

WVS MILK QUALITY

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Understanding Milk Leakage in Dairy Cows

The following is taken from an article in *Udder Topics* written by Maristell Rovai from South Dakota State University.

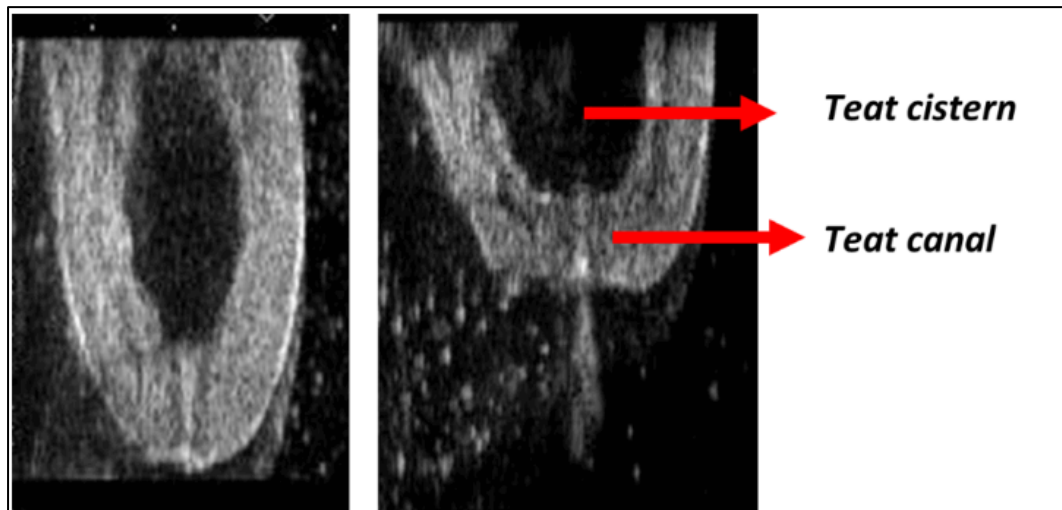
Milk leakage can increase the risk of mastitis and may create confusion about whether proper udder stimulation has occurred. Milk leakage is the involuntary dripping or flowing of milk from a cow's teat (or teats) between milkings without stimulation. This condition can negatively impact udder health, milking efficiency and increase the risk of intramammary infections (mastitis).

Causes of milk leakage are:

- **Shorter teat canals** (about 9% shorter) for leaking cows reduce the natural barrier against pathogens and prevent milk leakage. (Rovai, Kollmann, Bruckmaier. 2007. *Incontinentia Lactis: Physiology and Anatomy Conducive to Milk Leakage in Dairy Cows*. Journal of Dairy Science, 90, 2.)
- **Higher intramammary pressure (IMP)** due to larger volumes of cisternal milk.
- **Faster milk flow rates** and higher quarter-level yield are linked to greater leakage risk.
- **Sphincter inefficiency or damage**, reducing closure of the teat canal between milkings linked to leakage milk.
- Leakage was more common when cows **lie down before milking**, increasing exposure to stall bedding contaminants.

To produce high-quality milk requires the prevention of intramammary infections. Milk leakage has real implications for mastitis risk and milk quality. Below are some important points:

- Leaking teats outside the milking parlor increases mastitis pathogens' environmental presence. Cows are more vulnerable to pathogens like *E. coli*, especially when cows are in contact with bedding due to the backflow of milk via the open teat canal.
- Leaking milk on entering the parlor may increase other cows' exposure to mastitis pathogens.



- Milk leakage also disrupts milking routines, particularly in high-throughput parlors, leading milkers to skip necessary stimulation steps (e.g., forestripping), believing milk ejection has already occurred. If automatic stimulation is used, milkers mostly do not use it in leaking cows.
- High milkability cows, especially those in greater lactations, may have a higher incidence of milk leakage and mastitis.
- Milk leakage may occur in any breed or milking parlor setup.
- Mostly, it may be observed shortly before milking in the holding area or a few hours before milking due to milking intervals.

The following are practical recommendations to reduce milk leakage:

1. Optimize milking intervals

- Avoid long intervals between milkings to reduce udder pressure.
- Consider more frequent milking for high-yield cows or those in early lactation.

2. Evaluate teat anatomy

- Monitor cows with short teat canals or leakage history.
- Ensure mastitis and dry-off treatment tubes are adequately done without damaging the teat canal structure.

3. Improve stall comfort and hygiene

- Maintain clean, dry bedding to lower infection risk from leaking while lying down. It is essential in hospital pens where different health conditions

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are grouped, and cows with intramammary infections and leaking milk can predispose others to various situations.

- Control flies and manage temperature and humidity in barns to prevent pathogen growth, as leaking cows will be at more risk.

4. Milking parlor practices

- **Ensure proper milking procedures** for udder stimulation before attaching units.
- **Avoid premature unit attachment** or skipping preparation steps like forestripping or shortening the wipe-off.
- **Avoid delay when attaching** the milking units (longer lag time than needed) after udder preparation.
- **Ensure milkers understand** not to use the same towel to dry leaking teats on other cows.
- **Avoid splashing water** or dirt on open teats.
- **Avoid allowing pre-dip cups to become filled with milk**, as this can inactivate the disinfectant.
- **Ensure that towels are thoroughly washed** and dried, as they can accumulate milk and manure.
- **Prevent overmilking**, especially with take-offs, to protect the teat canal and possible milk leakage from damage.
- **Ensure milkers understand** the importance of preventing overmilking.

5. Special care at fairs/exhibitions

- Maintain frequent milking to reduce excessive udder pressure and milk leakage.

- Provide clean bedding (e.g., straw) for cows lying down.

6. Record and monitor leakage

- Log observations of milk leakage when possible and relate to mastitis incidence.
- Use data to detect patterns and guide management changes.
- Monitor high-producing cows, as these animals will take longer to reabsorb the milk produced after milking. This may lead to milk leakage in mature cows due to teat conditions such as a shorter canal and weak or damaged sphincter.

Take Home Messages

- Leaking cows do not necessarily have complete milk ejection. Therefore, the different handling of leaking cows in shortening of udder preparation is incorrect because leaking cows also need prestimulation.
- Milk leakage occurs frequently in dairy farms of all herd sizes. It seems to be related to high milkability and high milk yield.
- Milk leakage occurs between milkings, in the parlor or in the barns.
- Work with veterinarians, extension specialists and consultants to assess risk factors and improve routines.
- Walk through and inspect regular milking procedures and stall hygiene for lactating and dry cows.
- Educate workers on proper milking and dry-off procedures. Ensure new employees understand “how” and “why” of each protocol step and the consequences of not following them.

You Cannot Still Have What You Never Had

A humorous tale by Dr. Mark Sosalla

Dr. Al keeps telling me that I need to tell more stories in the newsletter. The following story is not about veterinary medicine, but it does say a lot about me. The clients that I see on a routine basis have heard this story before, but the rest of our clients have not and may find it amusing.

About a year ago one of my sons was playing in a band at a bar in Fond du Lac on a Thursday night. He asked me to come and watch him play. I got home a little late and asked my wife if she wanted to come with. She declined because she was already in her pajamas.

Anyone that knows me knows that I am terrible at talking to women that I don't know, but among my friends I pretend like I am really good at it. I asked my wife if she trusted me in a bar with all those young girls. She laughed and said she wasn't worried. I reminded her about Bill Belichick and she promptly told me I did not have his money.

When I go to a bar to listen to music, I usually try to blend into the wall so no one sees me. As my son finished his first set, a young girl started walking right up to me.

For a brief moment, I thought to myself, “Damn, I still have it.”

When she got up to me, she said, “Sir, do you know that your zipper is wide open.”

I looked down and sure enough there were my tighty whities showing through my zipper. I went from thinking how good looking I must be, to realizing I looked like a 90-year-old man.

My brother Wally has told me, “You cannot still have what you never had.”