

Overview of goat production in Thanhnhinh of Thanhhoa Province

Le Van Thong¹, Dinh Van Binh² & Nguyen Duy Ly²

¹Vietnam Livestock Company of Artificial Insemination Technology (VINALICA), ²Goat and Rabbit Research Centre (GRRC)

Summary

A survey carried through in 2003 showed that goat production in Thanhnhinh is mainly based on grazing and semi-confined systems. The existing breeds are Bachthao, Co and crosses between these two breeds. Production level is generally low and mortality is high and very few farmers control parasites, which is the most important reason for diseases. The management system is not well developed and demonstrations and training and transfer of improved technologies are necessary to improve the situation.

Introduction

Thanhnhinh is an area consisting of a range of limestone mountains and plains covered with shrubs located in the southwestern part of North Vietnam, bordering Thanhhoa and Ninhbinh provinces. Thanhnhinh has a monsoon climate, with a mean temperature of 23.3°C (15.8-28.7°C), 80% humidity, and 1775 mm rainfall/year. There are 4 seasons: winter, from December to February, with low temperatures and cold north-eastern winds; spring from March to May, with rain and high humidity; summer, from June to August, with high temperatures and usually heavy rains, and autumn from September to November, with moderate temperatures and less rain.

Goats have been raised for a long time in Vietnam in extensive, traditional systems with low productivity. However, recently more attention has been paid to goat production by local governments and number of goats and productivity are increasing. Consequently, goat production is beginning to play an important role in improvement of the farmers' income and contributing to poverty and hunger alleviation. The objective of this paper was to describe the present goat production system in Thanhnhinh, Thanhhoa province.

Materials and methods

A survey of the distribution of goats and goat management systems was done in Thanhnhinh zone (Bimson-Thanhhoa and Tamdiep-Ninhbinh) from March to December 2003. The data concerning the goat production were recorded at the goat station belonging to Thanhnhinh Livestock Enterprise. Some households keeping goats in Thanhnhinh zone (Bimson-Thanhhoa and Tamdiep-Ninhbinh) were also followed from 1996 to 2003.

Results and discussion

Results of the survey showed that the goat breeds in Thanhnhinh were mainly Co (68%), Bach Thao (11%), and cross breeds (Bachthao x Co) (21%). The total number of goats was 3 685. Goat production in Thanhnhinh is mainly based on natural feed resources such as pasture in hilly and mountainous areas. The goat houses were built with available materials and divided into two sections for different age groups: weaned and adult goats. The male was usually kept with the herd, and used for some years. The matings are not well managed and have resulted in inbreeding. Supplementation is not common, only on rainy days and for does that will be kidding. Management of the goats was based on primary experiences, and modern technology was not applied resulting in low productivity and low efficiency.

Breeds: The performance of the different breeds is shown in Table 1

Bachthao goats: The Bachthao breed is a dual-purpose breed (meat and milk type) that was developed in Vietnam (Ninhthuan province) a long time ago. The breed is believed to be a cross between Saanen, Alpine, Jumnapary and Beetal with local goats. Bachthao has long ears and short hair. The colour is usually black or black with spots and with white/brown stripes on the face. Both sexes generally have horns. Body weight at 9 months is 32.6-27.8 kg, average milk yield/day 848 ml and lactation length 149 days. This is the best goat breed with respect to reproduction performance in Vietnam. Bach Thao bucks can be used for crossbreeding with Co, creating F_1 (Bachthao x Co) to improve the performance.

Co goats: The Co goat is also called the grass goat (local goat). The grass goat is of very low weight and is usually brown and black in colour. The Co is a meat type, and is widely distributed around Vietnam. The average daily milk yield is low, around 0.5 kg. Age at first mating is around 7 months and the litter size is usually one kid.

F_1 (Bach Thao x Co): This crossbreed is a first generation crossing of Bach Thao males and Co females. They have moderate long ears, short hair and a long face. The colour is usually black, yellow or black and white with spots. Both sexes generally have short horns. Performance is higher than for the Co breed and the animals are normally used for meat production. Body weight at 9 months of age is 27.1-22.8 kg, carcass rate 48.2-44.6%, meat rate: 34.5-33.2%. Average milk yield/day is 664 ml and the lactation length 146 days. F_1 (Bachthao x Co) have a high reproductive performance, with first kidding at 360 days, kidding interval of 221 days and litter size 1.7 kids/litter.

Table 1. Performance results of Bachthao, Co and F_1 (Bachthao x Co) goats

Parameters	Bach Thao	Co	F_1 (BT x C)
<i>Body weight (kg) (Male-Female)</i>			
At birth	2.3-2.0	1.7-1.5	1.8-1.7
At 6 months	25.3-21.9	17.0-13.8	21.0-17.9
At 9 months	32.6-27.8	21.0-17.6	27.1-22.8
<i>Meat production at 9 months (Male-Female)</i>			
Carcass rates (%)	49.9-46.0	43.2-41.1	48.2-44.6
Meat rate (%)	36.7-35.0	32.3-31.8	34.5-33.2
<i>Milk production</i>			
Average milk yield (ml/day)	848	365	664
Lactation length (days)	150	110	146
<i>Reproductive performance</i>			
First kidding age of does (days)	366±7.2	356±9.3	360±8.5
Kidding interval (days)	219±5.4	226±6.4	221±7.2
<i>Litter size on average (kid/litter)</i>			
Single, %	29.5	67.5	34.6
Multiples, %	70.5	32.5	65.4
Feed conversion ratio (kg DM/kg gain) from birth to 9 months of age	6.10	6.75	6.15

Management: There are two main methods for management of small ruminants in Thanhnhinh: intensive and extensive systems. The extensive system can be grazing or semi-confined and the intensive system is confined.

In the intensive system the animals are kept separately in pens, and outside the goat house there is normally an enclosed yard with water supply. The pens are made of bamboo or wood. Feeds are supplied to the goats in the goat house according to nutrient requirements of the stage of production. After 10 days the kids are separated from the mother, and the does are milked once or twice a day and the kids suckle after milking. The milk yields were estimated by milking and weighing kids before and after suckling. The kids are weaned at three months of age. In the semi-

intensive system, the goats are grazed during the day, and are confined and get feed supplements in the goat house at night. This system is easily applied in goat production, especially in mountainous areas. In the extensive system animal are grazing without supplements. The two last systems are popular in Thanhnhinh.

Table 2 shows the results in Thanhnhinh concerning goat management systems.

Table 2. Number of herds and their management

Parameters	Thanhnhinh Station	Bim Son	Tam Diep	Total
Grazing	0	20	29	49
Semi-confined	4	7	9	20
Confined	1	0	0	1

Heath management and situation concerning diseases. The major diseases reported among small ruminants were diseases caused by internal parasites, Exthymatosis, Diarrhea, Pneumonia. The most important and dangerous infectious diseases with high mortality were controlled by vaccination, especially Pasteurellosis and Enterotoxeneamia. Other infectious diseases spreading rapidly e.g. Exthymatosis and Keratoconjunctivitis, were treated. The treatments of the diseases were done by veterinarians for 60-70% of the infected animals.

The diseases that often occurred in goat herds were diarrhea (54%) and the mortality was 30.5%/year in the herds. Farmers recognised gastro-intestinal parasitism as a serious problem in goat production, especially in the wet season. Mortality rates are shown in Table 3 and parasite control in Table 4.

Table 3. Mortality, % of total mortality of goats in Thanhnhinh

Mortality rate	Thanhnhinh Station	Bim Son	Tam Diep
Birth to 3 months	63	64	62
3 - 6 months	29	26	25
6- 12 months	8	10	13
Total mortality, birth to 12 months ages	24-30	32-35	30-34

The waste from goats was rarely gathered in the areas next to the goat houses. Undernutrition, inbreeding and bad hygiene was still widespread in small ruminant production at village level and control of internal parasites was not done by the farmers. Due to this the productivity and economic output of goat production is still low.

Table 4. Control of gastro-intestinal parasites of goats in Thanhnhinh

	Thanhnhinh Station		Bim Son		Tam Diep	
	No	%	No	%	No	%
Deworming	5	100	29	38.6	2	5.2
Manure hygiene	5	100	8	10.6	2	5.2
Cage hygiene	4	80	18	24.0	9	23.6
Forage hygiene	4	80	10	13.3	0	0.0
Good nutrition	4	80	21	34.7	9	23.6

Advantages and disadvantage of goat production in Thanhnhinh

Advantages of goat production

Nowadays, small ruminant production is in agreement with the policies of Local Government Units in creating employment and improving the well being of poor farmers, because of some the following advantages:

- Demand a low investment for breeding animals, sheds and feeds but give rapid capital turnover due to short generation intervals and high reproductive rates.
- Efficient use of available pastures in the hilly, mountainous areas covered with shrubs that are feed resources for grazing goats.
- The feeds for goats are simple, agricultural by-products and are converted into animal products. At the same time, the efficiency of converting feed into meat and milk is higher in goats.
- The lamb and kid meat and goat milk are preferred foods and more expensive than other products and can provide high income for producers and good nutrition for humans, especially for malnourished children (comprise 30% of children).
- The Local Government Units have had programs for developing animal production (including Goat production in mountainous areas: 1991, Thanhnhinh Station, established for research into keeping national goat breeds. 2000: Animal production for improving farmers' well-being)

The major constraints of small ruminant production in Thanhnhinh are as follows:

- The appropriate technology of goat production has been improved in the last few years, but not in detail. The situation of under-nutrition, inbreeding and hygiene is still widespread in small ruminant production at village level.
- Traditional goat production at the household level in Thanhnhinh in particular and Vietnam in general, is mainly in extensive systems using natural vegetation. This results in low productivity, reproductive rate and growth rate and high mortality.
- Low productivity is also a result of lack of knowledge of proper animal management