

<http://www.pjbs.org>

**PJBS**

ISSN 1028-8880

**Pakistan  
Journal of Biological Sciences**

**ANSI***net*

Asian Network for Scientific Information  
308 Lasani Town, Sargodha Road, Faisalabad - Pakistan

## The Structure and Productivity of Sheep Husbandry in the Turkish Republic of Northern Cyprus (NCTR)

<sup>1</sup>Turgay Taskin, <sup>1</sup>Mustafa Kaymakci, <sup>1</sup>Nedim Kosum, <sup>2</sup>Tayfun Ozkaya and <sup>3</sup>Hikmet Soya  
<sup>1</sup>Department of Animal Science, <sup>2</sup>Department of Agricultural Economic, <sup>3</sup>Department of Field Plants,  
Faculty of Agriculture, Aegean University, Bornova, Izmir, Turkey

**Abstract:** This study has been conducted in order to determine the structure and productivity characteristics of sheep husbandry in The Turkish Republic of Northern Cyprus (NCTR). Sheep farms in the provinces of Lefkosa, Guzelyurt, Girne, G. Magosa and Iskele have been analysed. The data used in analysis are obtained from 218 sheep farms. In sheep farms, fertility traits obtained such as infertility rate, fecundity, the number of lambs weaned per ewe mated and lamb mortality rate are 8.81, 1.17, 1.03 and 16.79%, respectively, growth traits as average marketing weight and marketing age are 39.33 kg and 147.11 days, respectively, milk yield traits as daily average milk yield, milking period and milk yield obtained by milking period are 0.67 kg/day, 96.67 day/year and 66.99 kg/year, respectively and average wool yield for ewe and ram are 1.37 and 2.55 kg, respectively. Average agricultural income per farm is 6281.72 NTL according to the prices of 2002 year of prices.

**Key words:** Turkish Republic of Northern Cyprus, sheep farms, production traits, productivity

### INTRODUCTION

Sheep breeding has a considerable importance in the animal production in the NCTR (The Turkish Republic of Northern Cyprus). According to 1998 figures, the number of sheep in the country is 220.495 heads. The share of mutton in the total meat production is 54.32% (3.182 tones). The share of sheep and goat milk, on the other hand, is 20.59% (12.198 tones). In NCTR traditional Halloumi cheese is mostly produced by sheep milk, 148694 pieces of sheep hide is produced as well. Moreover, 307 tones of wool have an indisputable importance in the economy. Briefly, Sheep has a critical importance in the nutrition of people in NCTR.

In order to make technical, economic and social suggestions for the development sheep production in the NCTR, primarily a sound situational analysis should be made. This study is carried out in the NCTR for this purpose and basic traits such as lamb, growth, milk and wool on sheep farms and their economic productivity have been determined.

### MATERIALS AND METHODS

The research material consisted of information on such economic productivity traits compiled from interviews with 218 sheep breeders in a total of 48

villages; 10 in the district of Lefkosa, 7 in Guzelyurt, 15 in Girne, 13 in G. Magosa and 5 in Iskele. The interviews were made in August-September 1998. By using the records of the Department of Livestock Production of the NCTR Ministry of Agriculture and Forestry, 218 sheep farms were selected randomly, about 5 from each of the 48 villages. As mentioned before, questioner forms in the questionnaires collected the data, close-ended questions were asked in order to obtain quantities data in terms of productivity traits, such as milk, lamb meat wool yields. The districts, village types were used as crossing groups. The significance of differences, on the other hand, was determined by means of variance analysis method (Duzgunes *et al.*, 1983).

### RESULTS AND DISCUSSION

Considering the breeds in the NCTR, it can be stated that the lamb production is at an efficient level. The number of lambs at birth varies between 1.32 and 1.81. However, this performance cannot be maintained until weaning. Lamb mortality is quite high, 16.79% (Table 1) on average and reaching 24.37% in the district of Lefkoşa. It can be estimated that about 31.000 heads of lamb die annually in the NCTR. The number of sheep: 220.420 heads in NCTR. Fecundity: 1.17, Marketing weight: 30 kg. The rate of ewes 72.29%, Lamb mortality: 16.79% and Live lamb weight price; 4 US Dollar. Accordingly, the loss

**Table 1: The reproduction traits in NCTR sheep farms**

Sub group	n	Infertility rate (%)	Fecundity (n)	Litter size (n) $\bar{x}$	Mortality rate (%) $\bar{x}$	WLMS* $\bar{x}$
<b>Districts</b>						
Lefkoşa	44	6.61	1.31	1.81	24.37	1.09
Güzelyurt	25	12.35	1.18	1.50	15.98	1.03
Girne	57	6.85	1.15	1.32	16.19	1.00
Magosa	68	11.14	1.18	1.81	12.05	1.07
İskele	24	7.12	1.07	1.41	15.36	0.99
Significant level		*	*	*	*	NS
<b>Village type</b>						
Mountain	62	9.77	1.13	1.54	17.96	0.99
Lowland	156	7.86	1.23	1.59	15.62	1.08
Significant level		NS	NS	NS	NS	NS
<b>General</b>	<b>218</b>	<b>8.81</b>	<b>1.17</b>	<b>1.57</b>	<b>16.79</b>	<b>1.03</b>

\*:  $p < 0.05$  NS = Not significant, Infertility rate (%): Infertile ewe/Mated ewe, Fecundity: Number of lamb at birth/Mated ewe, Litter size: Number of lamb at birth/Lambd ewe, Mortality rate (%): Number of lambs until weaning age/Number of lamb at birth, \*Weaned lamb per ewe mated: Number of weaned lamb/Mated ewe

**Table 2: The growth traits in NCTR sheep farms**

Sub group	n	WA (day) $\bar{x}$	WW (kg) $\bar{x}$	MA (day) $\bar{x}$	MW (kg) $\bar{x}$	MSW (kg) $\bar{x}$	MRW (kg) $\bar{x}$
<b>Districts</b>							
Lefkoşa	44	105.81	35.97	133.83	43.34	57.88	86.14
Güzelyurt	25	93.19	30.33	138.21	42.65	58.35	88.82
Girne	57	98.19	31.92	152.26	40.55	60.35	85.31
G. Magosa	68	101.01	31.47	140.70	39.30	56.49	83.65
İskele	24	131.30	24.69	172.74	30.70	38.05	80.87
Significant Level		*	*	*	*	NS	NS
<b>Village type</b>							
Mountain	62	107.29	30.93	154.88	38.01	56.20	84.15
Lowland	156	104.51	32.02	137.21	40.76	60.25	85.77
Significant level		*	*	*	*	NS	NS
<b>General</b>	<b>218</b>	<b>105.90</b>	<b>26.48</b>	<b>147.11</b>	<b>39.33</b>	<b>58.22</b>	<b>4.95</b>

WA: Weaning Age (day), WW: Weaning Weight (kg), MA: Marketing Age (day), MW: Marketing Weight (kg), MSW: Mature Sheep Weight (kg), MRW: Mature Ram Weight (kg), NS = Not significant

stemming from the lamb deaths for the year 2002 is in the vicinity of 1860 billion YTL. Lack of knowledge as well as negligence regarding farmers and the government plays an important role in the emergence of this problem. At this point, it can be stated that the organization of the inside of the sheep pens is inadequate and the protective vaccinations are not effectively performed. Measures that aim bringing lamb mortality down to normal levels (5%) seem to have utmost priority (Kaymakci and Sonmez, 1996).

Compared with the results obtained in studies carried out in Turkey (Table 2), growth traits like the weaning weight and the marketing weight of the lambs in the NCTR are at satisfactory levels (Kaymakci *et al.*, 1996; Karaca *et al.*, 1993). On the other hand, compared with the other Mediterranean countries and especially with the western Anatolian Region of Turkey, it has been observed that the weaning age of the lambs is quite high; in other words, they have a long suckling period.

The milk yield of the ewes in the NCTR, however, is observed to be lower, considering the potential of the breeds raised (Table 3). Among the reasons for this the leading factor has been seen to be inadequate feeding the level that can hardly meet their minimum living standards. The NCTR is faced with serious problems in

the production of rough fodder. In order to solve this problem, mainly arising from drought, cut straw is occasionally imported from Turkey. Another technical reason for this is the fact that the suckling period of the lambs is rather long. If sufficient and cheap concentrated fodder is provided for the lambs, to decrease suckling period from 3-31/2 months to 1-1/2 months will be a good solution for as well lamb rearing. In this way, milking period will be extended. It is known that the highest milk yield is obtained during the first months of lactation.

The value of AIPF (Average Income Per Farm), on the other hand, is an important criterion with respect to the evaluation of family work power (Table 4). This value also shows the income that can be spent by the family who owns the farm. If agricultural incomes are negative, a breeder cannot continue sheep breeding more than a few years and if this tendency continues he (or she) will liquidate this branch (Acil and Demirci, 1977). It has been observed that Lefkosa, Güzelyurt, Girne and G. Magosa AIPF have positive values, whereas the district of Iskele has negative value.

In addition to above-cited technical measures to increase the efficiency of the sheep breeding in the NCTR, it is essential that a number of economic and social measures are taken and new regulations adopted.

Table 3 :The milk yield traits in NCTR sheep farms

Sub group	n	DAMY (kg/day) $\bar{x}$	MP (day/year) $\bar{x}$	MMY (kg/year) $\bar{x}$
<b>Districts</b>				
Lefkoşa	44	0.72	97.68	70.32
Güzelyurt	25	0.76	109.06	82.88
Girne	57	0.76	100.45	76.34
G. Magosa	68	0.69	110.74	76.41
İskele	24	0.46	70.42	32.39
Significant level		*	*	*
<b>Village type</b>				
Mountain	62	0.65	87.17	56.66
Lowland	156	0.71	101.17	71.83
Significant level		NS	NS	NS
<b>General</b>	<b>218</b>	<b>0.67</b>	<b>96.67</b>	<b>66.69</b>

\*:  $p < 0.05$  NS: Not Significant, DAMY: Daily Average Milk Yield (kg/day), MP: Milking Period (day/year), MMY: Milking Period Milk Yield (kg/year)

Table 4: The agricultural income per farm in NCTR sheep farms (AIPF, 000 NTL) (\*)

Sub group	n	$\bar{x}$
<b>Districts</b>		
Lefkoşa	44	7217.56
Güzelyurt	25	1815.81
Girne	57	7635.24
G. Magosa	68	9961.72
İskele	24	-484.92
Significant level		*
<b>Village type</b>		
Mountain	62	3121.68
Lowland	156	8282.12
Significant level		*
<b>General</b>	<b>218</b>	<b>6281.72</b>

\*: $p < 0.05$ , (\*): It was based on 2002 year of prices, NTL: New Turkish Liras

These can be listed briefly as follows:

- Marketing problems concerning lambs and milk need to be solved. Especially in the case of lamb marketing, there seems to be a market which obviously works against the breeder as an oligopolitic market. For this purpose, it is necessary to take a series of measures such as the determination of the base price for lambs and for milk by the government, solution of the problem of okka (a weight of 2,8 lb) as abounding its usage kg and/or the formation of a governmental or co-operative cold chain in milk, reorganization of the Cyprus Milk Industry Corporation (CMIC) and discontinuation of importing frozen meat and milk powder.
- The interest rates on the loans given to sheep breeders are high, just like the agricultural sector. The loans have to be supported.
- The sheep breeders in the NCTR need to be organised in a modern manner.
- There is no agricultural insurance in the NCTR for the deaths of sheep and lambs. These have to be added to insurance system.

- It is a known fact that The Butchers Union is the sole authority in the NCTR during the marketing periods of lambs in the determinations of purchase prices. The government should act to break this monopoly at least until the breeders establish their own organizations.
- The sheep breeders in the NCTR need efficient and qualified publications
- The sheep breeders in the NCTR are faced with important feeding problems. This is most serious in the case of rough fodder. Accordingly, measures for the production of quality rough fodder should be taken by the Ministry of Agriculture and Forestry. Rough and concentrate fodder should be exempt from VAT (Value Added Tax).
- The breeders in the NCTR need quality stud animals. For this purpose, the units connected to the Ministry of Agriculture and Forestry, primarily State Production farms, should be ameliorated and made institutions where better stud animals are bred.
- In the NCTR, health protection services offered to animal breeders are expensive and inefficient. Accordingly, it is necessary to administer periodical protective vaccinations on time and to inspect the prices and the quality of drugs constantly.
- Cheaper roads, water, electricity and effective extensities service are also very important for sheep farms.

## REFERENCES

- Acil, F. and R. Demirci, 1977. Economy of Sheep Husbandry in Turkey and Sheep enterprise in Central Anatolia in Turkey. Ankara-Turkey.
- Duzgunes, O.T., T. Kesici and F. Gurbuz, 1983. Statistical Methods 1. Ankara University Faculty of Agriculture Publications No: 861, Ankara-Turkey.
- Karaca, O., Y. Vanli, M. Kaymakci, T. Altin and A. Kaygisiz, 1993. Sociological, economic and genetic aspects of sheep breeding in Eastern Anatolia. YYU Arastirma Fonu Baskanligi, 90.ZF.071. Nolu Proje Kesin Sonuc Raporu (Turkey).
- Kaymakci, M. and R. Sonmez, 1996. Advanced Sheep Husbandry, Ege University Printing House, Izmir, Turkey.
- Kaymakci, M., T. Ozkaya and R. Sonmez, 1996. The Structure and Productivity of Sheep Farms in Western Anatolia and The Thrace. Ege University Faculty of Agriculture Publication, 33: 147-155. Bornova-Izmir, Turkey.