

LESSON 1 DOMESTICATED SHEEP IN HUMAN HISTORY

The needs of our woolly companions are more complex than we realise. They have intelligence which is repeatedly underestimated. Don't misjudge their ability to comprehend us. The apparent senseless behaviour of sheep comes from their natural position as a prey animal and their innate flighty behaviour is fear-based, it is not necessarily mindless. Sheep should be valued the same as any other animal however humans have significant practical reasons to raise sheep. For most of us, their uses outweigh the benefits of keeping these gentle animals simply as pets.



Types of Sheep

Sheep are bovine animals (as are cattle, antelope and goats) which belong to the genera 'Ovis'. There are five living species in this order as follows:

Ovis aries

This species name was given by Linnaeus in 1758 and is the preferred species name for what are commonly known as Domestic Sheep, Red Sheep or Mouflon. There are over 10,000

distinct breeds developed within this species that are diverse in size and many other characteristics. There are also various old species names given to sheep which are now redundant, including: *Ovis musimon* (from 1762) *Ovis orientalis* from 1774 and *Ovis ophion* from 1841. Some experts consider the domestic sheep's wild ancestor to be a separate breed known as *Ovis orientalis*, and identify two subspecies: *Ovis orientalis orientalis* (the Mouflon Group) and *Ovis orientalis vignei* (the Ural Group).

Suggested Tasks: ▼

Throughout this course you will be provided with suggested tasks and reading to aid with your understanding. These will appear in the right hand column.

Remember: these tasks are optional. The more you complete, the more you will learn, but in order to complete the course in 20 hours you will need to manage your time well. We suggest you spend about 10 minutes on each task you attempt, and no more than 20 minutes.



Ovis canadensis Big Horn Sheep Colorado

Ovis canadensis

Commonly known as Bighorn Sheep, from the Rocky Mountains in North America, rams of *Ovis canadensis* can reach 125 kg.

Ovis dalli

Commonly known as Thinhorn Sheep, from Alaska and Northern Canada, rams of *Ovis dalli* can reach 110 kg.



Ovis dalli

Ovis ammon

Commonly known as Argali sheep, from central Asia, these are the largest species at up to 125 cm at the shoulder and 185 kg.

Ovis nivicola

Commonly known as the Snow Sheep, or Siberian Bighorn, this species is endemic to Northern Russia. It can weigh up to 120 kg.

Sheep in History

Throughout recorded history, sheep are known to be one of the earliest animal species domesticated by humans. At about 10,000 years ago, sheep provided humans with textile products, clothing for warmth and meat for consumption. Sheepskins were also the original product utilised from animal carcasses for parchment. The various uses of wool came some 3,000 years after their initial domestication.

The mostly docile and social nature of sheep made them ideal for domestication. Ewes and wethers (castrated male sheep) were manageable in size for the average farmer to both handle and house. Depending on the breed, rams sometimes may have been somewhat more challenging to handle, as you might expect. Stubborn and strong, a butt from a frightened or protective ram would have caused injury. Nonetheless, their relatively high and successful reproduction rates was an added advantage to the earliest farmers. Since then, humans have continued to produce sheep to our advantage.

Science in Sheep Farming

Sheep and wool research is conducted mostly in university research institutions or independent laboratories. Research relates to areas of economics, genetics, biochemistry, nutrition, wool metrology (objective measurement of wool properties), animal welfare and animal health.

In wool metrology, much of the scientific research is concerned specifically with wool follicles and the biology of fibres which results in wool measurements. In turn, the results of those measurements affect sheep selection in breeding for performance and productivity gains by farmers. Cloning technology in agricultural science means offspring have 99.8% of the genetic identity from carefully selected adult animals. The ability to control the genomes of the offspring also supports reproduction of farm animals such as sheep with a remarkably high value. Cloning farm animals is a highly popular new biotechnology service in the agriculture industry in many countries.

One well-known example of sheep used in genetics research is from the successful birth of Dolly the sheep in Scotland in 1996. Dolly was cloned however she was not cloned from embryonic cells like had been previously successful at that time in cows, frogs and mice. Instead she was cloned from an adult sheep cell. The significance is that a single adult cell, which is specialised in its function, provides the DNA necessary to make an entirely new organism with approximately 200 specialised cells. As cloning technology improves, so do the options available to researchers such as zoologists and geneticists. With enough advances in technology, we may eventually have the opportunity to use cloning as a way to protect and grow endangered populations.

Sheep Farming is No Easy Feat

Sheep enterprises can be divided into specialities of wool production, prime lamb production and breeding studs for flock replacement. The success of any enterprise will depend mostly on the suitability of the breed selected and, of course, the husbandry skills and knowledge of the farmer. Sheep breeds differ greatly. Understanding this is the foundation for a thriving enterprise in sheep farming. Husbandry skills can be learned, however there are basic initial considerations for those entering or expanding any sheep farming enterprise:

- Is there enough space available for the numbers you want to run?
- Is the pasture green and the ground not overly moist?

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Suggested Tasks

Dolly the sheep represented a significant advancement in biotechnology and genetics in the mid 1990's.

Search online for information about Dolly the sheep. Spend 10-15 minutes researching how Dolly contributed to science and agriculture.

Ask someone you know if they think it was an ethical move for scientists to create Dolly? Ask why they think as they do.

You may need to explain the scenario.

- Is grazing land cleared - free of shrubs, poisonous weeds or plants?
- Is there access to holding sheds and pens to protect vulnerable lambs, and sick or injured animals?
- Is the land securely fenced to keep the sheep in and predators out?
- Do you have sufficient time, skills and resources needed to care for the sheep effectively?
- Can you financially afford the associated services such as shearing or veterinarian services?



to different purposes and there are several breeds which can be used for both wool and meat. Although all sheep can produce milk, non-dairy sheep produce very little milk compared to specialised breeds.

Some hobby farmers keep sheep for their own use. Others sell sheep products to niche markets such as meat sheep for buyers who are looking for a “farm-to-table” supplier. If you’re hoping to turn a profit off your wool, remember that wool must be of the highest quality, and many sheep require shearing expertise. Your herd must be large enough to produce enough wool to sell, and most hobby farmers are not likely to produce enough wool to make any serious money from it. If you are going to sell wool, smaller producers can also sell to niche markets such as local spinners and weavers. If you’re committed to high quality wool and are willing to “jacket” your sheep by putting sheep-sized jackets on them to protect their fleece, you may also be able to sell to specialist garment manufacturers.

Some hobby farmers add sheep to their land for pasture rotation because they graze lower down than larger herbivores, like cows and horses. Sheep do a great job cleaning up paddocks after cows and horses have been through, readying it for rest. Their feet (cloven hooves) are smaller than the hooves of cows and horses and so work well at flattening out the land which has been rutted. It’s a common soil management procedure on grazing land to run both sheep and cows together.

Horses and sheep are often run together to help in parasite control. Multi-species grazing like this lessens

Sheep are a great asset to hobby farms, providing a ready supply of meat, wool and milk. There are hundreds of sheep breeds in Australia and more than a thousand worldwide, though there are only a handful or breeds suited to the smaller land plots of a hobby farm. Before selecting a breed, it’s necessary to think about why you’ll be keeping sheep. Different breeds are suited