Factsheet 5

MEAT & LIVESTOCK AUSTRALIA

Infrastructure for goats

Appropriate infrastructure plays a critical role in optimising the productivity and efficiency of successful commercial goat enterprises, as well as ensuring the welfare of both livestock and handlers. While goats are in many ways similar to cattle and sheep and infrastructure can often be shared, there are key aspects of goat infrastructure which should be considered when seeking to optimise a goat enterprise. This factsheet will help you understand what the important factors are when considering infrastructure within a goat enterprise.

Yards and handling facilities

There are a number of factors to consider when building a set of yards to handle or contain goats such as efficiency, economy of construction, the size and mix of your enterprise, the existing facilities, the type and number of goats to be handled at any one time and the husbandry or management tasks to be undertaken using the handling facility.

The design of infrastructure should also accommodate goat behaviour, which can differ significantly from sheep. This may involve modifying existing sheep infrastructure to include another rail to make the yards higher, adding weldmesh across existing rails and removing items which may be used by goats to climb over fences.

Key points

- Water supply and fencing are the greatest infrastructure costs for most goat production enterprises, particularly those in the rangelands.
- Productivity gains, through increases in carrying capacity, increases in turn-off weights and turn-off rates due to better grazing management, are required to support the capital expense of infrastructure.
- Total grazing pressure (TGP) grazing systems, which manage grazing pressure of both livestock and vermin (kangaroos and wild goats), allow better control of pasture growth, sustainable grazing and the opportunity to increase carrying capacity.
- Sheep and cattle yards can usually be modified to handle goats depending upon the processes which need to be undertaken.
- Welfare of both the goats and handlers should be the first priority in the design and construction of yard and handling facilities.
- Infrastructure such as yards and fencing needs to be designed to accommodate goat behaviour, which can differ significantly from sheep.

Making yards higher or adding extra rails can help make them ‘goat proof’

Adding weldmesh to rails can help keep yards ‘goat proof’

Yard designs should encourage easy flow of goats with a minimum of pressure. Goats will pack together and smother so make sure they remain standing when being worked in small yards or handling races. If a yard looks over filled with goats then it’s too full - reduce the pressure.

Make sure goats remain standing when working in yards or races

Sometimes it may be practical to have a set of portable yards in addition to, or instead of, permanent yards.

Vehicle access is important and track width and turning circles should be of sufficient size to allow large vehicles easy passage in and out of the property.

Good vehicle access and loading facilities are important considerations

Workplace health and safety should also be considered when handling goats, particularly with rangeland mustering.

Handling facilities should allow routine management treatments such as drafting, live weighing, drenching or foot trimming to be done with a minimum of stress to both the handler and the animal.

Handling facilities should consider goat behaviour, the handling activity to be undertaken and handler and animal welfare

Water supply

"Watering points are an integral part of any rangeland grazing management plan. The location and number of watering points assist in grazing control as well as providing trapping opportunities for mustering of goats. As goats generally graze within a 3-5km grazing radius most of our water points are spaced 6-10km apart. This ensures that grazing stock spread out and utilise the total grazing area rather than eating out the area around the watering point"
J McClure, Kallara Station, Tilpa, NSW

Water quantity and quality are key considerations in livestock water supply systems.

The water intake of goats varies with the dry matter content of their feed intake, for example lush winter pasture, dry summer pasture, rangeland grazing or salt bush.

Table 1: Daily water intake and quality requirements for goats

Class of stock	Daily intake	Maximum salinity tolerance
Weaners	4-6L/day	7,000 ppm total salts
Dry goats	5-7L/day	14,000 ppm total salts
Lactating does	7-10L/day	10,000 ppm total salts

Goats are better adapted to limited water intake and short-term water shortages than sheep or cattle.

Being herd animals, goats tend to congregate around water at particular times of the day for 4-5 hours before moving off to feed or camp. The drain on water at this time is greatest. In planning water supplies, think about the amount of water required to supply a mob over this 4-5 hour period.

For example, if the largest mob a particular paddock will carry in summer is 400 dry does whose average water intake is 7L/hd/day (assuming summer temperatures are not greater than 40 degrees C), peak demand will be 400 x 7L = 2,800L to be supplied in four hours (240 minutes).

The required flow rate is 2,800L/240min = 11.7L/min during the peak demand. In the case of piped water, ensure the pipe diameter and pressure is sufficient to supply this amount.

Ensure there is sufficient pressure to support peak demand on water

The location of watering points is also important in managing grazing pressure and carrying capacity in the rangeland environment. Goats will generally graze within four kilometres of a watering point while sheep and cattle will graze up to six kilometres from water. If watering points are further than eight kilometres apart, pasture utilisation by goats will be reduced between the watering points.

Watering points can be used to trap and muster goats in the rangelands

Watering points can also provide an opportunity for trapping goats for muster which can significantly reduce the labour requirement within an enterprise.

Fencing for goat control

"A fence which will contain a mob of non-wool breed or crossbred sheep will contain goats"
P Lauterbach, Peake, SA

Fence types suitable for goats will vary depending on the location, the grazing pressure and the purpose of the fencing.

In designing and maintaining goat fences, it is important to remember goats are intelligent animals and will develop habits based on their experiences. If goats are exposed to poor structural fences, especially when they are young or the first time they are contained (in the case of harvested rangeland goats), they will tend to treat all fences as if they are poor and look for opportunities to escape. Similarly, if goats are exposed to poor electric fences, they will tend not to respect electric fences and again, look to escape. If, however, goats are exposed to sound structural fences and good electric fences carrying sufficient current to deter goats, they will tend to habitually respect fences.

Establishing training paddocks for impressionable goats (bought in, young or recently harvested) can help with the ongoing management of the herd. Such goats can be confined within small, highly secure paddocks for a period of time to encourage them to respect fences. This is particularly useful when introducing goats to electric fencing.

An important factor in maintaining the efficacy of fences is grazing management. Cattle, sheep and goats will all pressure fences when feed within their paddock is scarce. Managing feed to prevent a feed shortage is important in minimising the pressure goats will place on a fence and resultant damage requiring maintenance.

Total grazing pressure (TGP) fencing is increasingly becoming a feature of the rangeland landscape and is being used by goat producers to:

- Control grazing pressure to allow regeneration of more productive botanical species or to spell pastures and browse to allow plants to enter a productive growth phase.
- Contain goats for more effective control of their grazing management.
- Exclude pest species, predators and native species (kangaroos) from grazing areas to allow increased utilisation by livestock grazing.

Fence design for TGP management incorporates fencing for exclusion and fencing for containment through conventional plain wire, hinge lock, electric or combinations of the conventional and electric fence construction.

Predator exclusion fences incorporate either hinge lock, netting or 10 line plain wire (up to 2,400mm in height) to exclude kangaroos, wild dogs and goats.

TGP fencing typically incorporates hinge lock (7/90/30 or 8/90/30) plus plain or barb top wires, 6-7 line plain wire with a top barb (1,100-1,800mm) or seven wire electric fencing with three live electric wires (Weston fence design). These fences are generally erected as boundary fencing to contain or exclude goats and other grazing animals. The cost will vary significantly depending upon the design of the fence.

Well constructed hinge lock fences with and without a top barb

Internal fencing to confine and manage goats within grazing areas is generally hinge lock (or similar), six plain wires or a four-line electric.

Fencing is expensive, particularly in rangeland areas where long distances are to be fenced. The cost of fencing needs to be considered against the management benefits fencing can deliver through productivity and sustainability gains.

Consideration should also be given to the level of maintenance required by particular types of fencing and how compatible this is with the management and labour programs adopted by the enterprise. For example, while electric fencing may be cheaper to erect, this may require a greater maintenance input which may not suit particular operations. Under such circumstances, a structural fence, with higher establishment costs but a reduced maintenance requirement, may be the preferred option.

Electric fencing can be effective in managing goats

Fencing capital expenditure and maintenance costs can be applied across the total livestock system where cattle, sheep and goats are being co-grazed and this is an important consideration when comparing the cost of production of different enterprises. Fencing and infrastructure should be planned from the outset to be adaptable and able to be utilised in different enterprises wherever possible.

More information

- *Going into Goats: Profitable producers' best practice guide*:
  - Infrastructure especially yard and fence design: *Module 4 - Infrastructure*
  - Water facilities and access: *Module 7 - Nutrition*, page 2
  - Depot facilities: Module 11 – *Goat depots, Toolkit 11*
- *Factsheet 1: Profitability in goat production*
- *Factsheet 4: Understanding goat behaviour and handling*
- *Factsheet 6: Managing carrying capacity*
- Goat Notes B4: *Fencing for Goats.* Access online: www.acga.org.au/goatnotes/B004.php
- Leading Sheep - *Exclusion Fencing Case Studies.* Access online: www.leadingsheep.com.au/2013/06/fencing-case-study-example/
- *Goat fencing.* NSW Department of Primary Industries. Access online: www.dpi.nsw.gov.au/__data/assets/pdf_file/0005/178502/goat-fencing.pdf
- *Report for Western Catchment Management Authority, Economic Research Report No.47,* NSW Department of Trade and Investment, Regional Infrastructure and Services, Trangie, November 2011.

MEAT & LIVESTOCK AUSTRALIA
Meat & Livestock Australia
Level 1, 40 Mount Street
North Sydney NSW 2060
Phone: 1800 023 100
www.mla.com.au
July 2017