Ten Common Reasons Antibiotic Contamination Occurs in Bulk Tank Milk

1. Milk from a treated cow was accidentally routed into the pipeline.

2. An antibiotic-treated dry cow was unintentionally milked.

3. The same milking unit was used to milk an antibiotic-treated cow before milking untreated cows. The milking unit was not cleaned and sanitized between uses.

4. Lactating cows were purchased and the new owner was unaware of recent antibiotic treatments prior to sale.

5. One quarter of a cow was treated for mastitis and withheld from the bulk tank. However, milk from the other three quarters was **NOT** withheld and was permitted to enter the pipeline.

6. Equipment used to milk treated cows was handled carelessly; for example, vacuum from the milk pipeline was used to operate dump-milk buckets.

7. All antibiotic-treated dry cows were milked last, but the milk line was not diverted from the bulk tank.

8. Antibiotic residues remained in the milk of a cow that was treated in an extra-label fashion. These are the cows which should be tested individually.

9. Medicated feed was accidentally mixed into the lactating-cow feed.

10. Cows drank from a medicated footbath.

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Err on the side of safety!

Accidents and human error are unfortunate events but the end results (milk residues) are still violations. Treated cow identification protocols need to be farm specific and standardized so all farm personnel can readily distinguish a medicated cow. When a cow needs medication, the first treatment step (before any medications are administered) should be the application of some form of semi-permanent identification. At least two different identification methods should be employed. These may include leg bands, chalk marks, tail tape, neck chains, or some other form of secure identification that can be easily removed when the withholding time has expired.

➔ When FDA-approved drugs (for dry and lactating cows) are used according to the label directions, producers should follow the recommended withholding times. Extensive product evaluations by drug manufacturers have built safety factors (required by the FDA) into the established withholding times. These safety factors are 100 to 1,000 times lower than the lowest dose expected to cause a violative residue in milk. **Drugs used in an extra-label manner MUST be used within the context of a valid veterinarian-client-patient relationship**. Extra-label treatments **DO NOT** have established withdrawal times; therefore, the prescribing veterinarian must supply a withdrawal time for meat and milk sufficient to assure food safety. Administering two or more FDA drugs into one cow simultaneously is considered extra-label drug use and may result in violative residues due to unknown pharmacological effects. Extra-label use includes changing the dosage, frequency or route of administration and may result in violative residue. Even though FDA-approved medications are used according to label directions, extended withholding times may be needed for cows that calve earlier than expected, cows that are severely ill, or cows that do not respond to label treatments.

➔ **Milking all treated cows AFTER untreated herd mates is an important preventive measure and strongly advised**. Milk dump-buckets connected to pipeline vacuum can overflow or be tipped, allowing contaminated milk to enter the system. Frequent disposal of contaminated milk from dump-buckets may reduce the potential of overflow into the pipeline.

➔ Although milk residue tests are not designed or approved for individual cow testing, milk from all purchased cows should be evaluated for residues by a test kit that detects the same drugs as the farm's milk processor. This should occur before commingling purchased-cow milk in the bulk tank. Milk should be discarded from all cows which test positive. It may be prudent to discard milk from purchased additions for at least eight milkings regardless of milk residue test results.

When in doubt, dump it out!

➔ Using the same milking unit on treated and untreated cows without thoroughly cleaning and sanitizing between cows is a violation of the Pasteurized Milk Ordinance. Extremely small quantities of contaminated milk can result in bulk tank residues. Milking treated cows last is a wise practice. If facilities do not allow isolation of treated cows, a separate, labeled hospital unit connected to a dump-bucket can be employed.

➔ Segregate treated cows from lactating cows, preferably in a separate facility. Physical isolation will reduce the potential for unintentional commingling of treated dry cows with the lactating herd. The farm specific, two-way identification system mentioned previously should make it simple for milking personnel to easily recognize antibiotic-treated cows.

➔ Prior to milking, a treated-cow list could be hung from the bulk tank swing line. Temporary parlor (milking) down-time should occur between milking untreated herd mates and treated cows. Even if untreated cows remain in the parlor as "place-holders," all milking units should be removed and readied for the medicated milking string. To retrieve the treated-cow list from the swing line, one must enter the milk house. Before removing the treated-cow list, pull the swing line out of the bulk tank. Use the treated-cow list to cross check the remaining cows to ensure that all treated animals have been withheld.

➔ The practice of using medicated footbaths to control hoof diseases has some scientific basis. Once manure accumulates in the footbath solution, the efficacy of the medication may dramatically be reduced. Treating individual lame cows with sprays and/or corrective hoof trims might be considered and may reduce the potential for residues.

➔ Medicated feeds should not be used to control diseases in lactating dairy cows. The diseases for which medicated feeds were developed can be controlled through improved environmental and nutritional management. If medicated feeds are used on the farm for non-lactating animals, store them in a separate facility from lactating cow feed ingredients.

➔ All FDA approved drugs designed for intramammary use will be absorbed into a cow's blood stream after infusion into a quarter. The bloodstream carries the nutrients used to produce milk within the udder. Antibiotics absorbed into the bloodstream can also be transferred (along with nutrients) to all functional quarters. **Discard milk from all four quarters, regardless of which quarter was treated!**

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