



# Journal of Biological Sciences

ISSN 1727-3048

**science**  
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## Characterization of Goat Production in East Mediterranean Region of Turkey

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**Abstract:** The aim of this study was to analyze present situation and establish characteristics of goat farming at Mediterranean part of Turkey. For this aim, 100 goat farmers were surveyed in three geographical areas (North, Middle and West) of Adana district, located Mountainous area of East Mediterranean region of Turkey. In this study, some traits of goat farmers such as education, occupation was determined. Goat production was unique source of family livelihood in this area. Hair goat (Kil) was the most common breed and small population of Kilis and crossbred of Hair x Kilis goats were also raised at the area. It was reported that, whole family took part in goat production; particularly women and daughters were responsible to flock. Goats moved from one area to another from spring to winter. For the greater part of enterprises involved housing in winter (73%). Daily milk yields of goats were too low. Some herds had higher yield than the others because of keeping goats under semi-intensive systems. These were big scale farms and goats were fed by concentrate together with grazing in winter and summer. Main dairy product was goat cheese. Brucella (34%), echtyma (54%), infertility (9%), foot and mouth disease (23%) were common diseases in the area. Almost all goats were vaccine (74%). Average daily milk yield, lactation length and housing period were detected as 0.591 kg, 4.43 and 4.58 months, respectively. Additionally goats were kept in breeding until 6 years old.

**Key words:** Goat production, East Mediterranean, Turkey

### INTRODUCTION

The special attributes of goats make them particularly important in rural resource poor communities compared to other domestic ruminants include: ability to graze and utilize a wide range of poor quality forages and browse; ability to walk long distances; short generation intervals and high reproductive rates; high turnover rates on investment and hence low risk on investment; high energy efficiency of milk production; efficient utilization of marginal lands; smaller carcasses which are conveniently marketed or consumed over a short time period and flocking instinct which makes herding by younger and older members of family possible<sup>[1]</sup>.

According to FAO, small ruminant populations around the world have increased significantly in response to increasing numbers of people to be fed<sup>[2]</sup>. Morand-Fehr and Boyazoglu<sup>[3]</sup> indicated that, over last 15 years, the number of goats has increased by almost 50% at the world level, whereas sheep decreased by 4% and cattle increased by no more than 9%. For the greater part of livestock, except poultry, numbers have decreased in developed countries (cattle -15%, sheep -18%, poultry +9%). Goats are an exception even in developed countries (+26%). On the contrary of these, small ruminant

population, of Turkey have been decreased during recent decades<sup>[4]</sup>.

The number of goats has decreased by 41% whereas sheep decreased by 38% during recent decades. Reason of these decreasing was due to both socio-economic and political factors. Goat production was forbidden in forest area by government was the most limited factor in Turkey. Also migration of rural people from village to the city center has negative effects on the goat production. In fact, goat farming is the most important animal production activities at Mountainous areas of Mediterranean part of Turkey. People, living in this area, are very poor. They do not have any other alternative for their subsistence's'. Even if the government has forbidden, goat farmers do not give up the production in forest area, because of above-mentioned factors. In addition, milk and meat products from goats are very important for population, living in marginal areas. Goats provided home supplies and self-sufficiencies of families.

The aim of this study was to determine present situations of goat production at mountainous area of Mediterranean part of Turkey. For this aim the investigation was carried out in three phases. These are; collection of technical data of the small ruminant production, the role and inferences for extension service

in small ruminant production, gender roles in the small ruminant sector.

### MATERIALS AND METHODS

This study had been carried out at goat farms in Adana, located mountainous area of East Mediterranean region of Turkey. For this aim, 100 sheep and goat farmers were surveyed in three geographical areas (North, Middle and West) of Adana region.

Adana has two regional parts. The first one is fertile Cukurova plain and the second is Taurus (Toros) Mountainous area. Taurus Mountains are the Western most branch of the great mountain chain that stretches across all of Asia; the Himalayan mountain belt. Our villages were stated in southeastern part of Taurus Mountains<sup>[5]</sup>.

Animal production is the most popular production types of area, due to its geographic and socio-economic situation. Mediterranean and Anatolian weather systems influence climate of the Mountains, bringing warm summers and cool winters to the area. The high Platots of Taurus Mountains are the summer homes of entire villages and the summer grazing of herds of animals. Livestock moves from lower land to higher land from spring to winter<sup>[5]</sup>.

Australian pine (*Pinus nigra* Arnold), Cedar (*Cedrus libani*), Crimson pine (*Pinus butia*), Oak (*Quercus* sp. L.) and Ocaliptus are most common trees of forest area<sup>[5]</sup>. Goat, sheep, cattle and poultry are raised in this area. Beekeeping is also common especially at the western part of Adana district. Goats are raised in nomadic system.

One hundred goat farmers were surveyed in three geographical areas (North, Middle and West) of Adana district. The survey was conducted from beginning of 2002 to the end of 2003. The data were stored and analyzed using SPSS (Statistical Program for Social Sciences) software.

### RESULTS AND DISCUSSION

In research area, goat farmers lack training. Any training study was not given to the rural people living in this area. It was observed that 98% of male goat owners had been literated. Literated women ratio (29.6%) was lower than literated male ratio (98%). Almost all people had land for cereal production. But most of them (85.2%) performed crop production activities generally for their subsistence. They had small agricultural land and land size for per family was average 27.5 da. All villages had primary school. The roads were in bad conditions. Except one, all villages had been established electricity and water resources.

Most of the goat farms were family managed. It was reported that, whole family took part in goat production; particularly women and daughters were responsible to flock. Teenager boys were also helping their mothers while holding the goat from its head milked goat. Women and children worked average 2.8 h/day in goat activities. Few male (12%) took part in goat production. Woman continued to work in goat production even if she was pregnant.

The people, living in this area reported that goat production was unique source of family livelihood. They did not have any other alternatives because of the land structure. Hair goat (Kils) was the most common breed and small population of Kilis and crossbred of Hair x Kilis goats were also raised at the area.

A main income of families was based on goat and sheep production. Some (76%) of families had cattle. The average number of cattle was 3-4 heads per families. Besides, poultry was also raised for home consumption.

Some production traits were given in Table 1. According to 100 goat farmers' questionnaire results, it was reported that goats moved from one area to another from spring to winter. The greatest part of enterprises involved housing for winter (73%).

Main activity of the farms was to produce milk and dairy products. Farmers' family consumed average 25% of milk. Main dairy products were goat cheese in these farms. When families sold their milk as cheese they earned 200% more money. Does were milked twice a day by women or their daughters. Additionally, they sold live animal when they needed cash money but skin, hair etc. did not sell.

It was obvious that big part of goats were fed by concentrate especially in winter season while they were housed (88%). Barley, different types of bran, oilcake and hay were given goats in this period. Average 91% of kids were weaned while they were 4-6 months old. They were fed residual milk together with grazing. Big parts of goats

Table 1: Production systems of goat farming

Traits		Frequency (%)
Housing	Free (open shed)	27
	Barn	67
	Both	6
Main production	Meat	15
	Milk	77
	Both	8
Concentrate feeding	Yes	88
	No	12
Daily milking	1 times a day	70
	2 times a day	30
Weaning time	1-2 months	9
	2-4 months	53
	4-6 months	38
Mating	Seasonal	71
	Asseasonal	29

had seasonal breeding (71%). Elder daughters or women were responsible of herd at the grazing time.

From March to November, whole herds were grazed. Feeding was mainly based on natural grazing and agricultural by-products (straw, stubble, grains). Oak trees (*Quercus*) were used for feedstuff. The similar results were reported by Castel *et al.*<sup>[6]</sup>. They pointed out that olive or acorn tree branches were used as feedstuff in goat production. Sometimes farmers cut the foliage for feeding their animals. This was the big problem in this area due to soil erosion and deforestation.

Daily milk yields of goats were too low. Some herds had higher yield than the others because of they rose under semi-intensive systems. These were small-scale farms and they fed concentrate especially in winter, besides in summer time they fed small amount of concentrate together with grazing. Daily concentrate amount was between 0.2-0.8 kg. They fed according to the physiological conditions especially in gestation periods. In addition, kids were kept with their mother till they are 6 months old. This was the any other reason of low yield. Mortality rate of kid's was 15%.

Brucella (34%), echtyma (54%), infertility (9%), foot and mouth disease (23%) were common disease in the area. Almost all farms carried out vaccinations (74%). They reported that if any disease occurred, either they asked other farmers or bought medicine by themselves. Only 45% of farmers called a veterinary for their animals. Goats were kept in breeding until 6 years old.

### CONCLUSIONS

This research represents an important step to better understanding the goat production systems of East Mediterranean part of Turkey. It is clear that area need to improve productivity per animal. It has to emphasize here,

small ruminant production is essential for this area. The people live in this area do not have any other alternatives for their sake of making a living.

By the way education studies should be started at utmost priority right away. People should be acknowledging about new technologies. Moreover grazing must be planned in this area. On the other hand productivity will be improved in Hair and Kilis breeds.

### REFERENCES

1. Lebbie, S.H.B., 2004. Goats under household conditions. *Small Ruminant Res.*, 51: 131-136.
2. Haenlein, G.F.W. and M.A. Abdellatif, 2004. Trends in small ruminant husbandry and nutrition and specific reference to Egypt. *Small Ruminant Res.*, 51: 185-200.
3. Morand-Fehr, P. and J. Boyazoglu, 1999. Present state and future outlook of the small ruminant sector. *Small Ruminant Res.*, 24: 175-188.
4. FAO, 2004. <http://faostat.fao.org>
5. Internet, 2004. <http://www.tempotour.com//taurus.htm>
6. Castel, J.M., Y. Mena, M. Delgado-Pertinez, J. Camunez, J. Basulto, F. Caravaca, J.L. Guzman-Guerrero and M.J. Alcalde, 2003. Characterization of semi-extensive goat production systems in southern Spain. *Small Ruminant Res.*, 47: 133-143.