Zambia Agribusiness Society

Goat Farming as a Business

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Introduction

Goat farming in Zambia is set to grow in importance with huge demand from Saudi Arabia, which desires to import one million Zambian goats annually. But at the moment, Zambia only has about four million goats - and that's not enough to meet the new demand.

Goats don't require a high initial investment in comparison to other livestock in Zambia. This is great for those contemplating to go into Goat farming as a business or those Goat farmers that wish to expand their herds; to take advantage of the business opportunity that Saudi Arabia presents.

Goats are hardy and easier animals to look after, which can survive under harsh environments. Goats are reared under extensive farming conditions, mainly for meat and to a lesser extent for milk. To some extent productivity of these goats is low due to various factors such as high kid mortality and lack of good animal husbandry practices. Goats also provide skins of commercial importance and manure for gardens (and crop fields). In other parts of the world goats are kept for their wool (mohair).

Human populations are growing, and creating a significant and increasing demand for additional animal protein foods. The goat can play an important role in meeting these demands. This calls for farmers to put value in their goat enterprises by shifting from subsistence production to commercial production. It is easier to increase the population of small ruminants (goats and sheep) than large stock. In economic terms the opportunity costs are low for goat production.

"The goat was probably the first animal to be domesticated around 9000 - 7000 B.C. This long association between goat and human indicates the variety of functions the goat can provide."

This write-up has been written to provide information to farmers who are in need of knowledge to start a goat enterprise on a commercial basis, and goat husbandry. The information is not completely comprehensive, but combines experiences from authors and farmers.

Types of Breeds

The vast majority of goats in Zambia are indigenous breeds and these are mainly found in Southern, Central and Eastern provinces.

- Average birth weights of kids range from 1.5kg to 2.5kg (up to 3kg)
- The indigenous breeds are well adapted to their respective environments.

Other breeds found in Zambia include exotic types, the Boer goat (mainly for meat) with a mature weight of 65kg. The Saanen, Toggenburg and Alpine goat is for milk production and produces an average of 3.5litres of milk per day. There is also the Angora goat for mohair production, and the Kalahari, bred for meat.

Management of Does and Bucks

Management of Does (Females)

Young females should be mated as from the age of 12 months. Good nutrition ensures that the animal grows faster and ready for mating. It also increases fertility and litter size. If young animals are mated when they are very young (less than 8months) they will remain stunted the rest of their life and will have poor reproductive performance. A well-managed female can produce kids for about eight years. Pregnancy in goats lasts between 145 – 150 days (five months). A mature female can only mate when she is ready (on" heat"). The heat period lasts between 24 – 26 hours. During this time she should receive the male. The presence of the male in the flock triggers heat. Coming on heat also depends on the nutrition of the animal. Signs, which may indicate that the animal is on heat:

- *Shaking of the tail*
- *Mounting other animals*
- *Seeking males*
- *Continuous bleating*
- *Mucous discharge from the vulva*

Pregnant females should be separated from the main flock for close monitoring, at least two months before kidding. This also reduces the loss of kids. At this stage they will need quality feed supplements to enhance feed reserves in the body. This will ensure a healthy kid and enough milk.

Management of Bucks (Males)

- Male goats are known to be fertile at an earlier stage than females. In such circumstances males have to be raised separately from females to avoid unplanned mating.
- Bucks have to be kept in good condition and fed at all times.
- For breeding purposes, bucks with horns have to be used, so as to avoid haemophrodism (*bisexual*), which comes with the use of hornless/polled bucks.
- Bucks can be selected at an early age. A male kid born weighing about 2.5kg or more kg could be selected for future breeding. Heavier and fast growing bucks should be selected. Select bucks from twin births so as to increase the chances of twinning.
- Males not suitable for breeding should be castrated or culled.

Breeding and Mating Systems

Breeding Systems

The breeding system is an important aspect of goat production in terms of meat and milk production. It has a significant influence on immediate and long-term flock productivity. There are two systems of breeding:

- **Crossbreeding**. This involves the mating of different breeds to combine characteristics found in the different breeds and to make use of the "hybrid vigour". In simple terms this means that the offspring performs better than the

parents. Crossbreeding is one of the methods used in meat and milk production. It can be disastrous, if not done properly, leading to the disappearance of the existing genetic pool.

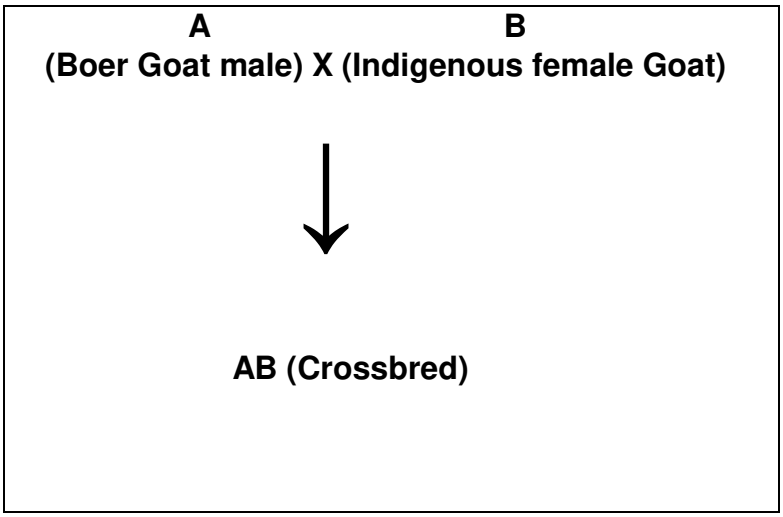

Table 1. Showing how crossbreeding is done

- **Pure Breeding**. In this system purebred females (does) are run with purebred males (bucks) to maintain the desired traits (colour, size, meat and milk qualities) of that particular breed.

Mating Systems

It is important for farmers to know the different mating systems that can be applied to their breeding flock.

- **Random Mating**. Is letting any number of bucks to run with a flock of females uncontrolled.

Advantages of Random Mating

1. Simple
2. Cheap
3. Goats can kid any time, therefore a farmer can sell any time.

Disadvantages

1. High risk of inbreeding
2. High risk of spread of diseases.

- **Assortative Mating**. Is putting the best females to the best buck. This is better than random mating

Advantages of Assortative Mating

1. High quality breeds
2. Maintains genetic base

Disadvantages

1. Unavailability of appropriate breeding stock
2. Difficult to implement in communal setups
3. Lack of technical skills, including records

Selection

Selection is a process of choosing the animals with desirable characteristics to be parents of the next generation.

Types of Selection

There are three types of selection:

- **Mass Selection.** Select animals with traits that are highly heritable. Target the individual animals e.g. best performing male is mated with the best performing female.
- **Family Selection.** Consider pedigree, sibling or performance of the entire family. Select traits that have low heritability.
- **Culling.** The removal of unproductive animals (old goats, animals with poor mothering abilities, poor reproductive performance, and animals with chronic sicknesses) from the flock.

Mating Ratio

In a controlled mating system:

- A male goat should run with females for 36 - 42 days. The reason being that a female which misses mating or coming into heat has a second chance within the mentioned period.
- A mature buck can be given 40 - 50 females to service. A young buck can be given 25 - 30 females. The effectiveness of both male and females depends on their body condition at mating.

Breeding Calendar

Below is a calendar that can assist the farmers to plan their flock breeding cycles. This helps the farmer to plan when to purchase inputs, market and to carry strategic operations.

Month											
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Selection of breeding stock	Mating starts (Putting the buck to the females for 42 days)	End of mating	Separate the pregnant and the non-pregnant	Supplement and vaccinate against pulpy kidney all pregnant females	Kidding starts	End of kidding	Care of kids	Vaccination against Pulpy kidney Weaning	Flushing of females	Flushing	Routine management of the flock; Dipping, dosing,

Table 2. Breeding Calendar

Kid Management

It is important to take good care of kids so as to reduce mortalities and improve kid growth rate.
A reduction in kid mortality translates into an increase in flock size and consequently the increase in offtake.

Kidding Seasons

- Kidding should coincide with times of abundant feed availability so that the does will be producing enough milk for the survival of the kid.
- This is usually in the December to February period.
- Sometimes goats may kid when the condition of the range is not good that is in winter. In such cases it is always important to make sure that the doe is adequately fed and is producing enough milk.

Kid Rearing

1. Preparation

- Kidding area should be clean with dry bedding (Stover or hay).
- The doe may be kept in the kidding area for a few days before kidding

The signs of a goat that is about to kid are:

1. *Restlessness*
2. *Separating itself from the flock*
3. *Discharge of mucus from the vulva*,

The advantage of separating pregnant does from the rest of the flock is to ensure undisturbed birth process and creates good bonding between the doe and kid.

2. At Birth

To allow bonding the doe must clean and groom her kids and remain undisturbed for two to four hours.
When to intervene in the birth process:

- When there is mal-presentation or difficulties in kidding.
- When the kid does not bleat or breathe because the doe failed to clean it, remove the membrane over the nostrils.
- Cutting the navel and application of iodine. Iodine application is not necessary if bedding is clean.
- When there is no bonding between the doe and the kid

3. Kid Housing

Keep the kids at home for the first few weeks to about one month (especially if the does have to travel long distances to browse and water). The kids require warm and dry conditions during their first four weeks of life. Housing should protect kids from heat, cold or even spread of diseases among kids.
An example of kid housing is the Kid boxes. The kid box has the following: made of wood or bamboo measuring, 500 - 600mm long, 400 - 500mm wide and 300 - 400mm deep. Bedding in the box should be kept clean and fresh. This makes it easy to detect diarrhoea. The kid can be kept in the box for three days and moved thereafter.

4. Feeding Kids

- Kids should suckle the first milk (colostrum-*cinsema*) within the first six hours of birth which is rich in antibodies that increase the immunity of the kid. If the

doe is not producing enough milk for her kid, fostering or bottle feeding is recommended.
- From about 3 weeks of age kids start nibbling grass and leaves. This is important for rumen development.
- They should be allowed to browse/graze from no later than one month. Effective grazing and browsing starts at 6 - 7 weeks.

5. Identification

It is important to have identifications for individual animals as this makes record keeping easier. There are a number of methods that can be used. These include ear tagging, ear notching and attaching names to animals. It is also a government requirement that all the animals have standard identification for traceability when exporting livestock and livestock products.

6. Health Care in Kids

- A clean environment will reduce the incidence of diseases. A farmer should always be on the lookout for diarrhoea & for respiratory problems - coughing or nasal discharge.

Prevention is better than cure!!!!!!!!!!!!!!!!!

- Make sure kids get colostrum within six hours of birth
- Make sure bedding is clean and dry
- Do not confine many kids in a small area
- Avoid damp conditions and excessive heat or cold
- Avoid overfeeding kids with milk as this result in scours.

To improve the general health of the kids ensure the following; to the whole flock:

- Dry sleeping places
- Clean drinking water (about 5litres per animal per day)
- Adequate feeding (3 - 5% of their body weight per day)
- Control of internal and external parasites

7. Predation

- Ensure that the kids are housed to protect them from being eaten by jackals, eagles and other dangerous animals.
- Do not allow kids to browse in dangerous places unattended

8. Weaning

- This should be done when the kids are hundred days old on average and weighing between 8 - 12 kilograms
- The most common weaning method in goats is complete separation of the kids and the does. It is however critical to vaccinate the kids and the does against pulpy kidney (PK) just before weaning as this stresses them, making them vulnerable to PK.
- Weaning enables the does to be in good body condition in preparation for the next mating season

9. Castration

This is the severing or cutting of the spermatic cords so that the animal cannot mate with the females. Castration improves the quality of meat by reducing the

characteristic smell of the entire male. There are three main methods of castration used in goats i.e. the rubber ring, knife/razor and burdizzo.

Conclusion

Proper care of both the female goat (doe) and the male goat (buck) is of paramount importance to ensure the success of the farm business.

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