CT scanning sheep

Recommended instructor to student ratio: 1:6. This is to avoid crowding the animal and space considerations.

Category
3. Minor conscious intervention

Objective
To effectively restrain sheep in a cradle and CT scan sheep, for example to compare body composition (such as fat, muscle, organ size), without need to euthanise sheep

Alternatives to animal use
There are no practical alternatives

Equipment
- Trailer for transporting animals to the CT scanner. If a large number of animals are being scanned consecutively, a second trailer may be used to hold and transport animals that have already been scanned.
- Portable yard panels to ensure animal cannot escape between removal from the trailer and being secured in the cradle
- A cradle suitable for restraining sheep and made of a material suitable for the CT scanner. Cradle includes straps to go over neck, shoulder and hips. See fig. 1 for an example
- CT scanner

Safety and Risk considerations
Enough personnel are available to catch and restrain the sheep, and personnel are strong enough to carry the sheep in the cradle into the CT scanner. Personnel are competent to handle and restrain sheep to minimise danger to self (e.g. ergonomic injuries) and sheep.
All personnel to exit the room during CT scanning to avoid exposure.

Drugs, chemicals or biological agents
No sedative should be required, however if it becomes necessary to sedate then a veterinarian will be contacted and sedative applied. Alternatively, the individual animal will be retired from the process.

Procedure
Sheep are loaded into a trailer for transport from the sheep yards to the VCC

If a large number of sheep are to be scanned, 2 sheep (not to be scanned) are loaded into a second trailer. This is the trailer that sheep will be loaded into after scanning. Having 2 sheep in the trailer already post-scanning will reduce sheep stress post-scanning.

Both trailers taken to VCC and parked in the bay outside of the CT scanning room. Temporary yard panels to be set up behind the trailer.

An individual sheep is caught and removed from the trailer and secured in the cradle, which is positioned within the temporary yard. Two people minimum are required for this procedure. The

first person catches the sheep and positions in the sitting position in the cradle and restrains the sheep by keeping downward pressure on the sheep, while the second person secures the straps over the sheep.

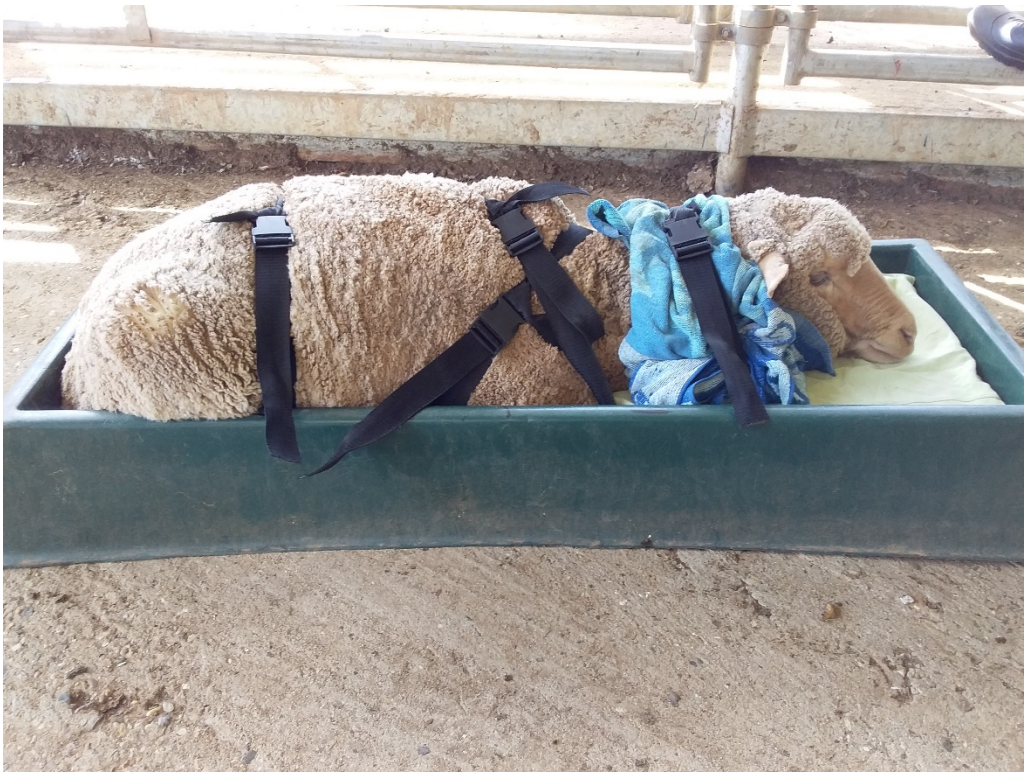

Figure 1. Sheep restrained in sitting position in cradle with straps over neck, shoulders and hips

Cradle with sheep carried into room and placed in CT scanner.

All personnel exit room. Scanning commences

Once scanning is complete, cradle with sheep is carried back outside to the temporary yard. Straps removed and sheep loaded into the trailer.

Once all sheep have been scanned and loaded into the second trailer, sheep are returned to the sheep yards.

Impact on wellbeing of animals

Procedures are low impact, non-invasive and are considered normal management of sheep. Sheep will be handled quietly and impact monitored by visual assessment. Handling by experienced operators will minimise that impact.

CT scanning is a routine diagnostic procedure. Time in CT scanner will be kept to minimum required for scanning as advised by the operator.

Animal Care

Animals will be observed for signs of distress during the procedure. The procedures will be conducted quickly to allow release of animals from the crate, minimising distress. These procedures have no after effect, but animals will be observed immediately after release to ensure normal behaviour.

Pain Relief

Not needed. The procedure should not cause pain.

Reuse and repeated use

Animals are usually measured at periods no more frequently than once weekly, depending on the needs of the investigation.

Qualification, experience or training necessary to perform procedure

Competence in handling small ruminants.
A suitable operator is required to operate the CT scanner

References and relevant links

< List references and relevant web links if appropriate. >