

THE RELATIONSHIP BETWEEN BODY CONDITION AND AGE IN SAANEN GOAT HERDS AS ECONOMIC FACTORS

MYRTILL GRÁFF¹, EDIT MIKÓ¹, KUKOVICS SÁNDOR²

¹University of Szeged Faculty of Agriculture,

graff@mgk.u-szeged.hu

²Hungarian Sheep and Goat Dairying Public Utility Association, Herceghalom

Abstract: The authors examined the changes of body condition with increasing age on 5 Saanen goat farms. They examined the body condition with a method based on a system developed by themselves. The scale of BCS is ranging from 0.5-4.5 increasing by 0.5. They registered these data monthly. They tried to find an answer how the body condition changes with the age, and which body condition and which age is best for production. There were 37 ewes on the first farm, 17 on the second, 45 on the third, 17 on the fourth and 80-90 on the fifth.

Based on the examinations we can conclude that the best body conditions were at 2-4 years old animals, after that BCS decreased ($r = -0.37$; $P < 0.05$). The condition was very different on each farm, which was associated with the feeding. The goats had the best body condition in every age group on farm No.1 (BCS= 2.71-3.08). The most milk was also produced on farm No. 1.

Key words: goat, body condition, age

1. INTRODUCTION

In order for the goat to be economical, there are many viewpoints to consider. Several authors describe the condition has close relationship with the milk production and proliferation of the animals (Leginbuhl, J.M., 1998; Báder et al 2002). Regular body condition scoring (which is easy to learn), contributes to the increase of the efficiency of production (milk and offspring). However, the body condition with regard to production and reproductive phases is a constantly changing state, therefore it also changes in the different stages of lactation. Body condition is often considered as an energy reserve indicator of the animals, but it is related to the health, the feed utilization and the age of the animals as well (Meyers – Raybon, D., 2004). Only the animals with right body condition can be expected to produce the desired number of offspring and sufficient quantity of milk (Morand-Fehr, P., 2005). However, body condition scoring is rarely used in practice, and if it is, then mainly in cattle breeding. In our paper we examined, how the BCS (Body Condition Score) changes by the age of the animals, in which age is the BCS the highest and when we can expect a high production.

2. MATERIAL AND METHODS

The research was carried out on five Saanen goat farms. There were 37 ewes on the first farm, 17 on the second, 45 on the third, 17 on the fourth and 80-90 on the fifth. Previously, we worked out a body condition system of Saanen goats as a scale from 0.5-4.5, increasing by 0.5 points. We examined the body condition with this method, monthly, and we registered these data and the age of animals. The mother goats were grouped according to age on each farm. The data were analysed with a single-factor analysis of variance method. The relationship between the variables was examined with correlation analysis. For data processing SPSS for Windows 15.0 programme was used.

3. RESULTS

On the first farm there was not significant difference between the age groups (*Figure 1.*) The one year old goats were in the best body condition (3.16), but the values of 2 and 3 years animals were also high (2.91; 3.08). Compared to other farms of the same age groups we can see, that the mother goats had the best body condition on this farm. From the age of 4 the BCS of the mother goats continuously decreased until the age of 8.

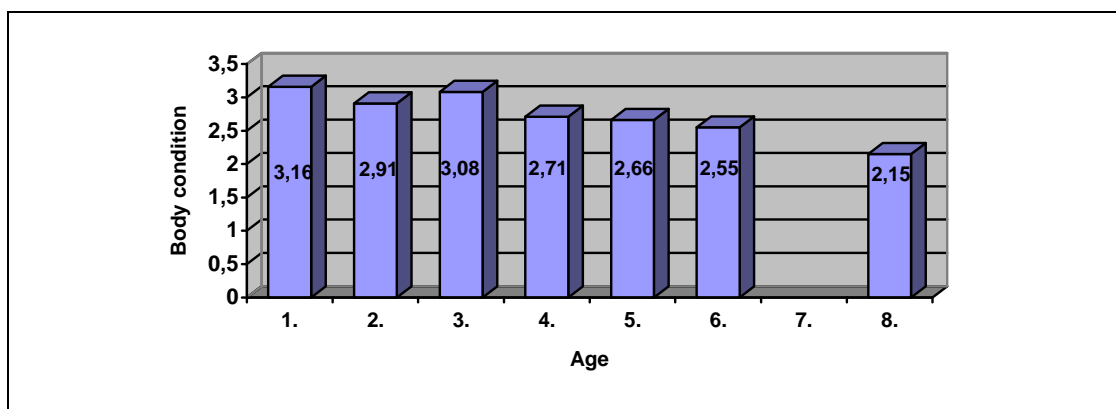


Figure 1: The relationship between lactation average BCS and age on farm 1.

On the second farm there were not any one-year-old animals. The BCS values were very low compared to other farms. From 4 years of age (as on the first farm) decreased the BCS of goats with increasing the age (*Figure 2.*) The three years old goats had the best body condition, but between the neighboring values were not significant differences. The nutrition was not suitable for mother goats.

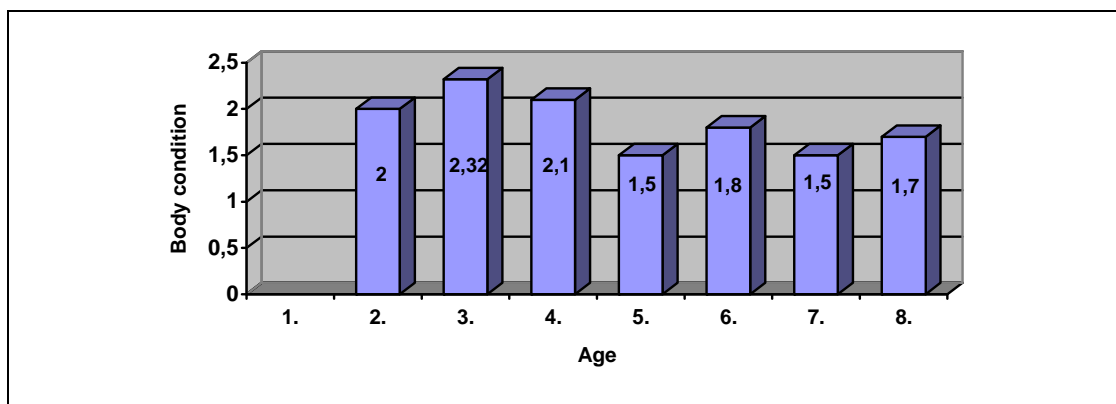


Figure2. The relationship between lactation average BCS and age on farm 2.

On the thirst farm there were not any two-year-old animals. The highest BCS were at the four years old animals (2.32), but the values of three-year-old animals were not significantly less (2.48). These animals were in good condition. The decrease of BCS began at 5 years old mother goats on this farm (*Figure3*). The values of older goats were rather low.

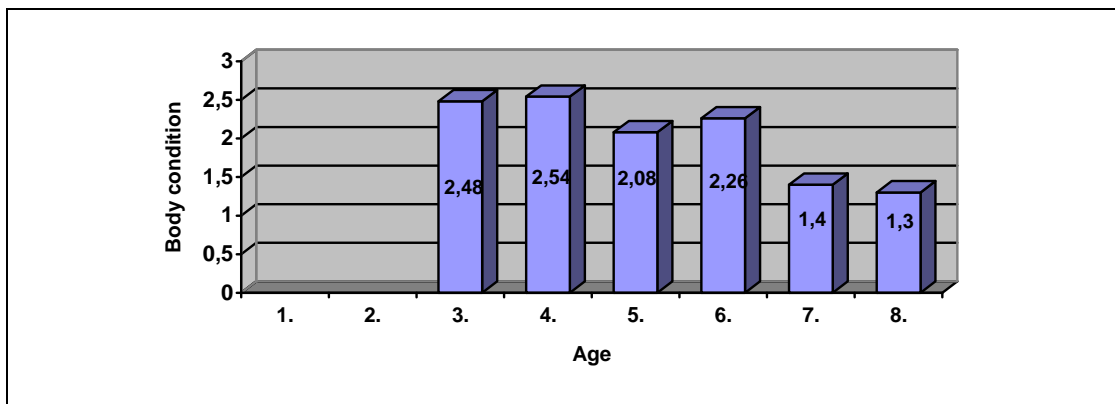


Figure 3: The relationship between lactation average BCS and age on Farm 3.

On the fourth farm there were mother goats from four years old to eight. Their condition was very weak in all age groups, about 1.7. Significant differences were not detected because of similar values (*Figure 4*). The quality of grass was poor, it dried out and the quantity of fodder was not enough for goats.

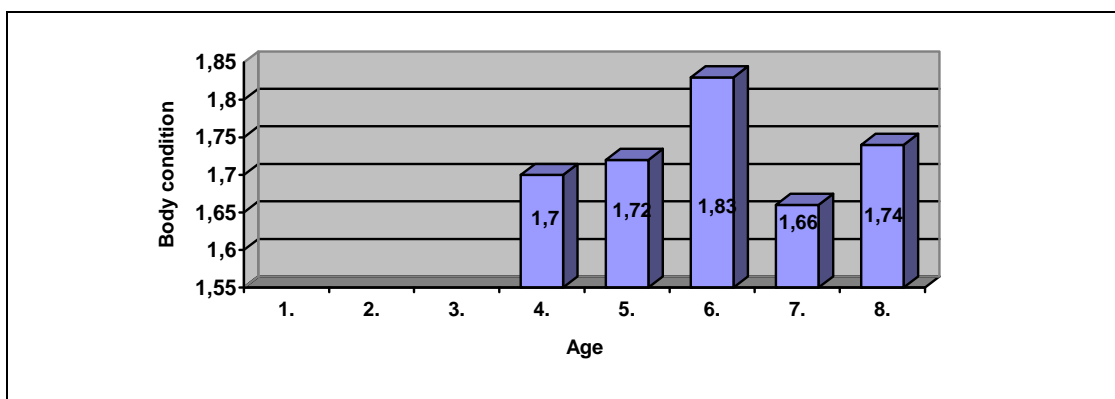


Figure 4: The relationship between lactation average BCS and age on Farm 4.

On the fifth farm the BCS of 1-year-old mother goats was only 1,97. Probably, their body was too young for parturition. The 2-year-old goats had the best condition (2.43), which is a very good value, significantly higher, than BCS of oneyear-old mothers. The BCS of values decreased from group of 3 years old goats, but only slightly. The condition of old goats were similar to that of the young animals. There was not significant difference between values of young animals and old goats. The nutrition was suitable on this farm (*Figure5*).

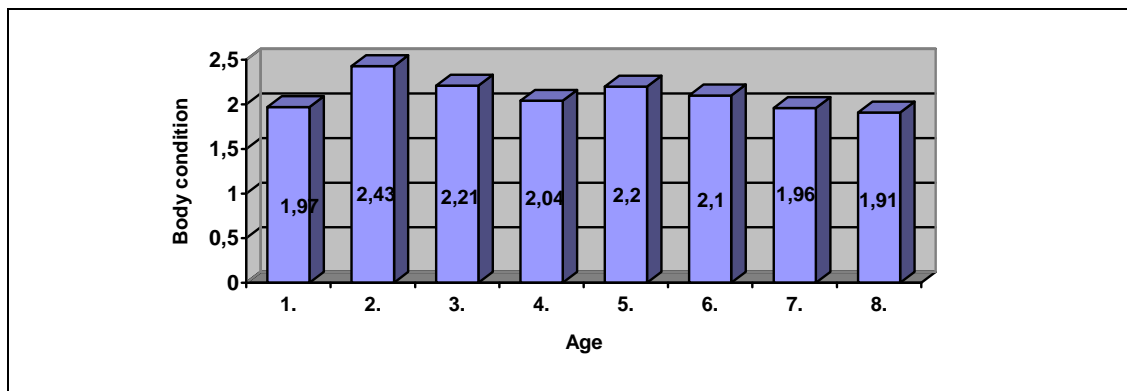


Figure 5: The relationship between lactation average BCS and age on Farm 5.

(* P < 0,05; **P < 0,01)

The examination showed a loose, negative correlation, (e.g. on Farm.3. it was $r = -0.37$, $P < 0.01$). The condition decreased with the increase of the age.

Table 1: Correlations between age and lactation average BCS by farms

Number of Farm	1.	2.	3.	4.	5.
Correlations	-0,31**	-0,30**	-0,37**	-0,04*	-0,07*

CONCLUSIONS

When examining the changes in BCS with regard to the increasing age it was observed that the mother goats were in the best body condition in all age group on farm 1. Here together with the increase of the age the body condition score (BCS value) of the animals was gradually decreasing ($r = -0.31$; $P < 0.01$). Since on this farm the milk production was significantly higher compared to that of the other farms, we can conclude that the body condition score measured here by age groups are adequate in case of Saanen goats in Hungary. These values were approached by the mother goats of Farm 3 and Farm 5. The BCS values of the animals on Farms 2 and 4 were very low, especially from the age of 4 years. The 2-4-year-old animals were in the best condition, differing by farms. After the mother goats reached their best condition (between their ages of 2-4) a continuous BCS decrease followed together with the advancing age.

REFERENCES

- BÁDER E. – GYÖRKÖS I. – MUZSEK A. – SZILI J. – BÁDER P.**, 2002, Az üszők előkészítés előtti kondíciójának hatása az első laktációs tejtermelésre. Agro Napló. VI. évf. 4. sz. 120-123 p.
- LEGINBUHL, J.M.**, 1998: Evaluation and Preparation of the Meat Goat Breeding Herd. NC State University, College of Agriculture and Life Sciences, Department of Animal Science.
- MEYERS – RAYBON, D.**, 2004: Body Scoring Helps Breeders Evaluate Condition of Dairy Goats. Dairy Goat Journal May/June 2004, Countryside Publications, Ltd., Wisconsin.
- MORAND-FEHR, P.**, 2005: Recent developments in goat nutrition and application: A review. Elsevier. Small Suminant Research 60:25-43