

Exploitation of Mountain Pastures by Grazing with Ovine Youth

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Abstract

With a view to testing the potential of valuing the natural pastures in the mountain area for the meat production, there was made up a group of 15 young male Țurcana sheep aged between 90-110 days and an average weight of 20.66 kg. The lambs were kept on a natural mountain unspoiled pasture, situated in the Cindrel Mountains, Paltinis area. The animals were weighed at the beginning and at the end of the experiment, in order to determine the evolution of the body mass of the animals, the floristic composition of the pasture was determined, the quantity and quality of the production of green mass on each lot were determined as well.

During the testing period of 28 days of grazing, the lambs achieved an average daily growth of 94±/ 0.37 g and a total growth of body mass of 2.66 kg.

Keywords: ovine youth, natural mountain pasture, average daily growth

1. Introduction

Raising and exploiting ovine is an economic activity with important social implications which has been considered very important both in our country and in the European Union Countries [1]. In our country, the extremely favourable conditions of the mountain area, the wide areas of natural pastures and hayfields, the long tradition of raising ovine, represent favourable factors of raising ovine in the mountain area [2]. The problem of the exploitation of pastures is a major one for our country, not only because of its efficiency but also because of its great share in the country's economy. For the conditions in our country, the permanent pastures have a special importance because they occupy considerable areas of over 3 million ha, the majority being situated on lands which cannot have another

destination in agriculture (Puia I. and col., 1984) [3].

In Romania the number of Țurcana ovine represent nowadays about 70% of the total number of ovine.

The purpose of this paper was to test the potential of valuing the natural pastures in the mountain area for the meat production with Țurcana lambs the ecotype of Sibiu.

2. Materials and methods

There was made up an experimental group of 15 young male Țurcana sheep, current year. When this group was made up we tried to make it a homogenous one from the point of view of the age and body development. The age was between 90-110 days and the body mass between 19-22 kg, with an average weight of 22.66 kg. In order to achieve a rational grazing and to obtain optimum parameters of fattening, the pasture was divided into lots with electrical fence. During the whole

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period of the experiment water and salt balls were assured permanently. The animals were weighed at the beginning and at the end of the experiment in the morning before going out for grazing. The health of the animals was good, as they were treated with the obligatory preventive treatments according to the medical-veterinary regulations in force. The area dedicated to grazing was of 1.75 ha mountain pasture, without having been improved, situated in the Cibin Mountains, Paltinis area. The samples of the grass were tested in the Biochemistry lab of ICDM Cristian, using Kjeldahl method for the determination of CB.

During the grazing period our objective was: the determination of the floristic composition of the pasture, the quantitative and qualitative evaluation of the grass production on the lots and after taking samples of grass from the checking points, the content of dry matter (DM), crude protein (CB), the coefficient of using the pasture and the evolution of the animals' body mass were determined.

The primary data were worked out biostatistically.

3. Results and discussion

The pasture dedicated to the experiment is situated in the Cindrel Mountains at an altitude of 1310 m, on a secondary peak (in the spruce fir area). The soil is acid brown, mezobasic, sandy clayey texture.

The total production of grass was calculated on each lot and in accordance with the production of green mass achieved and the daily consume of grass for each animal there was established the number of grazing days. The correct determination of the number of animals on a pasture is extremely important for the maintenance of the production and quality of the grass. The overloading or under loading of a pasture have negative influences difficult to correct afterwards [4].

At the beginning of the experiment the floristic composition of the natural pasture where the group of lambs grazed determined at the checking points was the following:

Graminaceae-76% with the dominant species *Festuca rubra* and co dominant *Agrostis tenuis*; *Agrostis rupestris*, *Poa compressa*, *Antoxantum odoratum*, *Deschampsia flexuosa*, *Nardus stricta*.

Leguminous plants-8% *Trifolium repens*, *Trifolium pratense*.

Other species-16%: *Urtica* sp., *Ranunculus sceleratus*, *Achemilla vulgaris*, *Pedicularis* sp.

The average of green mass per hectare, evaluated in the pasture area was of 2800 kg/ha.

The results regarding the content in D.M. and C.P. of the grass made up in two stages, i.e. May and June, revealed in general the same evolution in time as in the case of grazing on the hill. The data regarding the chemical composition of the grass are rendered in Table 1.

Table 1. Content of dry substance and crude protein of the grass

Date	D.M. rel. %	D.M. abs.%	D.M. total %	C.P. %
23.05	35.79	88.65	31.73	16.28
17.06	29.20	89.60	26.16	15.47

Table 2. Quantity of green mass (GM) coefficient of use (CU) and average consume of fodders/ head

Lot	Date of det.	S/ha	G.M. kg/ha	G.M./lot kg	Per. of grazing. days	G.M. consumed		Unconsumed remains		CU %	Average consume per lamb kg/day
						kg	%	kg	%		
1	23.05	0.25	2640	660	4	468	70.1	192	29.1	70.90	7.80
2	27.05	0.25	2730	682	4	485	71.1	197	28.9	71.11	8.08
3	31.05	0.25	2780	695	4	486	70.0	209	30.1	69.92	8.10
4	04.06	0.25	2840	710	4	498	70.1	212	29.9	70.14	8.30
5	08.06	0.25	2800	700	4	490	70.0	210	30.0	70.00	8.16
6	12.06	0.25	2840	710	4	500	70.4	210	29.6	70.42	8.33
7	16.06	0.25	2800	700	4	486	69.4	214	30.6	69.42	8.10
X	-	-	2275,71	693,85	-	487,57	70.3	206.28	29.8	70.27	8.12

The grazing happened during the period May-June. The group of lambs was kept on the natural pasture in Paltinis in the system of conducted grazing, on lots separated by electrical fences. Necessary work on the pasture during the grazing period is reduced. [4]. Before starting grazing in Paltinis, the animals grazed on a hill pasture where they had been gradually accustomed with the grass on the pasture, with transit portions and moderate grazing during the first days.

The evolution of the body mass is rendered in Table 3. The period of grazing at this altitude on the pasture in Paltinis was of 28 days. The vegetation at the beginning of grazing (23/05) offered good conditioned for feeding the lambs ensuring them a sufficient grass mass from the quantitative point of view, the fact that the beginning of grass vegetation in the mountains is more explosive at a high altitude as compared to the plain. The season variations are more important at altitude, the maximum of vegetation

Besides the advantages related to the increase of the degree of enhancing the value of the grass by the portion grazing with electrical fence, the number of Sheppard who can do some other being in May-June. At this date the percentage of dry matter in the grass was of 31.73% and that of crude protein of 16.28% values considered as being high. After the animals left each sheep fold, the unconsumed plants were mowed as they usually do not have economic value in order to prevent their multiplication by seeds. At the same time there was made a spreading of the animal remains in order to achieve a uniform fertilization of the pasture and to prevent the multiplication of parasites.

During a period of testing of 28 days, the lambs achieved an average daily growth of 94 ± 0.37 g and a total of body mass between 2-3 kg with an average of 2.66 kg. The evolution of the body mass at the beginning and at the end of the experiment is presented in Table 3.

Table 3.Total growth of body mass and average daily growth at Tzrucana lambs

Specification	Unit. of measure	n	$\bar{x} \pm Sx$	s	CV%	Limits of variation
Body mass at the beginning	kg	15	20.66±0.27	1.06	5.15	19-22
Body mass after 28 days	kg	15	23.30±0.35	1.36	5.84	21.5- 25
Total growth of body mass	kg	15	2.63±0.10	0.40	15.17	2.1-3.2
Average daily growth	g	15	94±0.37	1.44	15.30	0.071- 0.107

The average daily growth obtained, 94 ± 0.37 g/day, confirms the data contained in the specialty literature concerning grazing with ovine youth on the mountain pastures [5-8]. The mountain pastures are important unpolluted and cheap sources of fodder for the ruminant and especially for ovines.

4. Conclusions

In the floristic composition of the mountain pasture, the prevailing plants were the graminaceae with 76%, then leguminous plants with 8% and other species 16% out of which the majority were uneatable species.

The production of green mass evaluated in the grazing area was of 2800 kg/ha.

The average coefficient of using the green mass on the pasture is moderated of 70.2% and the average consume of green mass daily and per lamb is situated between 7.8 kg and 8.33 kg.

The average daily growth achieved of 94 ± 0.37 g/day for a period of 28 days after feeding the lambs with grass only is economically justified.

The system of conducted grazing applied nowadays has several advantages: increasing the production of the pasture by ensuring a sufficient time of recovery until the next grazing stage, a more uniform spreading of the grass production on grazing stages, the improvement of the floristic content, increasing the degree of consuming the plants etc.

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