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Valleywide News

VALLEYWIDE VETERINARY SERVICES

A New Tool to Monitor Milking Systems

Dr. Elizabeth Martens

Milking systems should be analyzed yearly at a minimum. A full analysis looks at the equipment, the cows, and the milking procedure - the 3 main culprits of poor milk quality.

We at Valleywide have a fun new tool that can evaluate the milking procedure from the cow's perspective. This lightweight, deck of cards sized instrument is strapped to a milking liner shell and has sensors that can be

plugged in at up to 4 different locations on the milking unit. It can be left to measure and record vacuum and pulsation for 8 or more hours at a time and does not interfere with regular milking at all. It can also transmit data via bluetooth to watch in real time when trying out a change in settings or milking procedure. Traditional vacuum measurements cannot look at teat end vacuum separately from claw vacuum, nor can they observe an entire milking shift without having a person present for data collection. The VaDia can do this, save the data, and present findings in a clear and concise way using graphs and tables.

Let your vet know if you would like them to bring the VaDias to your next herd check to get started gathering baseline data in the parlor. They can run during herd check or be left on for longer. If you have more specific milk quality concerns or interest in overnight data collection, please let us know!

Several Common VaDia Findings:

System vacuum level and fluctuation

Unit on time

Bimodal milking events

Overmilking events

Time between milkings and between cow groups

Liner slips “squawks”

Poor liner fit

Unit re-attachments

2562 VT-22A
Bridport, VT 05734

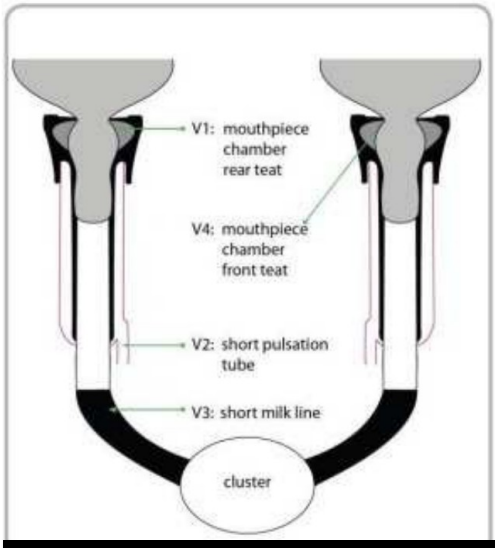
Phone: 802-758-6888

E-mail:
Valleywidevets
@gmail.com

Website:
www.valleywidevets.com

Dr. Dave Rockwell
Dr. Glen Cousineau
Dr. Elizabeth Martens
Dr. Stephanie Bandoski
Dr. Emma Cijka

Kim Miner
Krystal Schisel
Nikki Normandin, LVT



The 4 places the VaDia sensors plug in

Calcium, the whole story

Dr. Stephanie Bandoski

The Tip of the Iceberg

Only about 2-5% of cows suffer from classic milk fever, but another **50-70% of fresh cows suffer from subclinical, or non-symptomatic, low calcium** (McArt, 2019). These cows don't go down, but are teetering on the point of not having enough calcium for their immune systems to function. These cows are at an increased risk of developing other transition diseases and have a lower milk production (McArt, 2020).

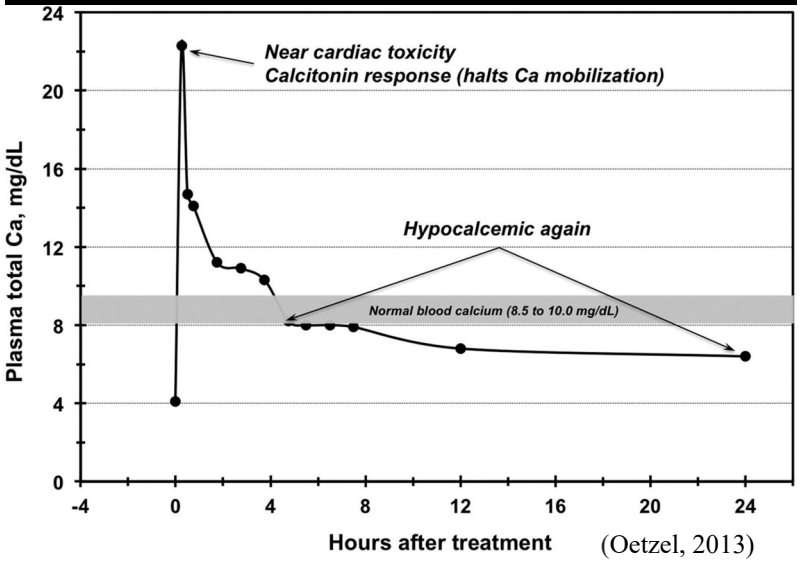
Pre-fresh diets help minimize the amount of cows with low blood calcium, but some still sneak through the cracks. Because of the risk of subclinical low blood calcium, some people give calcium to all fresh cows. However, due to the cost of the calcium, labor, and the fact that not every cow needs supplementation, **it is not economically advantageous to give calcium boluses as a blanket therapy to all fresh cows** (Oetzel, 2013). However, identifying at risks groups of cows, such as those that had twins or have a history of milk fever, and treating with oral calcium can help decrease cases of subclinical and clinical low calcium.

Calcium requirements **triple** after calving

The Treatment

When a cow is down from classic milk fever, immediate calcium should be given IV. **When we give IV calcium, the blood calcium levels increase drastically, so much so, the body starts to actively *decrease* the amount of calcium in the blood.** This is known as the "rebound effect" and explains why some cows go down with milk fever again a few hours after treatment. **Milk fever cows treated with IV calcium should be given a long lasting oral bolus once standing** in an effort to combat this rebound effect. The rebound phenomenon also explains why giving two bottles of IV calcium actually delays recovery and is not recommended.

The Rebound Effect of Calcium



(Oetzel, 2013)

Blood calcium levels after IV calcium treatment

For more information on hypocalcemia prevention and treatment, please talk with your vet or visit one of the following sources (all can be found online!):

1. McArt, J. (2019). Being a Mom is Hard: Calcium Demands of Early Lactation Dairy Cows. *WCDS Advances in Dairy Technology*, *31*, 173–182.
2. McArt, J. A. A., & Neves, R. C. (2020). Association of transient, persistent, or delayed subclinical hypocalcemia with early lactation disease, removal, and milk yield in Holstein Cows. *Journal of Dairy Science*, *103*(1), 690–701.
3. Oetzel, G. R. (2013). Oral calcium supplementation in Peripartum Dairy Cows. *Veterinary Clinics of North America: Food Animal Practice*, *29*(2), 447–455.