

Introduction to Goat Husbandry

Lesson Aim

Discuss the significance of goats, the characteristics that differentiate them from other domesticated animals and the scope and nature of goat industries.

INTRODUCTION AND HISTORY

The goat is a member of the family *Bovidae*. The goat specifically belongs to the subfamily *caprinae* and is closely related to the sheep.

Goats are categorised as an herbivorous mammal and are one of the oldest domesticated species.

Neolithic farmers are known to have herded wild goats to provide them with milk and meat and also bone, sinew and hair for making tools, clothes and building.

The first area of captivity is known to be in the South-East Asia region about 8000BC. Before this time, goats were only known to be feral.

Biological Terminology

Goats are ruminant mammals. They possess a four-chambered stomach, which consists of the rumen, the reticulum, the omasum, and the abomasum. Similarly to other ruminant mammals, they have two weight bearing toes on each foot. Female goats have an udder, which consists of two teats. Most goats naturally have two horns of different shapes and sizes depending on the breed.

There are some breeds that are 'polled' (genetically hornless) and some may have their horns removed very soon after birth. This is a common management practice in commercial dairy goat herds to prevent injuries occurring to the animals themselves and also their human handlers. Both male and female goats have 'beards' and some breed also have 'wattles' dangling down from each side of the neck.

Female goats over two years of age are referred to as **does** or **nannies**, whereas male goats (over two years of age) have different names, depending if they are "castrated" (**wethers**) or "entire" (**bucks** or **billies**), and their offspring are called **kids** (under 12 months old). A **goatling** is a doe over 12 months and under 2 years old, whereas a **buckling** is a male of the same range of age.

Uses for Goat and Goat Products

Domestic goats are one of the most useful animals to have as they are easy to look after and feed.

As a domestic farm animal they can be used to produce a variety of products, such as:

- dairy (milk, butter, yoghurt)
- meat
- leather
- wool (fleece)
- soaps, body and hair care products

In Europe and North America, intensive, high-yielding dairy goat herds are common. In Afghanistan cashmere goats are kept on rangelands for their meat and fleeces.

In Africa, subsistence farmers commonly keep dual-purpose goats on their smallholdings for milk and meat. In Australia, goats are farmed and exported for meat in large volumes. Feral goats are commonly run alongside sheep and beef herds in New Zealand to help manage weeds and scrub in pasture. In the 1900's goats have become very popular as pets, more commonly in Europe and North America.

SAMPLE

The table below shows a steady increase in the world population of goats between 1990 and 2008. China, India, Bangladesh and Pakistan have the largest populations of goats and account for almost 45% of the world's total goat population.

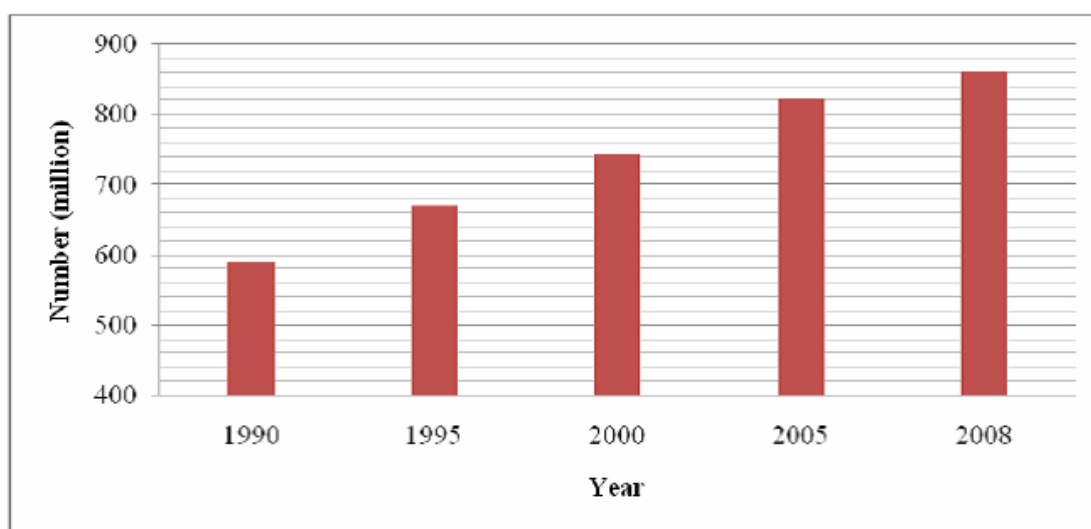


Figure 1: Number of goats in the world during the period from 1990 to 2008 (FAOSTAT, 2008)

The table below shows amounts of goat meat produced by the top ten producing countries in the world as well as the number of animals slaughtered and the average carcass weight. The top ten countries are all either in Asia or Africa, which demonstrates the importance of goat meat to these developing countries.

Country	Total meat (million MT)	Number of animals slaughtered (million)	Average meat produced per animal (kg)
China	1.8	133.3	13.7
India	0.5	47.8	10.0
Nigeria	0.3	21.3	12.7
Pakistan	0.3	15.4	17.0
Bangladesh	0.2	30.0	7.0
Sudan	0.2	14.5	13.0
Iran	0.1	7.6	14.0
Indonesia	0.1	6.6	10.0
Ethiopia	0.1	7.6	8.5
Niger	0.1	4.4	12.0

Figure 2: Goat meat production by the top ten world producers (FAOSTAT, 2008)

Australian goat meat and live goat exports were worth approximately \$136.3 million during the calendar year 2011. In that year 63,663 live goats were exported, worth approximately \$8.5 million.

Goat milk production is another huge worldwide market. Figure 3 below shows that the top milk producer is India. Spain, France and Greece also contribute significant amounts of goat milk to the worldwide market.

Country	Goat Milk production (million MT)	Number of dairy goats (million)	Milk produced per dairy doe (kg)
India	4.0	30.2	132.5
Bangladesh	2.2	27.1	80.0
Sudan	1.5	N.A.	-
Pakistan	0.7	4.9	141.9
Spain	0.6	1.4	422.3
France	0.6	0.8	703.8
Greece	0.5	4.1	123.9
Iran	0.4	13.7	29.9
Somalia	0.4	6.6	59.7
China	0.3	1.4	194.8

Figure 3: Goat milk production by the top ten world producers (FAOSTAT, 2008)

Mohair and cashmere is one sector of the goat industry that has internationally established markets for the fibres. Prices for fleece may vary considerably from year to year, due to fashion trends and market economies. Mohair fibre is regarded as high quality and frequently used in luxury clothing. Fibre price is dependant on fibre diameter, length and occurrence of colour. Kid mohair generally receives a higher price compared to the coarser adult fibre. Shearing is carried out twice a year when length exceeds 10cm.

As of 2009, world output of mohair was estimated at around 3000 tons a year. South Africa accounts for 60% of total production. South African mohair is generally exported raw or semi-processed to textile makers in Europe, the UK and the Far East.

Cashmere goats produce a coarse low value fleece, but have an under coat of fine high quality down - it is this down which is called cashmere. Price obtained is governed by colour and fibre diameter. Shearing is carried out once a year.

China has become the largest producer of raw cashmere and is estimated to produce 10,000 metric tons per year. Mongolia produces somewhat more than 3,000 tons, while Afghanistan, Iran, Turkey, and other Central Asian Republics produce significant but smaller amounts. Annual world production is estimated to be between 15,000 and 20,000 tons.

Goat Breeds Overview

Nowadays, there are over 300 different breeds of goats. Goat breeds fall into a number of general categories. They are generally classified by their main use e.g. dairy, meat, fibre/fleece or companion animals.

Dairy goats may be of 4 different breeds:

- Saanen
- Toggenburg
- British Alpine
- Anglo-Nubian

Examples of specific meat breeds:

- Spanish meat goat
- South African Boer
- New Zealand Kiko

Examples of specific fibre/fleece goats

- Cashmere
- Angora
- Pygora

Examples of companion goat breeds

- Pygmy
- Kinder

Australia has created its own experimental breeds being the All Brown goats breed and, since 2001, the Australian Melaan (the All Black goats breed).

There are also many cross breeds, including crosses between dairy goats and fleece goats.

Introduction to Farm Systems

Goats, like any other production animal can be farmed in different ways. Historically, goats were kept in small herds and wandered freely over pasture or grazing land, and were looked after by a shepherd. This is an extensive way of farming where labour requirements are small and the animals are kept in a very natural way.

Modern day, large commercial goat enterprises producing meat and/or milk are more likely to farm in an intensive or semi-intensive way. The goats may be housed in large numbers and be provided with food and water with little or no access to pasture outdoors. Semi –intensive systems usually combine housing with some free access to pasture.

Whatever management system is used, goats need to be provided with adequate shelter, food and water and be given adequate opportunities to exercise themselves.

Keeping a Buck

Bucks are strong, powerful and sometimes aggressive animals. The decision whether to keep a buck as part of the herd should be carefully considered. If you have decided just to keep a couple of goats as pets then a buck may not be the easiest or most sensible type of animal to have. If you are keeping a couple of does and think that you may like to breed from them, then it is sometimes easier and safer just to use the services of a local stud buck, where you take the does to be mated at the appropriate time, rather than keeping your own buck at home.

If bucks are kept, then it is important that they are kept separately from the does in the herd. If not, the owner will have no idea when to expect kids and the pregnant does cannot be cared for appropriately. A goat kid can become fertile at 7 weeks of age, although this really is too early for them to be bred. Entire bucks and does over 8 weeks of age should not be kept together because a young buck can successfully mate with his litter mates and even his mother at this young age!

Particularly strong housing and fencing is required to keep the buck under control. Bucks can be particularly vocal so you may need to consider where on the property they are housed – not too close to the neighbours!

Bucks have particular behaviours and characteristics that an owner needs to be aware of and be able to deal with. As they grow older, they generally become more aggressive to assert their dominance within the herd. This aggression can be aimed at the other goats and also to their human handlers as well and is particularly apparent when does are in season. Careful and safe handling of a buck during this time is essential.

As bucks mature and prepare to go into the breeding season they begin to habitually spray their urine on their front legs and faces. They develop a very strong smell which easily transfers to the other goats in the herd and can even taint the milk produced by the does; another reason why bucks should be kept separate from the rest of the herd.

Bucks have various behaviours that they employ to encourage the does to want to mate with them. They can sometimes also exhibit these behaviours towards other male goats and also to their human handlers. It is not unknown for bucks to develop ‘crushes’ on their human handlers and to attempt to mount their handlers when they aren’t looking!

The buck may lower his head and flap his tongue towards the doe. Tongue flapping can sometimes be accompanied by pawing, where the buck paws at the side of the doe with a front leg. These are signs that the buck is ‘in the mood’ to mate and appropriate care should be taken when moving him around or handling him.

The decision to keep a buck should not be taken lightly. It is important that you have appropriate housing, fencing and handling skills to cope with a large, strong and potentially aggressive animal.

Truths and Myths about Goats

‘Goats smell’

In general, female and neutered male goats do not smell. Entire males, particularly in the breeding season can smell offensive but only to humans. Female goats find the smell very attractive! If a goat smells and it is not

breeding time then management issues may be to blame.

'Goats are dirty'

Goats are actually fastidiously clean! They keep themselves very clean and are not keen on getting wet. Again, if goats are visibly dirty then management issues may be the cause.

'Goats eat everything'

Goats are very inquisitive creatures and as they don't have hands, they use their mouths to investigate novel objects. They are actually quite fussy eaters and prefer to browse on trees, shrubs and weeds. They will not eat washing or tin cans and are more than likely investigating a novel object with their mouth rather than attempting to eat it!

'Goats are destructive'

Goats are naturally a herd animal; they prefer to live with other goats and are generally unhappy if forced to live in solitude. A goat kept on its own may well become destructive and try to escape by breaking through fences and gates, but this is only to try and find other members of the herd and it is not just being destructive for the fun of it.

GOAT PSYCHOLOGY

Social Structure

Goats are naturally a herd animal and a solitary goat may need company of a human or other animal. A feral goat herd may be anything from 1 to 100 goats but on average, it will only be made up of four goats.

Herds are led by a dominant female and a dominant male. The dominant female or 'queen' generally leads the way when the herd is foraging. She will also get the most comfortable sleeping spot and be first in line for any food that is administered to the herd. She will also stand up to any predators and protect the rest of the rest of the herd. Her kids are by birth, naturally high up in the herd pecking order.

The dominant female is most likely to retain her position until she dies or until she becomes too old and infirm and another doe challenges her position and wins.

Male goats tend to be dominant according to age, up until six years old after which strength and dominance can decline. Horns and body size are as important as age in determining a dominant goat. He will mate with the females when they come into season and he also protects the herd from predators. Again, he is most likely to retain his position until he dies or until he is challenged and beaten by another buck.

Goats are more aggressive and inquisitive than sheep and tend to demonstrate dominance within a social grouping more than sheep. Goats display their dominance by lowering the head and pointing their horns at the subordinate animal. If animals are equal or undetermined dominance they will lock horns repeatedly until dominance of one animal is established.

When a new goat is added to the herd fights may take place until the new member has established their level in the pecking order. It is impossible to stop this fighting and they need to be left to their own devices to work things out. It is also common for a doe who has just kidded to try and 'upgrade' her pecking order in the herd by fighting, in order to secure a higher status for her kids. Again, it is difficult to prevent this from happening and the situation should be left to run its course.

Goats groom themselves by scratching the neck and head with the rear feet, and by licking other parts of their body. They are sociable animals and also like to be petted by humans.

SET READING

Refer to and read any reference material you have access to that relates to the aim of this lesson.

This may include any of the following:

- Books in your own possession, or which you find in a library

Assignment 1

Question 1

Give an example of how an understanding of goat behavior might affect the way you manage a goat on a small holding of no more than two acres. Write up to 500 words.

Question 2

Report on your set task.

This may cover answers to such questions as the following:

What do goats sell for in your country?

What breeds are available?

Write no more than one page.

Question 3

Discuss your understanding of bucks and dominance behavior. Describe at least 2 different ways in which bucks may assert or display dominance. Write up to 500 words in total.

Question 4

Briefly explain the history of goats and goat keeping in your country. Write up to 600 words.

Congratulations on finishing this section.

[Now start the next section on the next page](#)