

Measuring Milk Yield in Sheep

Recommended instructor to student ratio: 1:15

Category

3. Minor conscious intervention

Objective

To collect colostrum or milk samples from ewes to determine milk yield from lactating ewes.

Alternatives to animal use

Milk production can only be measured by milking a lactating ewe. Another possible way to measure milk yield is to weigh lambs, allow them to drink and then re-weigh lambs although this is not effective in all cases as they may not empty the udder completely or lambs may urinate during milking time altering weights.

For teaching purposes, photographs or videos may be sufficient to explain the technique of measuring milk production, but handling of an animal is required if students are to become experienced with application of the technique.

Equipment

Overalls, Gloves, Collection container, Milking Machine if required, paper towel, clean water, teat disinfectant and oxytocin

Safety and Risk considerations

Persons working with the sheep must be aware of the following:

- Sheep are herd animals and milking ewes requires a single ewe to be restrained
- Sheep have a fight or flight response so must be well restrained
- Sheep may have recently lambed so may be protective of their lambs

Drugs, chemicals or biological agents

Teat dip (disinfectant)

Oxytocin (for milk let down)

Procedure

Production of milk from a ewe can be measured between the day of birth and the end of lactation. A lactating ewe will be restrained either in the sitting position, or in a standing position if a second operator is available to hold the ewe or a suitable restraint method (head bale, crate which restricts movement) is available. The sitting position is preferred for animals not regularly milked as kicking is minimised.

Operators will have clean hands and wear disposable gloves.

Milk will be collected from one side of the udder only to ensure some colostrum or milk will remain immediately for the lamb.

Prior to each milking ewes will be given 5 IU oxytocin intramuscular to help milk let down, and left for 3-5 mins prior to milking.

At all milking times the teats will be washed with clean water to remove soiling (manure, mud) if necessary, then wiped dry with a single use paper towel. One teat (the same teat for all milking measures) will be either hand stripped using fingers to gently squeeze and expel milk into a container or machine milked using a device specifically designed to remove milk from ewes. At all times the whole side of the udder will be completely milked, with milk fed to lambs if necessary.

Avoid touching the end of the teat at all times.

After each collection, the teats will be dipped in a suitable teat dip (disinfectant) to minimise the risk of teat infection.

To measure milk production ewes will be completely milked on one side of the udder with lambs removed from the ewes to stop them accessing the udder (lambs will remain within touching and smelling distance of the ewe to minimise ewe-lamb bond disruption). The lambs will remain separated from the ewe for 4 hours. After 4 hours the ewe will be again milked from the same side of the udder to measure milk production. Lambs will be then returned to the ewe and able to access the udder.

Impact on wellbeing of animals

The procedure will cause short-term stress due to handling, for animals not regularly milked. Each milking procedure should take less than one minute. Lambs will be removed from the ewe for a period of 4 hours which may cause distress to the ewe and lamb but impacts will be minimised by allowing the ewe to have constant visual and touch of the lambs during this time.

Animal Care

Care should be taken to ensure lamb survival is not affected by measuring milk yield. Lambs will be observed and if milk production is limiting, the milk produced by the ewe will be hand fed to the lambs following measuring production.

Ewes and lambs will be handled quietly. Ewes should be observed after the procedure to ensure they return to their lamb, allowing the lamb to suck and ingest milk/colostrum

Pain Relief

None required

Reuse and repeated use

Samples may be collected from the same ewe up to once daily for research purposes, throughout lactation, which may be a period of up to 12 weeks (one sample involves 2 milking times four hours apart with lambs unable to suck during the 4-hour period). For teaching purposes, a new animal should be used for each sample, with the same animal only collected twice per day, and not more than four times per week.

Qualification, experience or training necessary to perform procedure

Demonstrator: Extensive experience in sheep handling.

Students: Experience in sheep handling. The technique should be clearly demonstrated before students attempt it.