

RESEARCH REGARDING FEEDING OPTIMIZATION OF KIDS REARED IN DIFFERENT SYSTEMS AND THEIR PRODUCTIVE PERFORMANCES

D. Simeanu^{1*}, C. Pascal¹, C. Irimia¹, C. Neacșu², B.V. Avarvarei¹

¹University of Agricultural Sciences and Veterinary Medicine Iași, Romania

²ICDCOC Palas – Constanța, Romania

Abstract

Research was carried out on a flock of Carpatină goat breed which was divided in two batches – 2 x 50 heads. For research were randomized formed two batches of goat male youth, one being fattened in intensive system for 120 days, and the second one into a semi-intensive system for 180 days. Maintenance of caprine was realised for 150-160 days in stabulation and 205-215 days at pasture. In the current experiment we track the dynamics of corporal mass, carcass dimensions and performances at slaughtering. By kids fattening in intensive system were obtained better results with 11.8% face to kids fattened in semi-intensive system regarding the total corporal mass gain, and from the point of view of DMG, at batch fattened intensively value was higher with 66.7%.by practicing the semi-intensive fattening system at kids belonging to Carpatină breed were obtained carcasses with a very good quality and also was obtained a decrease of production costs, during grazing period the foddering costs being much lower in comparison with the foddering costs during stabulation period.

Keywords: kids, optimization of nutrition, intensive system, semi-intensive system, slaughtering yield

INTRODUCTION

Caprine rearing is an old occupation of animal breeders from many world areas, as well as in Romania [18].

From the ancient times caprines' rearing and exploitation had a remarkable economic importance, due to obtained productions and also due to the fact that goat breed is represented by less pretentious animals face to maintenance and feeding conditions. They are growing very well in arid and semi-arid zones. Adaptable to any climate, goat could be founded at tropics as well as in the northern areas, but of course the best development is assured in zones with temperate climate [2], [5], [6].

Goats could move for over 4 hours to assure their food and during one day could cover distances greater with 50% than ovine and with 80% than bovines.

Caprines can easily adapt to the lack of water in drought areas, with reduced water sources, the necessary for vital functions being

taken from the consumed fodder or when is founded a water source are able to consume a large quantity of water, fact which at other breeds could conduce to alteration of health state. Goats consume fodders which no other ruminant will be able to eat, even being hungry (branches, buds, tree bark), capitalizing well the inferior cellulose residuum [7], [8], [24].

Caprines' rearing presents multiple advantages, due to the fact that demand low investments and assure realization of a great productivity, with a high and immediate profitability [16], [17].

Meat production, even if have a reduced rate, however, in actual conditions of a rapidly increasing of world population, increasing of human life span, increasing of level of living, present a remarkable interest. This product could be obtained from all caprine breeds, being consumed also in economical developed countries as well as in developing countries [20], [25]. It is preferred kids meat, which is considered by some consumers superior to lamb meat, due to its sensorial characteristics and for low fat content (some consumers appreciate more kids meat than lamb meat - in Greece and Spain) [24].

*Corresponding author: dsimeanu@uaiasi.ro

The manuscript was received: 14.10.2017

Accepted for publication: 19.04.2018

For caprines' exploitation in direction of meat production there are breeds and hybrids with a corporal mass and fattening capacity which assure a high economic efficiency [5], [14].

Kids' intensive and semi-intensive rearing and fattening technologies assure the increasing of meat production and represent a rentable activity for caprine breeders. Kids' mass, their fattening state and their conformation represent official appreciation criteria for fattened kids' meat [12].

To improve meat production was utilised intensive and semi-intensive fattening system of goat youth, till the age of 6 months and mass of 32-33 kg for caprine youth [15].

Experience of intensive fattening system, in permanent stabulation (mainly utilised at ovine breed), could be capitalised by resumption of this technology, which proved to be profitable, from nutritional point of view, as well as from economical point of view, through utilisation of cheaper fodders, which allow to farmers to obtain higher profits [13], [15], [22].

Also, utilisation of semi-intensive technology, by alternation of fattening periods at pasture and in permanent stabulation, represent an economically fattening system, with reduced financial efforts, especially if there are suitable grazing areas, appropriate from the vegetal mass quality point of view.

By application of intensive or semi-intensive fattening technology is aimed to double caprines' meat production, with reduced financial efforts, activity which could contribute to effectiveness of caprines' exploitations.

Changes produced in Romania in the last years had as effect the reorientation of caprines' rearing in profitable directions and scientific research have as priority goal elaboration of strategies which will lead at integration of rearing of those animals into an efficient agricultural system, organized on principles of market economy. For increasing of economical efficiency of caprine exploitations the aims are to improve the sequential frames which compose the technological flow for rearing and exploitation of kids for meat production, using efficiently cheap resources of fodders, assuring in shelters and paddocks an optimal

density on square unit, tracking to obtain daily mean gains which will assure an optimal mass of the products at the end of fattening period [17].

Choosing of kids' fattening technology in intensive or semi-intensive system must be done function of geo-climatic conditions, existent technical-material base and economical efficiency of that activity. In private households, where goats' number is relatively small, it is suitable to use semi-intensive fattening system and in the case of greater exploitations it is recommended utilization of intensive fattening system [3], [4], [20].

Caprine breed have an increasing economical significance not only in developing countries but also in the developed ones, where in the last period was realised modernization, improvement and intensification of rearing systems and especially of fattening ones. So, in France, country with a caprine flock in expansion, goat holds all the productivity records.

In Romania, in nowadays conditions could be observed that more breeds are oriented to rearing of an increased number of goats, for own needs or even for industrialization of products, from ameliorated breeds or nucleus.

MATERIAL AND METHOD

Research was carried out on a flock of Carpatină goat breed from ICDCOC Palas - Constanța: adult goats, 2 batches – 2 x 50 heads. One of the batches was fattened in intensive system for 120 days, and the second one in semi-intensive system for 180 days.

Fattening of caprine youth in intensive system was effectuated in 120 days structured in 3 stages: *stage I* – “adaptation” - 15 days; *stage II* – “itself fattening” - 80 days; *stage III* – “finishing” - 25 days [1], [9].

Fattening of caprine youth in semi-intensive system was realised in 180 days with the following structure: a stabulation period composed by a 15 days adaptation period and a 15 days period for growing and fattening; a grazing period, formed by a 15 days adaptation period, in which kids received also a supplement of fodders administrated in feeders in paddock and a 90 days period of growing and fattening in which kids only grazed. After that it followed

the second period of stabulation formed by two phases, a 10 days adaptation phase and a 35 days finishing phase [10], [11].

During grazing period fattening of caprine youth was realised with green mass existent on a cultivated pasture, having in its composition the fodder mixture presented in table 1.

Kids grazed on sowed plots at which were utilised a mixture of 70-75% gramineae (*Dactylis glomerata*, *Festuca pratensis*,

Lolium perene) and 25% perennial legumes (*Medicago sativa*, *Trifolium repens*) [19].

In table 1 is presented the dynamics of gramineae percent, from 81.2%, in 1st cycle of vegetation to 63.6% at last vegetation cycle (5th cycle). Legumes which are in a rate of 15.63% in first cycle increase till 38.70% in the last cycle and the highest consumption degree is at first cycle, 94.13%.

Table 1 Dynamics of floral composition on grazing cycles

| Vegetation cycle | Gramineae (%) | Legumes (%) | Other plants (%) | Consumption degree (%) |
|------------------|---------------|-------------|------------------|------------------------|
| I | 81.2 | 15.63 | 3.15 | 94.13 |
| II | 78.5 | 15.80 | 5.70 | 92.68 |
| III | 70.0 | 21.60 | 8.40 | 92.16 |
| IV | 71.2 | 30.60 | 8.20 | 90.16 |
| V | 63.6 | 38.70 | 7.70 | 89.41 |

The transition from fattening on pasture to stabulation fattening was realised through a 15 days adaptation period, by increasing the daily quantities of concentrated fodders. In stabulation period kids were feed without any restriction, with a unique mix in which the rate of the fodders was 30% fibrous and 70% concentrated. Water and bulk salt were assured without any restriction, both on pasture and as well as in stabulation. Monthly was done the weighting of animals till the end of fattening period.

Control of fodder consumption was realised in stabulation period by fodders' weighting, on batches, in the moment of administration and of the unconsumed remains, at an interval of 24 hours, more precisely in the next morning.

For grazing period the quantity of consumed green mass, was established by using the method of check points, by difference between the estimated quantity of green mass at the middle of grazing period and quantity of green mass which remained unconsumed, at the end of grazing period. During grazing period foddering diet was completed with a supplement of fibrous and concentrated fodders.

Control of meat production was effectuated by weighting of kids at birth, at 28 days and at weaning (60 days), being recorded

the mass gain realised by them, on the whole period and per day. After weaning, caprine youth was introduced to fattening and was weighted at the beginning of fattening and at the end of each fattening phase, calculating the daily gain, on period and per each phase.

At the end of fattening period were effectuated the control slaughtering. Before slaughtering kids were subjected to a 24 hours diet. Slaughtering was realised through an adequate working technology, regarding slaughtering, bleeding, skinning and evisceration. Was effectuated the appreciation of body's component parts rate, by detachment of head, extremities, viscera, testicles, followed by their separate weighting, weighting of carcass at warm and cold (after 24 hours of refrigeration at 4°C).

Calculus of slaughtering yield was effectuated as follows: *slaughtering yield* – as rate between carcass mass after 24 hours from slaughtering and animals' live mass before slaughtering x 100; *commercial yield* - in which were included also the internal organs.

Cutting of carcass on commercial regions was effectuated after the whole carcass was sectioned along spine, exactly in two halves, after than was effectuated the division in different commercial regions, in according with French cutting system.

Data processing

The main experimental data were statistically processed, calculating: arithmetic mean, variance, standard deviation of mean, variability coefficient [21].

For testing of statistical significance of differences between the means of studied characters was applied Fisher test, included in Microsoft Excel software.

RESULTS AND DISCUSSIONS

Kids' fattening in intensive and semi-intensive system, calculus of daily mean gain

Starting with the age of 8-10 days kids were secured in specially designed pens with very good quality hay and concentrated fodders, formed by 50% corn, 40% oat and 10% meals, administration being made without any restriction. Those foddering continued till kids' weaning, after that was effectuated the fattening of kids. Were formed the experimental batches, randomized chosen, 25 heads for each batch, batch at which fattening was realised in intensive system for 120 days and the batch at which fattening was effectuated in semi-intensive system for 180 days. For intensive fattening of caprine youth was used the following fattening scheme, of 120 days, structured in 3 stages:

- **stage I, "adaptation"**, in which animals get used with the new feeding regime and with the administration way of the fodders; those

ones were grinded, weighted and mixed, forming an unique mixture which was "ad libitum" administrated, in 3 daily meals, mixture content in energy and nutritive substance was 0.84 UFC, 89 g PDIN and 72 g PDIE; was tracked the assurance of water and salt for licking, without any restrictions, were chosen the days for controlling of fodder consumption, those one being established at 3 days; adaptation took place during 15 days (tab. 2);

- **stage II "itself fattening"** had a duration of 180 day and consisted in administration of grinded fodders, dosed and mixed into a unique mixture, the content of those mixture in energy and nutritive principles being 1 UFC, 131 g PDIN and 89 g PDIE; fodders were administrate in two daily meals, for not disturbing too much the animals; was tracked the assurance of water and salt for licking, without any restrictions, were chosen the days for controlling of fodder consumption, one day per week and control days of fattening stage, one day per month (tab. 3);

- **stage III "finishing"** this stage lasts for 25 days and consisted in food administration also as a unique mix, "ad libitum", in 2 daily meals, nutritive value of the mixture being 1.35 UFC, 165 g PDIN and 132 g PDIE; control of food consumption being made for 4 times during stage, which means one day per week (tab. 4).

Table 2 Fodder mix administrated to caprine male youth in fattening period in intensive system – adaptation phase

| Fodders | kg | DM (kg) | UFC | PDIN (g) | PDIE (g) |
|--------------|-------|-------------|-------------|-----------|-----------|
| Alfalfa hay | 0.30 | 0.26 | 0.17 | 28 | 14 |
| Corn | 0.25 | 0.22 | 0.26 | 24 | 29 |
| Oat | 0.25 | 0.22 | 0.29 | 19 | 17 |
| Wheat bran | 0.20 | 0.18 | 0.12 | 18 | 12 |
| Chalk | 0.005 | - | - | - | - |
| Salt | 0.005 | - | - | - | - |
| Total | - | 0.88 | 0.84 | 89 | 72 |

Table 3 Fodder mix administrated to caprine male youth in fattening period in intensive system – itself fattening phase

| Fodders | kg | DM (kg) | UFC | PDIN (g) | PDIE (g) |
|--------------|-------|-------------|-------------|------------|-----------|
| Alfalfa hay | 0.72 | 0.61 | 0.43 | 68 | 33 |
| Corn | 0.20 | 0.17 | 0.21 | 19 | 23 |
| Soybean meal | 0.10 | 0.09 | 0.14 | 31 | 18 |
| Barley | 0.18 | 0.16 | 0.22 | 13 | 15 |
| Chalk | 0.005 | - | - | - | - |
| Salt | 0.005 | - | - | - | - |
| Total | - | 1.03 | 1.00 | 131 | 89 |

Table 4 Fodder mix administrated to caprine male youth in fattening period in intensive system – finishing phase

| Fodders | kg | DM (kg) | UFC | PDIN (g) | PDIE (g) |
|--------------|----------|-------------|-------------|------------|------------|
| Alfalfa hay | 0.40 | 0.34 | 0.24 | 38 | 18 |
| Corn | 0.50 | 0.43 | 0.52 | 48 | 58 |
| Soybean meal | 0.20 | 0.18 | 0.28 | 61 | 36 |
| Barley | 0.25 | 0.22 | 0.31 | 18 | 20 |
| Chalk | 0.010 | - | - | - | - |
| Salt | 0.010 | - | - | - | - |
| Total | - | 1.17 | 1.35 | 165 | 132 |

In first stage – adaptation period – in structure of mixture dominated concentrated fodders 70.45%, and rate of fibrous fodders (alfalfa hay) was of a third.

In second phase – itself fattening period – rate of fibrous fodders increased at around 60%, and the one of concentrated fodders was about 40%; even so the nutritive value of mixture increased.

In third phase, finishing - structure of fodder mix contained around 70% concentrated fodders while fibrous ones had a rate of around 30%.

Fattening of caprine youth in semi-intensive system was done in 180 days structured in three periods:

- **first “stabulation” period** composed by an “adaptation phase” of 15 days, when kids received a fodder mix with a nutritive value of 0.98 UFC, 120 g PDIN and 90 g PDIE and

“growing and fattening period” of 15 days in which kids received a diet with a nutritive content of 1.05 UFC, 130 g PDIN and 94 g PDIE (tab. 5 and tab. 6);

- **“grazing” period**, formed by an “adaptation phase” of 15 days, in which kids received also a supplement of fodders administrated in feeders in paddock and a “growing and fattening” of 90 days in which kids only grazed;

- **second “stabulation” period** formed by two phase, an “adaptation phase” of 10 days in which kids received a fodder mix with a nutritive value of 1.15 UFC, 107 g PDIN and 92 g PDIE and a “finishing phase” of 35 days in which kids received a unique mix with an energetic and nutritive substances content of 1.35 UFC, 165g PDIN and 132 g PDIE (tab. 7 and tab. 8).

Table 5 Fodder mix administrated to caprine male youth in fattening period in semi-intensive system, in first fattening period in stabulation, adaptation phase

| Fodders | kg | DM (kg) | UFC | PDIN (g) | PDIE (g) |
|--------------|----------|-------------|-------------|------------|-----------|
| Alfalfa hay | 0.30 | 0.26 | 0.17 | 28 | 14 |
| Corn | 0.25 | 0.22 | 0.26 | 24 | 29 |
| Oat | 0.25 | 0.22 | 0.29 | 19 | 17 |
| Wheat bran | 0.20 | 0.18 | 0.12 | 18 | 12 |
| Soybean meal | 0.10 | 0.09 | 0.14 | 31 | 18 |
| Chalk | 0.005 | - | - | - | - |
| Salt | 0.005 | - | - | - | - |
| Total | - | 0.97 | 0.98 | 120 | 90 |

Table 6. Fodder mix administrated to caprine male youth in fattening period in semi-intensive system, in first fattening period in stabulation, growing and fattening phase

| Fodders | kg | DM (kg) | UFC | PDIN (g) | PDIE (g) |
|--------------|----------|-------------|-------------|------------|-----------|
| Alfalfa hay | 0.40 | 0.34 | 0.24 | 38 | 18 |
| Corn | 0.25 | 0.22 | 0.26 | 24 | 29 |
| Oat | 0.25 | 0.22 | 0.29 | 19 | 17 |
| Wheat bran | 0.20 | 0.18 | 0.12 | 18 | 12 |
| Soybean meal | 0.10 | 0.09 | 0.14 | 31 | 18 |
| Chalk | 0.005 | - | - | - | - |
| Salt | 0.005 | - | - | - | - |
| Total | - | 1.05 | 1.05 | 130 | 94 |

Table 7 Fodder mix administrated to caprine male youth in fattening period in semi-intensive system, in second fattening period in stabulation, adaptation phase

| Fodders | kg | DM (kg) | UFC | PDIN (g) | PDIE (g) |
|--------------|----------|-------------|-------------|------------|-----------|
| Alfalfa hay | 0.30 | 0.26 | 0.17 | 28 | 14 |
| Corn | 0.25 | 0.22 | 0.26 | 24 | 29 |
| Oat | 0.25 | 0.22 | 0.29 | 19 | 17 |
| Barley | 0.25 | 0.22 | 0.31 | 18 | 20 |
| Wheat barn | 0.20 | 0.18 | 0.12 | 18 | 12 |
| Chalk | 0.010 | - | - | - | - |
| Salt | 0.010 | - | - | - | - |
| Total | - | 1.10 | 1.15 | 107 | 92 |

Table 8 Unique mix administrated to caprine male youth in fattening period in semi-intensive system, in second fattening period in stabulation, finishing phase

| Fodders | kg | DM (kg) | UFC | PDIN (g) | PDIE (g) |
|--------------|----------|-------------|-------------|------------|------------|
| Alfalfa hay | 0.40 | 0.34 | 0.24 | 38 | 18 |
| Corn | 0.50 | 0.43 | 0.52 | 48 | 58 |
| Soybean meal | 0.20 | 0.18 | 0.28 | 61 | 36 |
| Barley | 0.25 | 0.22 | 0.31 | 18 | 20 |
| Chalk | 0.010 | - | - | - | - |
| Salt | 0.010 | - | - | - | - |
| Total | - | 1.17 | 1.35 | 165 | 132 |

Fattening control was effectuated by individual periodical weightings establishing the growing speed, expressed by the total gain on phases of fattening period and by calculus of daily mean gain.

At fattening of Carpatină breed kids in intensive and semi-intensive system were obtained the corporal masses and gains presented in table 9.

Table 9 Evolution of corporal mass of kids from Carpatină breed fattened in intensive and semi-intensive system

| Fattening system | Corporal mass at beginning of fattening (kg) | | Corporal mass at end of fattening (kg) | | Total mass gain (kg) | | Daily mean gain (g) | |
|--|--|-------|--|-------|---------------------------|-------|---------------------------|-------|
| | $\bar{X} \pm s_{\bar{X}}$ | V% | $\bar{X} \pm s_{\bar{X}}$ | V% | $\bar{X} \pm s_{\bar{X}}$ | V% | $\bar{X} \pm s_{\bar{X}}$ | V% |
| Semi-intensive fattening for 180 days (n=25) | 12.72±0.32 | 12.57 | 26.23±0.81 | 15.44 | 13.51±0.67 | 24.79 | 75±2.2 | 14.66 |
| Intensive fattening for 120 days (n=25) | 12.25±0.44 | 17.95 | 27.35±0.58 | 10.60 | 15.10±0.47 | 15.56 | 125.8±3.4 | 13.51 |

Carpatină breed kids from the batch with a fattening in semi-intensive system, 180 days, had at the beginning of fattening a mean weight of 12.72±0.32 kg, and the ones from batch with a fattening in intensive system, 120 days had at beginning of fattening a mean weight of 12.25±0.44 kg.

Mean weight at the end of fattening period, at Carpatină breed kids from the batch fattened in semi-intensive system was 26.23±0.81 kg, and at the ones from the batch fattened in intensive system was 27.35±0.58 kg. Although kids' mean weight at beginning of fattening was lower at batch which was fattened in intensive system, the final weight

at the end of fattening was higher at kids which were fattened in intensive system.

Total weight gain at Carpatină breed kids from the batch fattened in semi-intensive system was 13.51 ± 0.67 kg respectively 15.10 ± 0.47 kg at the batch fattened in intensive system.

Daily mean gain at kids from batch fattened in semi-intensive system was 75 ± 2.2 g/day and 125.8 ± 3.4 g/day at batch fattened in intensive system. Could be also remarked the differences between daily mean gains realised by those two kids' batches, daily mean gain realised by the kids from batch fattened in intensive system was higher.

Effectuation of control slaughtering, carcass quality appreciation, effectuation of carcass cuttings at fattened kids

At the end of fattening period were effectuated experimental slaughtering at kids' batches with a semi-intensive and intensive fattening and were appreciated the obtained carcasses. Before slaughtering kids were subjected to a 24 hours diet.

Slaughtering was realised through an adequate working technology, regarding slaughtering, bleeding, skinning and evisceration. Was effectuated the appreciation of body's component parts rate, by detachment of head, extremities, viscera, testicles, followed by their separate weighting, weighting of carcass at warm and cold (after 24 hours of refrigeration at 4°C).

The results of experimental slaughtering regarding appreciation of carcasses obtained from kids fattened in those two systems, semi-intensive and intensive, are presented in table 10.

From the data in table 10 could be remarked the greater dimensions of carcass at

kids fattened in intensive system, especially the greater dimensions of haunch, haunch width being 21.47 ± 2.03 cm, at kids fattened in intensive system face to 18.55 ± 1.82 cm, as it is at the carcasses of kids fattened in semi-intensive system. Also the haunch length is greater at kids fattened in intensive system, being 28.67 ± 2.01 cm, face to 26.87 ± 2.06 cm, as it is at the carcasses of kids fattened in semi-intensive system. Chest width is greater at kids fattened in intensive system, being 17.98 ± 1.35 cm face to 15.67 ± 1.15 cm at kids fattened in semi-intensive system. Thorax depth is greater at kids fattened in intensive system, being 27.41 ± 2.07 cm face to 23.45 ± 2.22 cm at kids fattened in semi-intensive system. Thorax perimeter is greater at kids fattened in intensive system, being 72.95 ± 4.27 cm and 67.15 ± 3.74 cm at kids fattened in semi-intensive system. Totally, carcass length is greater at kids fattened in intensive system, being 62.12 ± 4.6 cm and 57.12 ± 3.51 cm at kids fattened in semi-intensive system.

From the data in table 11 could be remarked the greater values of slaughtering yield at Carpatină breed kids fattened in intensive system, $43.94 \pm 1.02\%$, face to $43.42 \pm 0.95\%$ at Carpatină breed kids fattened in semi-intensive system due to higher weights of carcasses (12.02 ± 0.47 kg at Carpatină breed kids fattened in intensive system and 11.39 ± 1.02 kg at Carpatină breed kids fattened in semi-intensive system), also the commercial yield had greater values at kids fattened in intensive system, $48.95 \pm 1.01\%$ face to $48.76 \pm 0.98\%$, as was obtained at kids fattened in semi-intensive system.

Table 10 Appreciation of kids' carcasses fattened in semi-intensive and intensive system

| Specification | Kids from Carpatină breed fattened in semi-intensive system (n=9) | | Kids from Carpatină breed fattened in intensive system (n=9) | |
|------------------|---|-------|--|-------|
| | $\bar{X} \pm s_{\bar{x}}$ | V% | $\bar{X} \pm s_{\bar{x}}$ | V% |
| Carcass length | 57.12 ± 3.51 | 18.43 | 62.12 ± 4.6 | 22.21 |
| Chest width | 15.67 ± 1.15 | 22.01 | 17.98 ± 1.35 | 22.52 |
| Thorax depth | 23.45 ± 2.22 | 28.40 | 27.41 ± 2.07 | 22.65 |
| Thorax perimeter | 67.15 ± 3.74 | 15.70 | 72.95 ± 4.27 | 17.55 |
| Haunch width | 18.55 ± 1.82 | 29.43 | 21.47 ± 2.03 | 28.36 |
| Haunch length | 26.87 ± 2.06 | 22.99 | 28.67 ± 2.01 | 21.03 |

Table 11 Results of experimental slaughtering

| Specification | MU | Kids from Carpatină breed fattened in semi-intensive system (n=9) | | Kids from Carpatină breed fattened in intensive system (n=9) | |
|---|----|---|-------|--|-------|
| | | $\bar{X} \pm s_{\bar{x}}$ | V% | $\bar{X} \pm s_{\bar{x}}$ | V% |
| Live mass | kg | 26.23±0.81 | 15.44 | 27.35±0.76 | 8.33 |
| Mass of carcass | kg | 11.39±0.51 | 13.43 | 12.02±0.47 | 11.73 |
| Slaughtering yield (slaughtering house) | % | 43.42±0.95 | 6.56 | 43.94±1.02 | 6.96 |
| Commercial yield | % | 48.76±0.98 | 6.02 | 48.95±1.01 | 6.18 |
| Rate meat/bones | | 3.22/1 | | 3.81/1 | |

At determination of meat/bones rate, at Carpatină breed kids fattened in intensive system was obtained a rate of 3.81/1, and at Carpatină breed kids fattened in semi-intensive system was recorded a rate of 3.22/1.

Was effectuated a commercial cutting of the obtained carcasses from Carpatină breed kids fattened in intensive and semi-intensive system, calculating the rate of meat on qualities (1st quality, 2nd quality and 3rd quality), and data are presented in table 12.

Table 12 Commercial cutting of kids' carcasses fattened in semi-intensive and intensive system

| Meat quality (%) | Semi-intensive fattened kids | Intensive fattened kids |
|-------------------------------------|------------------------------|-------------------------|
| 1 st quality - haunch | 32.12 | 32.68 |
| - fillet | 9.15 | 9.55 |
| - cutlet I | 8.98 | 9.04 |
| Total 1st quality | 50.25 | 51.27 |
| 2 nd quality - cutlet II | 7.15 | 7.27 |
| - shoulder | 25.10 | 25.40 |
| Total 2nd quality | 32.25 | 32.67 |
| 3 rd quality - chest | 10.70 | 10.20 |
| - neck | 6.80 | 5.86 |
| Total 3rd quality | 17.50 | 16.06 |

Analysing the data from table 12 could be observed that the rate of 1st quality commercial regions at Carpatină breed kids fattened in semi-intensive system was 50.25%, haunch representing 32.12%, fillet 9.15% and cutlet I 8.98%, and at Carpatină breed kids fattened in intensive system was 51.27%, haunch representing 32.68%, fillet 9.55% and cutlet I 9.04%.

2nd quality represented 32.25% at Carpatină breed kids semi-intensive fattened, cutlet II representing 7.15% and shoulder 25.10%, and at Carpatină breed kids intensive fattened 32.67%, cutlet II representing 10.20% and shoulder 25.40%.

3rd quality represented 17.50% at Carpatină breed kids' semi-intensive fattened, chest 10.70% and neck 6.80%, and at Carpatină breed kids' intensive fattened was 16.06%, chest 10.20% and 5.86%.

We can conclude that intensive fattening system at Carpatină breed kids offered better results in comparison with the ones obtained by Carpatină breed kids fattened in semi-intensive system. However, by using the semi-intensive fattening system at Carpatină breed kids were obtained carcasses of a very good quality. Simultaneously, by practicing of semi-intensive fattening system at kids was obtained a decrease of production costs, during grazing period costs with fodders being much lower in comparison with costs for fodders from stabulation period, which makes this system to be more preferred than the intensive fattening system for Carpatină breed kids.

CONCLUSIONS

For intensive fattening of caprine youth was used the following fattening scheme, of 120 days, structured in 3 stages: stage I,

“adaptation”, which lasts for 15 days, content of daily diet in nutritive principles was 0.84 UFC, 89 g PDIN and 72 g PDIE; stage II “itself fattening” which lasts for 80 days, and content of daily diet in nutritive principles was 1.0 UFC, 131 g PDIN and 89 g PDIE; stage III “finishing” which lasts for 25 days, and content of daily diet in nutritive principles was 1.35 UFC, 165 g PDIN and 132 g PDIE.

Fattening of caprine youth in semi-intensive system was done in 180 days structured in three periods: “first stabulation period” composed by an “adaptation phase” of 15 days, with a content of daily diet in nutritive principles of 0.98 UFC, 120 g PDIN and 90 g PDIE and a 15 days “period of growing and fattening”, with a content of daily diet in nutritive principles of 1.05 UFC, 130 g PDIN and 94 g PDIE; a “grazing period”, formed by an “adaptation phase” of 15 days and a “growing and fattening” of 90 days; “second stabulation period” formed by two phases, an “adaptation phase” of 10 days, with a content of daily diet in nutritive principles of 1.15 UFC, 107 g PDIN and 92 g PDIE and a “finishing phase” of 35 days with a content of daily diet in nutritive principles of 1.35 UFC, 165 g PDIN and 132 g PDIE.

At fattening of Carpatină breed kids in intensive and semi-intensive system were obtained the following results:

- mean weight at the end of fattening period, at Carpatină breed kids from batch with a semi-intensive fattening system, was 26.23 ± 0.81 kg, and at the ones from batch with an intensive fattening system was 27.35 ± 0.58 kg;
- total weight gain at Carpatină breed kids from the batch fattened in semi-intensive system was 13.51 ± 0.67 kg respectively 15.10 ± 0.47 kg at the batch fattened in intensive system sporul;
- daily mean gain at kids from batch fattened in semi-intensive system was 75 ± 2.2 g/day and 125.8 ± 3.4 g/day at batch fattened in intensive system.

Experimental slaughtering at kids batches with semi-intensive and intensive fattening enlightened the followings:

- were noticed the greater dimensions at carcass for kids fattened in intensive system in comparison with the ones fattened in semi-intensive system;

- were especially noticed the greater dimensions of haunch, haunch width being 21.47 ± 2.03 cm, at kids fattened in intensive system face to 18.55 ± 1.82 cm, as it is at the carcasses of kids fattened in semi-intensive system and also the haunch length is greater at kids fattened in intensive system, being 28.67 ± 2.01 cm, face to 26.87 ± 2.06 cm, as it is at the carcasses of kids fattened in semi-intensive system;

- chest width is greater at kids fattened in intensive system, being 17.98 ± 1.35 cm face to 15.67 ± 1.15 cm at kids fattened in semi-intensive system;

- thorax depth is greater at kids fattened in intensive system, being 27.41 ± 2.07 cm face to 23.45 ± 2.22 cm at kids fattened in semi-intensive system;

- thorax perimeter is greater at kids fattened in intensive system, being 72.95 ± 4.27 cm and 67.15 ± 3.74 cm at kids fattened in semi-intensive system;

- carcass length is greater at kids fattened in intensive system, being 62.12 ± 4.6 cm and 57.12 ± 3.51 cm at kids fattened in semi-intensive system.

Were obtained greater values of slaughtering yield at Carpatină breed kids fattened in intensive system, $43.94 \pm 1.02\%$, face to $43.42 \pm 0.95\%$ at Carpatină breed kids fattened in semi-intensive system due to higher weights of carcasses (12.02 ± 0.47 kg at Carpatină breed kids fattened in intensive system and 11.39 ± 1.02 kg at Carpatină breed kids fattened in semi-intensive system).

Commercial yield had greater values at kids fattened in intensive system, $48.95 \pm 1.01\%$ face to $48.76 \pm 0.98\%$, as was obtained at kids fattened in semi-intensive system.

At determination of meat/bones rate, at Carpatină breed kids fattened in intensive system was obtained a rate of 3.81/1, and at Carpatină breed kids fattened in semi-intensive system was recorded a rate of 3.22/1.

At commercial cutting of carcasses obtained from Carpatină breed kids fattened in intensive and semi-intensive system were observed the followings:

- rate of 1st quality commercial regions at Carpatină breed kids fattened in semi-intensive system was 50.25%, haunch

representing 32.12%, fillet 9.15% and cutlet I 8.98%, and at Carpatină breed kids fattened in intensive system was 51.27%, haunch representing 32.68%, fillet 9.55% and cutlet I 9.04%;

- 2nd quality represented 32.25% at Carpatină breed kids semi-intensive fattened, cutlet II representing 7.15% and shoulder 25.10%, and at Carpatină breed kids intensive fattened 32.67%, cutlet II representing 10.20% and shoulder 25.40%;

- 3rd quality represented 17.50% at Carpatină breed kids' semi-intensive fattened, chest 10.70% and neck 6.80%, and at Carpatină breed kids' intensive fattened was 16.06%, chest 10.20% and 5.86%.

Intensive fattening system for kids offered better results in comparison with the ones obtained by kids fattened in semi-intensive system.

By practicing of semi-intensive fattening system at Carpatină breed kids was obtained carcasses with a very good quality and also a decrease of production costs, during grazing period costs with fodders being much lower in comparison with costs for fodders from stabulation period.

We recommend the utilisation of semi-intensive fattening system at Carpatină breed kids for caprine exploitations, having in view the lower production costs and obtaining of very good quality carcasses.

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