

SECTION III-3 MILKING MANAGEMENT

3. RECOMMENDATIONS DURING MILKING

3.1 TIME FROM UDDER PREPARATION TO MILKING

As mentioned in Section I.1.2.2, milk let-down is caused by release of oxytocin from the sheep's pituitary gland. Oxytocin release is triggered by outside signals such as occur when cleaning the udder and teats. This happens very quickly, within less than a minute. Twenty sec of stimulation is adequate for milk-let down. To make sure that this phenomenon is properly taken advantage of, milking should commence in less than 60 sec after udder preparation.

3.2 TIME FOR MILK-OUT

Dairy sheep milk-out very quickly when milked by machine. High producing, slow milking ewes usually are done milking in less than 3 min. Most ewes milk out in less than 2 min and many in less than 1 ½ min. Making sure that ewes are not over-milked is important in preventing mastitis. Over-milking causes damage to teat ends (Section II.4.7.1), slowing milking and increasing risk of mastitis.

3.2.1 RECOMMENDED UNITS PER MILKER

The number of milking units per milker is dependent on the length of the parlour, the amount of time that is ideally allotted to milking, as well as the number of people milking. This is very flock dependent, but there are some general standards that can be followed.

Here are some average times for udder preparation and post-milking management:

- It takes 30 sec to check the milk (stripping the foremilk) and clean and dry the teats and udder.
- It takes another 10-15 sec to apply the teat cups.
- If machine stripping is performed, this may take another 15 to 20 sec.
- It takes another 15-20 sec to remove the teat cups and effectively teat dip.

This means that each ewe will occupy a milker's time for 55 to 85 sec. The average ewe takes 120 sec to milk out. Without the use of automatic take-offs, which should prevent over-milking; there is a danger of over-milking ewes if too many units are in action per person milking.

To make sure the ewes are not being over-milked, use a stop-watch to check how much time the milking unit is on. Do not skimp on time for proper udder preparation and post-dipping. These procedures are critical to udder health and milk quality.

3.3 STANDARD VALUES FOR MILKING EQUIPMENT

It is important to ensure that standard values for milking equipment are monitored on a regular basis. Although the equipment may appear to function correctly during milking, there could be an underlying issue affecting milk flow, or causing teat damage. The following chart demonstrates appropriate recommended equipment standards that are used for milking sheep flocks:

Table III.2. Standard values for milking equipment in dairy sheep parlours

EQUIPMENT PARAMETER	STANDARD VALUE
Pulsation Speed	60 – 180 ppm
Pulsation Ratio	50 – 70% Milk
Vacuum at Peak Flow (kilopascals = kPa)	At the claw: 32.5 to 39 kPa (9.6 to 11.5 inches mercury) Low Line System: 38-42 kPa Mid Line System: 41-46 kPa High Line System: 44-48 kPa 1 kPa = 0.295 inches of mercury (Hg)

As mentioned in Section II.4.9.2, improper set-up and maintenance of milking equipment will result in an increased problem with mastitis.

Basic information on the components of milking machines is available from the OMAF Factsheet at <http://www.dairyweb.ca/Resources/USWebDocs/MilkingMachine.pdf>

3.4 PREVENTING LINER SLIPS AND SQUAWKS AND IMPLICATIONS FOR MASTITIS

Squeaks and squawks are indicative of liner slippage, when the teat cup liner loses contact with the teat skin and air enters the liner through the mouthpiece. Liner slips may cause reverse milk flow, where milk droplets are forced at high speed towards the teat end. Liner slippage can be a significant cause of mastitis in dairy flocks.

There are many reasons why liners slip in a milking parlour, including the following:

- Liners which are old and worn
- The mouthpiece is misshapen
- Milking wet teats
- Milking at low vacuum level or a high number of vacuum fluctuations
- Blocked or partially blocked air vents
- Poor conformation of the udder and teats may increase risk if combined with above issues (Section II.4.6)

3.5 MACHINE STRIPPING, IMPLICATIONS FOR MASTITIS

Machine stripping where at the end of milking, the udder is massaged while the teat cups are in place. This is done to remove any residual milk that may be present in the cistern of the gland (Section I.1). In dairy sheep, the cistern can hold as much as 50% of total milk yield, compared to 20% for cattle (Section I.1.2.2). Additionally, conformation of the udder and teats in sheep is often less ideal for machine milking, so that residual milk may be trapped when the udder collapses at the end of the milking period (Section II.4.6). The advantage to machine-stripping is that it increases the amount of milk removed from the gland over-all. However, there are disadvantages to machine stripping and implications for udder health.

Fig. 1. Machine stripping



Machine stripping increases the length of milk-out, not just because of the time required to manipulate the udder (Section III.3.2.1), but machine-stripped ewes also take longer to milk out in general than ewes that are not machine-stripped. Over milking causes teat-end damage (Section II.4.7), which slows milking and increases the risk of mastitis organisms getting into the udder. Through-put of the parlour is much slower when machine-stripping is practiced. The time spent machine-stripping should not interfere with the time spent in udder and teat preparation.