# Influence of Nutrition in Milk Production of Sheep and Lambs in Weight

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**Abstract**

The sheeps breeding is an old and traditional activity in Romania country. Depending on the number of sheeps and goats, Romania ranks in the fourth among E.U. countries. The research was conducted on three groups of sheeps, from same breed. All groups sheeps were feeding with the same amount of food, but the ratio structure was different, in the following scheme conformities: group I - has been used a fibrous ratio; group II – has been used a juicy ratio; group III – has been used a concentrate ratio. Also, in all the groups was recorded the milk production and the weight of lambs in the first month of the life. Based on research conducted, the fallowing conclusions were drawn: The highest milk production was produced by sheeps in group I and group II; The weight of lambs in the first month of life was also influenced by the mother sheeps ratio structure; The largest increase growth was made of lambs coming from a group III, and the smallest increase was made of lambs coming a group II. As a general conclusion, the best results are obtained when the mother sheeps are fed with concentrate ratio type and fibrous ratio type.

**Keywords:** feed, lambs, sheeps.

## 1. Introduction

During a calendar year, the nutritional requirements of adult sheeps change depending on their physiological state.
These nutritional requirements can be grouped into: requirements for maintenance, requirements for mating, requirements for the first part of pregnancy, requirements for the first part of lactation and requirements for the second part of lactation [1,2].
The aim of this research is to determine which are the influences of the food ration structure on the milk production in a first period lactation and on the weight of lambs in the first month of life.

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## 2. Materials and methods

The research was conducted in a private company, on the black head sheep breed from Teleorman. There have been three experimental groups consisting of sheep who have given birth once or twice, evenly distributed in three groups, the sheep had an average weight of 50 -55 kg. All groups sheeps were feeding with the same amoont of food, but the ration structure was diferant for each. As one can see from the table. 1, feeding sheep were given three types of feed rations as follows: - group I was fed with a ration of fiber type, the hays represented 65-70% of the ration DM, sopplemented with 2%-3% suculente feed and 20%-25% grain mixture ; - group II received a ration containing suculente feed in the proportion of 38-42% of total DM of the ration, supplemented with fiber feed at a rate of 30-32% and grain mixture at a rate of 25-30%;- group III was fed with a ration food predominantly concentrated in a proportion of 45-50% of total

DM of the ration, supplemented with hays 38-42% and suculent feed 5-10% [3,4].

**Table 1.** Experimental scheme

| Group | Ration food type | DM content (%) | | |
|---|---|---|---|---|
| | | Fibrous | Juicy | Concentrate |
| I | Fibrous type | 70-75 | 2-3 | 20-25 |
| II | Juicy type | 30-35 | 28-32 | 35-40 |
| III | Concentrate type | 35-40 | 5-10 | 50-55 |

## 3. Results and discussion

The three groups of sheep were fed with roughly eqal standard of food. Energy substances content was expressed in UNC and ranged between 1.26 to 129, while contents of protein substances ranged between 113-120 PDIN. After careful study of how the feed was consumed, it was concluded that in general all groups of animals were given rations consumed well. Feed concentrates were totally consumed by all groups of animals. The hays were consumed in excess by 95% while all groups were suculente feed was consumed a greater proportion of the groups I and III (93 - 96%), while group II, consumed the same feed in a large period of time and in a smaller proportion (90-92%) [5]. Feed rations of all three experimental groups were supplemented with 20 g forage chalk, and salt was administered ad libitum in the form of lumps of salt.

**Table 2**. Sheeps given feed rations in the first period of lactation

| Given feed | Kg | SU(kg) | UNC | PDIE |
|---|---|---|---|---|
| **Fibrous ration type** | | | | |
| Clover hay | 1,10 | 0,91 | 0,67 | 71 |
| Silage | 0,55 | 0,09 | 0,09 | 6 |
| Corn+barley | 0,50 | 0,40 | 0,50 | 42 |
| Total | | 1,40 | 1,26 | 119 |
| **Suculente ration type** | | | | |
| Clover hay | 0,50 | 0,42 | 0,28 | 31 |
| Silage | 2,30 | 0,39 | 0,39 | 24 |
| Corn+barley | 0,50 | 0,40 | 0,50 | 42 |
| Soybean meal | 0,18 | 0,15 | 0,12 | 16 |
| Total | | 133 | 1,29 | 113 |
| **Concentrate ration type** | | | | |
| Clover hay | 0,70 | 0,57 | 0,39 | 42 |
| Silage | 0,80 | 0,14 | 0,14 | 9 |
| Corn+barley | 0,60 | 0,48 | 0,60 | 50 |
| Soybean meal | 0,21 | 0,18 | 0,14 | 19 |
| Total | | 1,37 | 1,27 | 120 |

It was estimated milk production of sheep, in the first month of lactation when the feeding period lambs consists almost exclusively of breast milk.
To estimate milk production, has been used the milk equivalence for determining the weight gain of lambs, which was later transformed into milk.
The analysis of specific works shows that the 1 kg weight gain in the first month of life of the lamb is done with a consumption of 5 kg of milk, Th Nica -1958, Burlacu Gh-2002.
This method of estimating milk production in the first month of lactation is considered the most accurate, because when using the method of separation of lambs and milking the sheep, they retain a fairly milk for lamb, so the results will always be false .
The data presented in Table. 3, one can easily see that the in a first month of lactation, milk production in all groups exceeded the value of 45 kg.
In group I, group which was fed with a ration consisting on fibrous type, average quantity of milk was 49.5 kg.
In group II, group which was fed with a ration consisting based on suculente feed, the average quantity of milk was the lowest, 47.65 kg.
In group III, group which was fed with a ration consisting based on concentrates the average quantity of milk was 51.35 kg.

**Table 3**. Milk in the first month of lactation

| Specification | Group I | Group II | Group III |
|---|---|---|---|
| Body weight of lambs per sheep(kg) | | | |
| n | 30 | 30 | 30 |
| X±sx | 6,49±0,159 | 6,64±0,152 | 6,79±0,177 |
| V% | 9,973 | 10,62 | 10,21 |
| X±sx | 16,35±0,286 | 16,17±0,314 | 17,06±0,321 |
| V% | 12,43 | 11,73 | 13,12 |
| Weight gain (Kg) | | | |
| n | 30 | 30 | 30 |
| X±sx | 9,86±0,328 | 9,53±0,286 | 10,27±0,319 |
| V% | 14,41 | 15,58 | 15,68 |
| Milk in the first month of lactation (kg) | | | |
| n | 30 | 30 | 30 |
| X±sx | 49,30±1,53 | 47,65±1,87 | 51,35±1,49 |
| V% | 16,29 | 13,92 | 15,34 |

Body weight of lambs**.** In Table 3, which is given weight of lambs at birth and body weight at 30 days. Also it was calculated average weight gain of lambs in the first month of life.

Body weight of lambs derived from the three groups had almost similar values, being 5.19 kg for lambs coming in group I, 5.31 kg for lambs derived from group II and 5.43 kg for lambs derived from group III.
Concerning the body weight at 30 days , these are 13.08 kg for lambs derived from group I, 12.94 kg for lambs derived from group II and 13.51 for the lambs derived from group III.

**Table 4.** The body weight of the lambs

| Specification | Group I | Group II | Group III |
|---|---|---|---|
| Birth weight of lambs(Kg) | | | |
| n | 38 | 37 | 38 |
| X±sx | 5,19±0,159 | 5,31±0,152 | 5,43±0,177 |
| V% | 11,90 | 12,24 | 13,51 |
| Weight at 30 days (Kg) | | | |
| n | 38 | 37 | 37 |
| X±sx | 13,08±0,460 | 12,94±0,323 | 13,65±0,434 |
| V% | 13,76 | 15,44 | 16,82 |
| Average dauly gain(g) | | | |
| n | 38 | 37 | 37 |
| X±sx | 263±8,62 | 254±9,14 | 274±7,21 |
| V% | 17,64 | 18,36 | 18,94 |

Regarding the general weight gain, he had averages between 254 g and 274 g, the best results occurring for the lambs derived from the group III mother sheep, 274 g. For the lambs derived from group I mother sheep who was feed with diets based on fibrous, the average gain was 263 g, while the lambs coming from the group II mother sheep the average gain is only 254 g.

## 4. Conclusions

Based on research conducted following conclusions can be drawn:
1. The structure of the rations affect the morpho-productive parameters of sheep during milk feed period of the lambs.
2. The rations types feed concentrate and fibrous ensures higher production results compared with type suculent forage rations.
3. Milk production in the first month of lactation estimated by the growing gain of lambs, was 51.35 liters, respectively 49.30, in groups fed with a ration of concentrate and fibrous type and 47.65 liters in a case of the group fed with a juicy type ratio.
4. Average daily body weight growth rate of lambs during the first month of age showed no great differences (274 g respectively 263g) in groups of sheep fed with concentrate ration type and fiber ration type, and lower in the group fed with a juicy type ration respectively 254 g.

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