry test vs. a milking time test. Pulsator settings should be optimized to allow both a fast milkout, as well as relieve teat end congestion.

Automatic take-offs (ATOs) are another area for consideration. The ATO is responsible for removing the milking unit in a timely manner as milk flow ceases. This is one of the major components of a milking system that can affect our time in low flow, again the longer the time in low flow, the more risk of teat end damage. There is no one setting that is suggested for an ATO. It's based on time in low flow that we're seeing. We want no more than 1 minute in low flow/cow/day, so 2x herds, no more than 30 seconds/milking, and 3x herds, no more than 20 seconds.

Your milking system settings should be set up to allow an efficient milkout, while minimizing risk of teat end damage.   -AL

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Dr. Mark Attends Micotil Safety, Meets with Balchem and Arm & Hammer Self injection with Micotil can be fatal. Safe habits with Micotil should be used with other drugs. Nutrition is the foundation of health and we are now finding more ways to reduce disease through nutrition. We are running more trials with Reassure and BacciFlex to better understand their benefits.

Pregnancies Up – Twins Down We got excited a few years ago when we put these reproductive programs together. Now we have even more reason to be excited as we evaluate the results. Our program is to use one of the fertility programs of G6G or Double Ovsynch for first breeding between 65 and 80 days in milk. Cows on weekly or biweekly herdcheck schedules are then given GnRH at day 25 after breeding and examined for pregnancy a week later on day 32. Open cows that have a 2 cm CL and a 1 cm follicle are given prostaglandin at open check and the next day, they receive GnRH the evening of the 3rd day and are inseminated the morning of the 4th day. The open cows that do not have a CL, (10 to 20%) are given GnRH and its best to insert a CIDR for the upcoming week until they receive prostaglandin and follow through the breeding sequence. This rebreeding program has a name or GGPPG or GPPG and has improved open cow conception and reduced time until rebreeding compared to Ovsynch breeding that was used before.

A consultant suggested we were checking for open cows too early and it was causing us to see more lost pregnancies. Moving from 32 to 35 days would reduce the cows that were called pregnant and then become open later a little bit. However, the big group of synchronized cows that we check comes through at day 32 and we would not see them until day 39. Assuming a conservative cost of a day open of $3, this would cost dairymen an additional $21 for every open cow. The consultant also advocated not giving the GnRH a week ahead to save money. Saving that $1.50 on every bred cow to lose $21 on every open cow is the bad math that we've known for 20 years. I wanted to be sure I wasn't missing something, so I did a literature review and had conversations with top repro physiologists. I suspected some of the results, but their information and review of conception and twin pregnancy records on our farms were exciting. Fertility programs like G6G and Double Ovsynch capture the follicular wave in such a way that the breeding follicle is developed in a higher progesterone environment than it is with natural heats or regular Ovsynch. This leads to higher conception with less double ovulations and twins. With our Resynch program of GnRH a week before open cow exam, we are setting up the same potential again. The cows with a CL are unlikely to recruit a double ovulation, while those without are. Ultrasound gives us great visualization of the noncyling cows so we can give them another GnRH, a CIDR, and a week to develop a quality follicle that makes sense from a fertility and less twins stand point.

So how did the records evaluate our programs? The herds that were on a Presynch-Ovsynch first breeding usually with some cherry picking and the first GnRH of resynching Ovsynch at opencheck at days 28 to 35 since breeding ran 5 to 8% twins. When these same herds were converted to a fertility program without cherry picking for first breeding, conception went up by 4 to 6%. These herds were almost all put on the GGPPG or GPPG resyncronization program and saw twins drop to 1 to 2%. We still look for twins at herdcheck because we know that giving those cows enough dry period is important but the system is working. Pregnancies are up and twins are down. MH