3.2.1.

ISSN 1022-0119 VOLUME 20(2) 2003

AFRICAN JOURNAL OF RANGE & FORAGE SCIENCE

VII International Rangeland Congress

PROCEEDINGS OF THE VIIth INTERNATIONAL RANGELAND CONGRESS

26 July–1 August 2003
International Convention Centre
Durban, SOUTH AFRICA

With support from:
Society for Range Management

Official Journal of
The Grassland Society of Southern Africa
www.nisc.co.za

THE STRUCTURE OF A TRANSHUMANCE GRAZING IN A MEDITERRANEAN SILVOPASTORAL RANGELAND ECOSYSTEM IN CAMLIYAYLA , TURKEY

T. Tukel[1], R. Hatipoglu[1], H. Ozbek[2] , C.L. Alados[3], N. Celiktas[4] and K. Kokten[4]

[1] Professors, Agricultural College, Cukurova University, 01330, Adana, Turkey. E-mail: tukel@mail.cu.edu.tr
[2] Professor Soil Science Department, Turkey.
[3] Professor, Avda Montana 177, Zaragoza 50080, Spain.
[4] Graduate Students, Turkey.

ABSTRACT

This study describes vegetative structure and the grazing potential of a silvopastoral Mediterranean ecosystem on Taurus Mountain where a transhumance grazing system has been practiced for centuries. A specially designed questionnaire was used to determine the structure of the transhumance families. Forage production was 2.9 t/ha in the moderately grazed pasture but 1.0 t/ha in the heavily grazed site. Families coming in the area early in the spring stay relatively shorter periods of time comparing to those moving in the early summer. The tendency of settlement as for cultivation and building summerhouses is likely be the most important cause, rather than grazing, for furthering the destruction of such an ecosystem in the near future. Therefore, local authorities, especially, the Municipality of the County Camliyayla must take serious measures to prevent this trend.

1. INTRODUCTION

Camliyayla in Namrun is located at 1300-1400 m on the Taurus Mountains in Turkey and covers approximately 220-250 ha of the Silvopastoral Ecosystem. This area experiences several interrelated problems of socioeconomic, judiciary, political and technical inadequacies (Tukel and Hatipoglu 1998).

The study area is located along the route of transhumance herds of sheep and goats used for centuries since the Romans, Greeks, and the Ottomans. Although there have been several publications concerning vegetation characteristics and grazing potentials of the pastures under sedentary grazing system on Taurus Mountains in Turkey, very few studies of the transhumance grazing system have been conducted.

2. MATERIAL AND METHODS

A typical cool-temperate sub-humid - Mediterranean climate prevails in the area.

Three test pastures with light, moderate and heavy grazing due to the distance from the waterholes were selected in 1999. Vegetation measurements and the data for grazing status were determined in the grazing period of the year 2000 and 2001.

A specific questionnaire was used for determining the structure of the herds. Out of 35 transhumance families, 12 in 2000 and 19 in 2001 were interviewed during the peak grazing periods

Vegetation measurements were performed according to Brown (1954), Tukel (1984) and Odum. (1971) to obtain plant cover, forage yield and utilization of the pastures.

3. RESULTS AND DISCUSSION

3.1 Vegetation Characteristics and Stocking Capacities

Plant cover for the light and moderate grazed areas was similar at 91 and 88 % respectively but the heavily grazed pasture had a significantly lower cover at 62 %. The most dominant plant species was *Chrysopogon gryllus*, a perennial bunch grass in all test areas. Another perennial cool season grass, *Festuca ovina*, a steppic element was second in rank both in light and moderately grazed pastures.

A total of 164 plant species were collected, mounted and identified as herbarium specimen. Of this total, 111 genera

Proceedings of the VIIth International Rangelands Congress 26th July – 1st August 2003, Durban, South Africa
Editors: N. Allsopp, A.R. Palmer, S.J. Milton, K.P. Kirkman, G.I.H. Kerley, C.R. Hurt, C.J. Brown ISBN Number: 0-958-45348-9
Proceedings produced by: Document Transformation Technologies Congress Organised by: SB Conferences

belonging to 37 families were present in the study area. Amongst the families only 5 of them had noticeable higher species diversities. The Poaceae with 26 species was the most diverse followed by Asteraceae, Fabaceae,, Lamiaceae, and Caryophyllaceae.

Forage production capacities of the pastures varied from 1.0 t/ha in heavily grazed pasture to 2.9 t/ha in moderately grazed pasture. The light grazing area was in between these two extremes producing 1.3 t/ha.

The highest stocking capacity was 9.7 sheep/ha in moderately grazed area but due to high percentage of utilization of the pasture in the spring season of 2000, this pasture was actually grazed more or less at double this capacity by sheep. However, grazing pressure was not so high in the other two areas. Safe stocking rates were 4.3 sheep/ha in the light grazing area and 3.4 sheep/ha in the heavy grazing area but they are grazed a little more than these at 5 sheep/ha in lightly grazed areas and 4.4 sheep/ha in heavily grazed areas.

3.2 Structural Analyses of Transhumance in Camliyayla

According to the results of the interviews conducted in two consecutive years the following conclusions can be drown:

- Each family is comprised of on average has 4-5 persons, ranging from 2 to 8 people. Sixty-one percent of the families have their original base village. Each of them has about 1-6 ha of cultivated land were mainly wheat and barley are cultivated . The remaining 39 % have no lands. They are truly nomadic people
- They come from a minimum of 3 km and to a maximum 85 km to the grazing area from different villages. Those who move up to the higher elevated pastures travel 30 km- 80 km
- About 80 % move on foot, 15 % use trailers pulled by tractors, 5 % use carts pulled by horses
- The earliest herd entering the pastures arrived on 25 March 2001 when the weather warms up early in the season. The latest herd arrives on 20 July 2000 when the vegetation matures late. They stay there for a minimum of 3 days and a maximum of 180 days, mostly concentrated in the months of April, May and June at the peak of grazing season
- Minimum herd size is 80 heads of sheep and the maximum is composed of 500 heads of sheep, 150 lambs and 25 goats
- The grazing fee is more or less 0.15-0.60 Euro/sheep or goat and more or less 2.5-3 Euro/cow or steer. This fee is charged by the Municipality of Camliyayla.
- About 20 % of the families staying late in the grazing season on Sıgıryaylası give extra feed in the form of cotton cake, ground barley, and/or other concentrates to their animals. Families moving up to the higher elevated pastures do not give any extra feed to their animals
- About 25 % of the families moving up to the higher elevated summer pastures come back to their winter pastures via Sıgıryaylası staying there 7-30 days in the months of September and/or October. The other 75 % use different routes on the way back to their winter pastures
- All of the families process milk into cheese on the summer pastures.
- Most of them take their animals to the market to sell them during the religious holiday of "Kurban Bayramı " when sheep and goats are sacrificed. From time to time some livestock dealers comes to buy their animals on the pasture
- Breeding of animals is free within the family herd
- Some families shear their flocks before moving to the summer pastures in April and/or May while others shear their flocks on the way back to their winter pastures
- They receive veterinary services when needed. Some families inject vaccines to their animals themselves and take care of the new born lambs and kids on the pasture
- Pastoral families practice a kind of rotational grazing avoiding heavily grazed pastures used in the previous season but concentrating on the pastures where the seasonal forage production is better.

Families with relatively larger herd sizes, coming to the area early in the spring, stay relatively shorter periods of time compared to those moving to the area in the early summer.

The tendency of settlement for cultivation and building summerhouses will more likely be the most important cause, rather than grazing, for furthering the destruction of such remaining ecosystems in the near future. Therefore, local authorities, especially, the Municipality of the County Camliyayla must take serious measures to prevent this trend. In order to achieve this, a close cooperation with the Municipality, Agricultural and Forestry Services are needed. Authorities must be convinced that Sıgıryaylası in Camliyayla is one of the less disturbed remaining corridors for transhumance movements and therefore must be protected as it is. Attempts to open up the area for settlement will also result to the disappearance of such cultural activities as well as further destruction of such an ecosystem.

4. REFERENCES

Brown D 1954. Methods of Surveying and Measuring Vegetation Bul.42 Commonwealth Agricultural Bureaux. Farnham Royal. Bucks. England

Odum E P 1971. Fundamentals of Ecology. W.B. Sounders Company. Philadelphia. London. Toronto

Tukel T 1984. Comparison of grazed and protected mountain steppe rangeland in Ulukisla. Turkey. Journal of Range Management 37: 133-135.