

## PARTIAL RESULTS REGARDING THE EXPLOITATION AND MORPHO-PRODUCTIVE TRAITS FOR ALPINA BREED GOATS IN SOUTH OF THE COUNTRY

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### Abstract

*Increasing of goats population, in the last ten years, conduct to the growth of modern capriculture, based on massive imports of performant dairy goats from Alpine and Saanen breeds. Expectations towards a qualitative and quantitative production led to pretty important imports for specialized breeds like the Alpine, from community states, during the last 6 years. This study presents the results of some research started since the last semester of the previous year on some goat livestock from Alpina breed, livestock which was brought to the Garbovi farm, Ialomita county. The livestock presents the following morpho-productive traits, such as: live weight  $59.81 \pm 0.29$  kg, back height  $69.35 \pm 0.29$  cm, croup height  $70.36 \pm 0.18$  cm, oblique body length  $75.9 \pm 0.20$  cm, chest width  $19.69 \pm 0.19$  cm, anterior croup width  $20.52 \pm 0.29$  cm, thoracal perimeter  $91.31 \pm 0.38$  cm, cane perimeter  $9.12 \pm 0.04$  cm, resulting a dolicomorphe body structure. The medium milk production in is of  $1.90 \pm 0.26$  l/head/day during the stalling months November-February, with average of November  $61.07 \pm 1.7$  l, December  $78.56 \pm 2.07$  l, January  $92.34 \pm 2.93$  l, and February  $52.38 \pm 1.38$  l, only during the first 120 days, and the chemical composition of the main constituent parts: Dry matter nonfat 9.3%, protein 3.53%, fat 4.02%, a significant quantitative and qualitative gain of goat milk especially when the local breeds don't yield them. The females prolificity is of 146%, being a lot below the breed average over 130% in comparison with the average proven by the breed but also in comparison with the unameliorated breeds, this aspect being a basical element in selection, next to the milk quantitative aspect. The gain recorded for goat youth over the 90 days is comprised between ADG1 0-30 days is 124.15 g/day, ADG2 30-60 days 209.78 g/day, ADG3 60-90 days 127.32 g/day of males and 106 g/day, 191 g/day, 115 g/day of females, during the whole period which was much over the average of Carpathian breed, especially milk ones, which have typical dolicomorphe structure but with a great productive and somatometrical variability.*

**Key words:** goats production, goats somatometers, body structure, milk production.

### INTRODUCTION

Romanian capriculture record a positive evolution, on the last four decades, because of market demands. In Romania, goat was considered as “the poor's cow”, being also a survival niche of the poor families (Vlad et al., 2009).

In this context, the last ten years was considered very important for modern capriculture because of the big imports from most performants dairy milk goats breeds, like Alpine and Saanen. At that moment, we put the foundations of specialized goat farms, in the direction of exploitation for dairy milk.

For more efficiency, for increasing the milk production but also because of European

foundations, farmers import individuals from Saanen and Alpina breed from different countries of E.U.

In this way it was supported the initiative of small farmers and goat milk producers participating in both the development of a new branch in the field of manufacturing as well as the development of a new sub-branches specialized in dairy goat exploitation (not mixed, milk and meat).

This study is a part of an ample research concerning Alpina goats breed imported in farm A.F.Cojocaru Country-Gîrbovi-Ialomita.

## MATERIALS AND METHODS

The entire herd of goats that were subject to investigation of the livestock stood at the first lactation and the actual imported consisted of young females at first gestation. The biologic material are represented by 85 goats, Alpine breed, imported in summer of 2012 AF Cojocar farm, Gîrbovi village, Ialomita County.

The main measurements were aimed on highlighting the morpho-productive characteristics regarding performances, especially of especially for milk production, but also on how we can improve other characters of our cultural goats breed Carpatina, whose productions still remain modest. Observations were focused on aspects of conformation, primary production- especially milk quantity and quality, basic reproductive indices and growth process dynamic in young goats. For milk production, as the main objective, we made the control of production, based on the control made only in the first four months, or 120 days, of lactation, during lactation because we hope to finalize the lactation in this summer.

Body measurements were start at the birth age, from October last year. We determined live weight, back height, croup height, length and width of the head, oblique body length, chest width, anterior croup width, thoracic perimeter and canon bone perimeter; body weight of young goats from birth to 3 months old to calculate average daily gain; prolificacy; evolution of milk production on the first four mounts (lactation curve); milk chemical composition fiber determination regarding length and finesse.

## RESULTS AND DISCUSSIONS

The biologic material is represented by Austrian Alpine goat breed, at first lactation. It was analyzed through productive performances in actual condition of exploitation.

### *Somatometrical measurements*

The aim of main body size measurements, analyzed in population, was to highlight corporal conformation: live weight  $59.81 \pm 0.29$  kg, back height  $69.35 \pm 0.29$  cm, croup height  $70.36 \pm 0.18$  cm, oblique body length  $75.9 \pm 0.20$  cm, chest width  $19.69 \pm 0.19$  cm, anterior croup width  $20,52 \pm 0,29$  cm, thoracical perimeter  $91,31 \pm 0,38$  cm, cannon

bone perimeter  $9,12 \pm 0,04$  cm. All this measurements are the most important characters, with a large grade of variability, as we can see in graphic, representing the morphological body type and offer us the opportunity to calculate bones index (fig.1).

Injury as measured by the number of goats imported from first lactation were found aspects that highlight the type of conformation of the population, if they fall into certain characteristics of the breed on the main body indices determined from the main somatometries for body indicators.

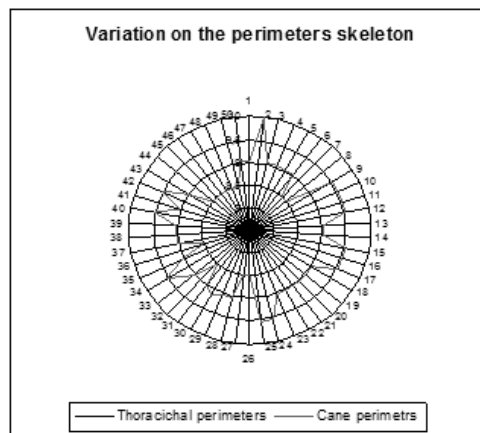


Figure 1. Variation on the perimeters scheleton.

This indices offer us information about corporal conformation, like side body format index (over 110%) and bones index (9.9%). This parameters values reveal a dolicomorphe conformation, typically for this type of breed, with a very good bone structure, but with a large grade of variability due tu the origins of individuals (it comes from different farms). The prolificity of females of goats Alpine was 146%, being a lot below the breed average over 130% in comparison with the average proven by the breed but also in comparison with the unimproved breeds, for example Carpatine breed, this aspect being also a basical element in selection, to next to the milk quantitative aspect. This is another important character fol local bred breeding (Tafta et al., 1993; Vlad et al., 2012).

Dynamic growth process. Its evolution in the young goat reviewed showed that since the birth byproducts Alpina breed have a very large

sexual dimorphism differences in average approx. 18% between the sexes (Vlad et al., 2011; Vlad et al., 2012). The gain recorded for goat youth over the 90 days is comprised between ADG1 0-30 days is 124.15 g/day, ADG2 30-60 days 209,78 g/day, ADG3 60-90 days 127.32 g/day of males and 106 g/day, 191g/day, 115 g/day of females, during the whole period which was much over the average of Carpathian breed. (Figures 2 and 3) (Tafta et al., 1993; Zamfir, 2003).

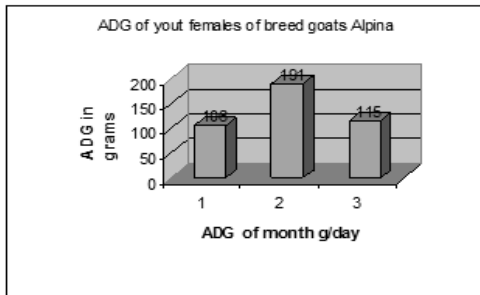


Figure 2. ADG of yout females.

Top or best growth recorded in both sexes of young goat is in the 2nd month of life, thanks to a good potential female lactogen and precocity of youth work and other feed consumption due to early development of enzyme equipment. Comparing with Carpatina breed or with half blood Saanen, we can say that, the average daily gain is good, with same evolution, recording the highest value in the second month, having a slow involution then because of weaning stress, phenomenon justified by a good precocity (Figure 3) (Tafta et al., 1993; Vlad et al., 2012).

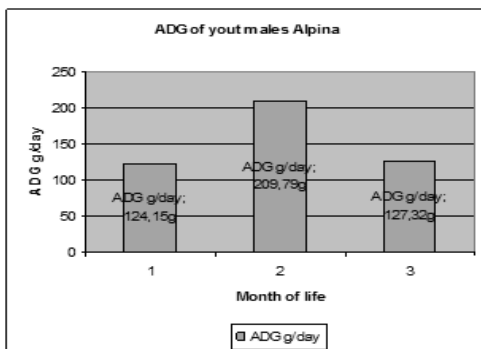


Figure 3. ADG of yout males

Milk production.

The medium milk production is 2,19 l/head/day during the stalling months November-February, with month average of: November  $61.07 \pm 1.7$  l., December  $78.56 \pm 2.07$  l., January  $92.34 \pm 2.93$  l, and February  $52,38 \pm 1.38$  l, only during the first 120 days (Figure 5). This represents the most important character that must be followed during lactation. The character was analyzed on the first half of lactation, aspect who can demonstrate only the beginning of lactation and also the evolution of lactation curve, fact who reveal the high potential of Alpine goats, but who, from some reasons (poor management), have, in this condition, a decreasing curve of lactation after 4 months. Other motivation can be lack of knowledge in dairy goats exploitation and a poor nutrition (Figure 6).

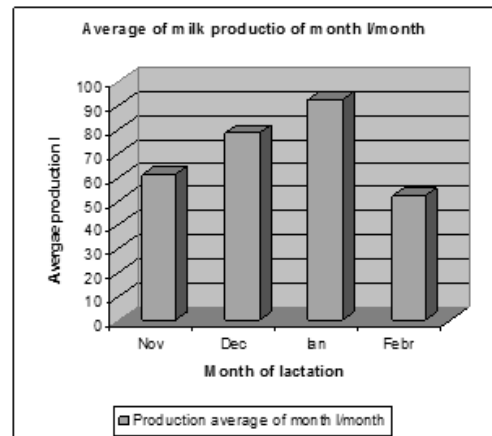


Figure 4. Milk production on month.

Lactation curve.

In this breed, the lactation curve must be slower, to decrease slowly, and after the sixth or seventh month of lactation, to record app. 70 l/head/month (Figure 5).

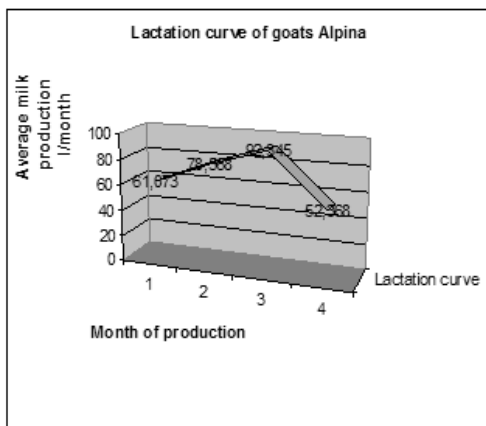


Figure 5. Lactation curve of milk in winter.

The main component elements of goat's milk were determined on the control day (Figure 6). The milk chemical composition during the lactation of may month was: non-fat dry matter 9.33%, protein 3.54%, fat 4.03%, representing a good qualitative production for winter period. On the analysis of histograms for milk production both in the morning and in the evening of the first month of production, data are normally distributed, however, spotlighted differences of the extreme series allow a better selection with animals distribution in stocks but also with specific production (Figure 6) (Vlad et al., 2011; Vlad et al., 2012).

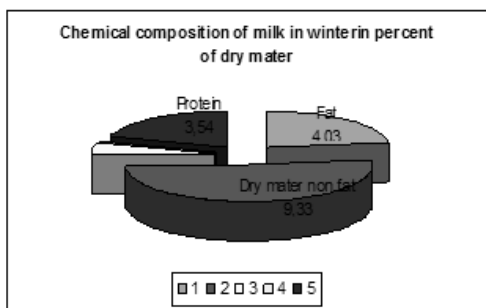


Figure 6. Chemical composition of milk in winter.

## CONCLUSIONS

Our analysis, on primiparous Alpine goat females, imported in this farm from Gîrbovi village, reveal these:

The female primiparous livestock presents the following morpho-productive traits, such as: live weight  $59.81 \pm 0.29$  kg, back height  $69.35$

$\pm 0.29$  cm, croup height  $70.36 \pm 0.18$  cm, oblique body length  $75.9 \pm 0.20$  cm, chest width  $19.69 \pm 0.19$  cm, anterior croup width  $20.52 \pm 0.29$  cm, thoracical perimeter  $91.31 \pm 0.38$  cm, cannon bone perimeter  $9.12 \pm 0.04$  cm, resulting a dolicomorphe body structure. We determinate some indices like side body index (over 110%) and bones index (9.9%), who demonstrate a typically dolicomorphe conformation for dairy goats breeds. Also, we observe, a large grade of variability, in analyzed livestock, because of the different origins of goats (same breed but from different exploitation).

The prolificity of females of Alpine breed, was 146%, being a lot below the breed average over 130%.

The gain recorded for young goats over the 90 days is comprised between ADG1 124.15 g/day, ADG2 is 209.78 g/day, ADG3 is 127.32 g/day of males and 106 g/day, 191 g/day, 115 g/day of females, during the whole period which was much over the average of Carpatina breed performances.

The average milk production was at 2.19 l/head/day during the stalling months November-February, with monthly averages at: November  $61.07 \pm 1.7$  l, December  $78.56 \pm 2.07$  l, January  $92.34 \pm 2.93$  l, and February  $52.38 \pm 1.38$  l, only during the first 120 days. This production, recorded only on first 4 months of lactation, demonstrate a good start of lactation curve evolution, but who decrease instantly after this 4 months because of defectuous management. This production with only the first 4 months of lactation curve shows an evolution of lactation with a good debut performance as Alpina race but for some reason of mismanagement and also because of lack of knowledge regarding dairy goat breeds.

All this characteristics, of imported goats breeds, are superior comparing with Carpatina breed, but also with a higher requirements regarding exploitation, breeding, and, most important-feeding condition, totally different from our Carpatian breed requirements.

## ACKNOWLEDGEMENTS

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previous year on the performance of morphologically productive livestock of Alpin goats breed imported in Ialomita County, Gîrbovi village. On behalf of the collaborators, we thank to Mr. Cojocaru Ovidiu as farmer, for his support and cooperation

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