

Six Things Employees Should Know About Their Tools of the Trade

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Employees are often the “boots on the ground” in the milking parlor. They have eyes and hands on your cows every day, so why not take advantage of their insight for your herd? Why not encourage employees to recognize a few simple signs that help indicate if your milking equipment is running efficiently?

Below are six simple observations that every employee who milks cows should not only know, but also understand **WHY** they are important.

1. Correctly aligned liners (inflations) - even if employees don't change liners, they should be aware of any that aren't properly installed.
2. Signs of overmilking or inadequate liner compression/pulsation. Have employees keep an eye out for changes on the teats that are associated with these problems. Often employees will notice signs of cow discomfort while milking- such as kicking at units.
3. Know the milking vacuum level- Sometimes, loss in system milking vacuum can occur over a period of time and impaired milking efficiency. This can be avoided by employees who know the system vacuum and can check a properly functioning gauge at the start of each milking.
4. Proper alignment of units to reduce liner slips (squawks)- This can occur from unstable vacuum in the milking system, improperly aligned (balanced) units, poor teat conformation, or liners that do not “match” teat size. Employees should be trained how to hang and balance units.
5. Air vents are open for proper milk flow. Employees are critical in keeping vents open by cleaning units.
6. Air hoses in good condition- Worn or cracked hoses can lead to inefficient milking.

1. Correctly aligned liners

Most varieties of liners have markings on the mouthpiece that align with markings on the short milk tube. Liners that are twisted are unable to open and close correctly during pulsation and therefore cannot milk out cows effectively.



Fig. 1; Hash marks (red circles) should be aligned with one another, the 90 degree difference indicates a twisting of the liner within the shell

2. Signs of overmilking or inadequate liner compression/pulsation

Overmilking occurs at the end of milking when a unit is attached and no milk is flowing. Vacuum in the teat cistern can be as high as 90% of the cluster vacuum (Rasmussen, 2004). Also, overmilking causes teat end changes in as little as a couple of weeks with thickening of teat tissue (rough teat ends, hyperkeratosis) and vascular changes such as congestion (stagnation of blood in the vessels) (Mein, 2001). Improper liner compression ('squeezing' of the liner against the teat for massage) or improper pulsation also reduces blood flow from the teat. This can lead to increased risk for mastitis and impaired milk flow.

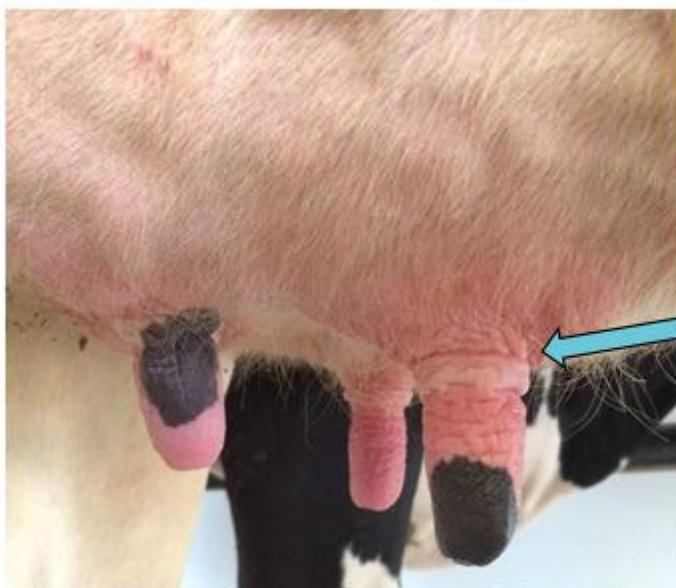


Fig. 2; Compression rings (blue arrow) with color changes due to teat exposure to high vacuum during overmilking.

3. Know the milking vacuum level



Fig. 3; Non-functional vacuum gauges in the parlor do not help.

Operating vacuum level should be checked at the start of each milking. Employees should have access to a functional vacuum gauge in the parlor. When vacuum levels deviate from normal, management should be notified.

4. Proper alignment (balance) of units to prevent liner slips



Fig. 4; Milking unit should be perpendicular to a cow's udder, not hanging at an angle.

5. Air vents are open for proper milk flow



Fig. 5; Depending on the milking unit, air vents can be on the cluster, the liner mouthpiece or short milk tube. Having a source of air into the unit is essential for efficient milking and teat health. Employees play a critical role in keeping vents open by cleaning units.

6. Air hoses in good condition

Air hoses, just like every other piece of equipment, wear out over time. Most equipment dealers would recommend that air hoses on milking units be changed every 6 months or as needed when cracks and other damage occurs. Cracks in hoses can lead to loss of vacuum in your milking system or improper pulsation.

Fig.6; Air hoses are in good condition with no cracks or holes where vacuum leaks may occur.



Milking cows on a daily basis can become a monotonous job, and daily care of equipment can be overlooked. Farms should include routine equipment checks as part of employing training. Even small tasks such as making sure units are correctly aligned underneath the udder and air vents are open can make a big difference. The six points outlined above can take employees to the next level and help them better understand the tools of their trade. This doesn't require a 45 minute lecture in a classroom, the most valuable lessons can be taught over a lunch break or in the parlor itself. These discussions can act as a springboard for conversations about a range of topics including teat health, basic machine maintenance, lag time and oxytocin release. The more employees know, the greater the opportunity for their investment in your operation.

References:

Mein, G. A., Neijenhuis, F., Morgan, W.F., Reinemann, D.J., Hillerton, J.E, Baines, J.R., Ohnstad, I., Timms, L., Britt, J.S., Farnsworth, R., Cook, N., Hemling, T. 2001. Evaluation of Bovine Teat Condition in Commercial Dairy Herds: 1. Non-Infectious Factors. in Proc. 2nd International Symposium on Mastitis and Milk Quality.

Rasmussen, M. D. 2004. Overmilking and Teat Condition. Pages 169-175 in National Mastitis Council Annual Meeting. NMC.