

SECTION V-5: DETECTION OF INHIBITORS AND OTHER CHEMICALS

5. DETECTION OF INHIBITORS AND OTHER CHEMICALS

Milk samples may be tested by the processor for presence of chemicals in the milk, which inhibit the growth of bacteria. These “inhibitors” are usually antibiotics but may also be disinfectants. Other chemicals include veterinary treatments, e.g. dewormers (anthelmintics), treatments for external parasites, NSAIDS. Use of veterinary drugs, the rules, regulations and risks are covered in more detail in Section VI.3.

Presence of inhibitors is very damaging to milk quality. It may prevent cheese making, and presence of some drugs may cause an allergic response in people consuming affected milk products. Usually the tank is discarded but if transported by milk truck, the entire contents of the truck may need to be discarded. Often fines are assessed by the processor to recoup losses from presence of inhibitors.

Below is a table modified from the OMAF Factsheet “Troubleshooting Antibiotic Residues in Goat Milk”¹. More information on avoiding residues is covered in Section VI.

Table V.1. Troubleshooting antibiotic residues in milk

CAUSES	SOLUTIONS
A) Milk from treated ewes enters the bulk tank before the end of the milk withdrawal period	
No permanent written records of treatments	Keep a permanent record of treatments. Use the Food Safe Farm Practices program ² and recording system. Keep the records in or close to the milking parlour so that information can be easily checked.
Forgetting the ewe was treated Poor identification of the treated ewe	Mark all treated ewes in an easily recognized manner (Error! Reference source not found. ²⁵). The identification should be easily seen while milking the ewe (e.g. leg band), be semi-permanent and removable once the withdrawal period has ended. Livestock crayon is likely not a good idea for these reasons.
Poor communication between the person who administers treatments and the person who milks	Information on all treated animals should be written on a blackboard or posted on a bulletin board near the milking parlour so all people can easily find the information (Error! Reference source not found. ²⁵).
Milking one half when the other half was treated with an intramammary product	Because the antibiotics are absorbed into the body, they may also be present in the other untreated half. Keep both halves out of the tank.
The milk line is used as a vacuum source to milk the treated ewe, when using a trap bucket to withhold the milk	Check with the equipment supplier to see whether the pulsator on the bucket can be adapted to provide vacuum to the trap bucket.

¹ http://www.omafra.gov.on.ca/english/livestock/goat/facts/info_trshtaressgtm.htm

² <http://www.cansheep.ca/cms/en/Programs/FoodSafeFarmPractices/FoodSafetyFarmPractices.aspx>

CAUSES	SOLUTIONS
Separate milker unit not used for treated ewes	Milk the treated ewes last, or with separate equipment to ensure no contaminated milk can enter the milk supply (Error! Reference source not found. ²⁶).
Milker unit not cleaned properly between treated and untreated ewes	Thoroughly clean the milking unit between treated and untreated ewes.
Treated dry ewes not managed separately from milking ewes (Fig. 1)	Keep dry ewes separate from milking ewes so don't accidentally enter the parlour. Identify dry ewes (e.g. leg band) as soon as dry treated so not accidentally milked.
B) Prolonged drug withdrawal time because antibiotics used improperly or without appropriate guidance	
Antibiotics are used at an increased dose, frequency or duration of treatment, different route of administration than indicated on the drug label	Use antibiotics in lactating dairy ewes only with a veterinary prescription from your flock veterinarian and with a valid veterinary client patient relationship (VCPR).
Using antibiotic drugs not approved for lactating dairy ewes³	Only use antibiotics within a valid VCPR. If not sure if withdrawal time is sufficient, request milk testing for inhibitors using an approved test.
Purchase ewes that were previously treated	Purchase only from farms on the Canadian Sheep and Lamb Food Safe Farm Practices program. Ask vendor for treatment records. Test the milk of ewes with an unknown treatment history.
Dry ewes which have been “dry treated”, lamb earlier than withdrawal time for product	Keep and consult records of all withdrawal dates for dry-treated ewes and dates of “safe to go in the tank”. Consult flock veterinarian if this occurs.
Feeding medicated feeds	Medicated feeds should be clearly labelled and stored away from milking flock feeds. Feed handling equipment should be cleaned between types of feeds.
Inadequate udder preparation when topical antibiotic products are used	Follow proper protocols for udder preparation. Only use topical antibiotics on the advice of the flock veterinarian.

Fig. 1 Treatment record from Canadian Sheep and Lamb Food Safe Farm Practices program (left). Identify treated animals (centre). Communicate with milkers (right)



³ No antibiotics are licensed for use in lactating dairy ewes in Canada. Extrapolation of withdrawal times for products licensed for dairy cows must be done on the advice of the flock veterinarian with a valid VCPR.