

## SECTION V: MILK QUALITY

### 1. WHAT IS MILK QUALITY?

The quality of the milk produced by your ewes is measured by several aspects:

- The level of bacteria in the milk;
- The number of somatic cells (which are a measure of inflammation or mastitis);
- The freezing point as affected by water contamination;
- Presence of residues of veterinary drugs and other chemicals or toxins, and
- By its colour, flavour and odour

All of these aspects influence the milk's shelf life; its taste and palatability; its safety for the public; the quality and quantity of the cheese and other dairy products that can be made from the milk; and the healthiness of the product.

The factors that determine milk quality are numerous and are within the power of the producer to influence positively. Some of these aspects are regulatory, i.e. measured and enforced by the provincial government (not in Ontario) and all are enforced by the processor or cheese plant, which purchases the milk for processing. For these reasons – and because we all want to produce the best milk possible – the production of high quality milk has to be the number one goal of all dairy sheep producers, their veterinarians and businesses and extension personnel that work with the producers.

#### 1.1 REGULATORY LEVELS IN DIFFERENT JURISDICTIONS

Unlike the dairy cattle and goat industries where bulk tank regulatory levels are strictly regulated and dairy producers must be licensed to ship milk, there are no government regulations for dairy sheep in Ontario but are in other regions in Canada (e.g. Quebec). However, milk processors have the right to reject milk if they do not meet their “in-house” standards.

##### 1.1.1 ACCEPTABLE LEVELS OF SOMATIC CELLS IN SHEEP MILK

Milk quality parameters are not regulated federally in Canada; however Quebec has implemented mandatory standards in their dairy sheep industry. For SCC levels, the acceptable threshold is 750,000 cells/mL. In the US, the acceptable SCC regulatory levels of raw milk set for dairy sheep is the same as in Quebec and is the same as for dairy cattle in that country, i.e. 750,000 cells/mL.

In Ontario, regulatory levels for cattle are lower, i.e. 400,000 cells/mL. It is not known if this level could be achieved by dairy sheep producers and no information exists in this province on average SCC levels in dairy sheep flocks. Dairy cattle produce milk through a merocrine system, so there is less damage to secretory cells in the udder, while both sheep and goats produce through an apocrine system, so that there are inflammatory factors in the milk. With sheep, this is estimated to be 15,000 cells/mL and with goats, 150,000 cell/mL. See Section I.1.2.2 for an explanation of merocrine and apocrine secretion.

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### 1.1.2 ACCEPTABLE LEVELS OF BACTERIA IN SHEEP MILK

Standard plate count (SPC) is a measure of bacteria in raw milk (colony forming units or CFU/mL of milk) and is explained in more detail below (Section V.3). In the U.S., raw milk should have <100,000 CFU/mL, while pasteurized milk should have <20,000 CFU/mL. In Quebec, the allowable level for SPC is 50,000 CFU/mL. In Ontario, goat milk allowable level is 50,000 CFU/mL.