



PERI-PARTURIENT WEIGHT IN GOAT KIDS FROM THE BANAT MOUNTAINOUS AREA: A COMPARATIVE FARM-LEVEL ANALYSIS

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Abstract: The present study examines the birth weight of goat kids originating from three farms located in the mountainous region of Banat, providing a comparative perspective on variations according to sex and farm unit. The results indicate that the highest average birth weights in male kids were recorded in Farm CC-1 (3.67 kg), closely followed by Farm CC-2 (3.65 kg), suggesting a high level of consistency between these farming conditions. In contrast, female kids displayed lower average values overall, with the highest mean observed in Farm CC-2 (2.69 kg).

Statistical analysis revealed highly significant differences between sexes within each farm ($p < 0.0001$), confirming the strong influence of biological sex on birth weight. However, no statistically significant differences were identified between farms, indicating that management practices and environmental conditions are relatively uniform across the studied locations. These findings emphasize the importance of sex as a determining factor in birth weight, while also suggesting a consistent level of care and similar rearing conditions among the farms included in the study.

• Introduction

Goat farming represents an important branch of animal husbandry, particularly in mountainous and sub-mountainous areas, where other livestock species show limited adaptability. Goats are well known for their hardiness, their ability to efficiently utilize poor-quality pastures, and their resistance to variable climatic conditions. In the mountainous area of Banat, this species has a significant economic and social role, contributing to the sustainability of rural households and to the preservation of agroecosystem biodiversity.

• Material and method

Study area

The research was carried out in the mountainous region of Banat, characterized by fragmented relief, variable altitudes, temperate-continental climate with mountain influences and cold winters and moderate summers.

These conditions lead to the adoption of extensive or semi-extensive farming systems, mainly based on grazing.

Biological material

The study included goat kids originating from three farms: Farm CC-1, Farm CC-2, Farm CC-3.

The animals belong to populations adapted to local environmental conditions and are raised in traditional systems. Both male and female kids were included in order to allow comparative analysis.

Working methodology

Birth weight was measured immediately after kidding, using calibrated scales, in order to avoid variations caused by fluid loss or colostrum intake.

For each individual, the following data were recorded: sex, birth weight, farm of origin.

The data were centralized and organized according to farm and sex.

Statistical analysis

Data processing included:

- calculation of the arithmetic mean
- determination of minimum and maximum values
- analysis of variation

Specific statistical tests were used to compare groups, and the level of significance was set as follows:

- $p < 0.05$ – significant
- $p < 0.001$ – highly significant
- $p < 0.0001$ – extremely significant

• Results and discussion

The analysis of the recorded data highlights a clear and consistent pattern regarding the influence of sex on birth weight in goat kids. Specifically, male offspring exhibited higher average birth weights compared to females in both experimental units, with values of 3.67 kg in Farm CC-1 and 3.65 kg in Farm CC-2. In contrast, female kids registered considerably lower mean values, namely 2.60 kg in CC-1 and 2.69 kg in CC-2. This pronounced disparity between sexes reflects a marked sexual dimorphism manifested from birth, which is in accordance with established physiological and endocrine differences influencing fetal growth.

Conversely, the comparison between farms reveals only marginal variations in mean birth weight values within each sex category. The minimal differences observed between CC-1 and CC-2 suggest a high degree of uniformity in the applied management systems, including feeding strategies, housing conditions, and overall herd management practices. Furthermore, this homogeneity may also reflect a relatively similar genetic background of the breeding stock across the evaluated farms.

Table 1. Mean birth weight of goat kids by farm and sex

Farm	Male (kg)	Female (kg)	Farm
CC-1	3.67	2.60	CC-1
CC-2	3.65	2.69	CC-2
Farm	Male (kg)	Female (kg)	Farm
CC-1	3.67	2.60	CC-1
CC-2	3.65	2.69	CC-2
Farm	Male (kg)	Female (kg)	Farm
CC-1	3.67	2.60	CC-1
CC-2	3.65	2.69	CC-2

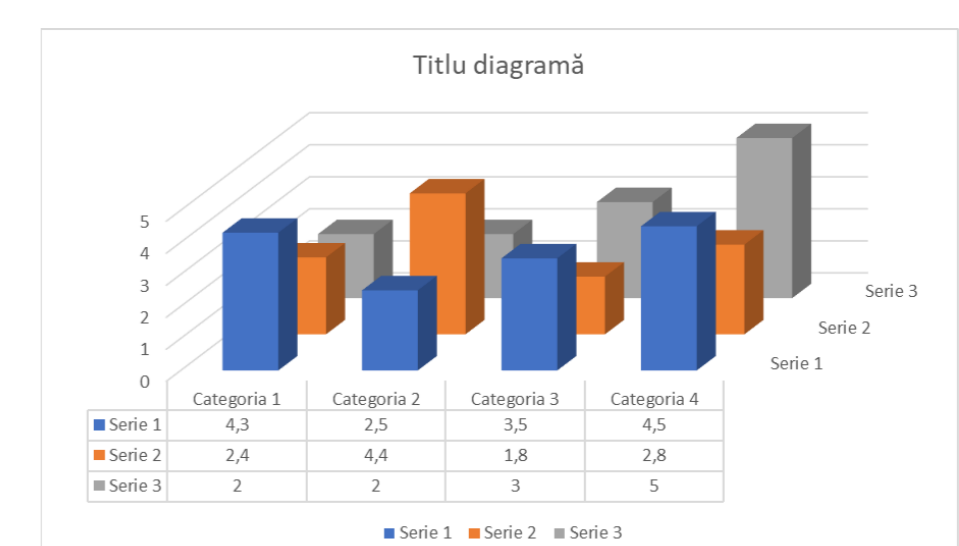


Figure 1. Comparative evolution of birth weight in male and female goat kids across farms.

• Conclusions

Nr. crt.	Categorie analizată	Concluzii / interpretare şi/să plică
1	Influenţa sexului asupra greutateii la naştere	Greutatea la naştere a ieşilor este influenţată semnificativ de sex, masculii înregistrând constant valori superioare femelelor, ceea ce sugerează un dimorfism sexual precoce.
2	Variabilitatea valorilor pe ferme	Cele mai mici valori medii ale greutateii la naştere au fost observate în ferma CC-1 pentru masculii şi în ferma CC-2 pentru femele, indicând diferenţe punctuale între unităţi.
3	Omogenitatea între ferme	Analiza statistică nu a evidenţiat diferenţe semnificative între ferme, ceea ce sugerează condiţii de exploatare şi management relativ uniforme.
4	Relevanţa indicatorului analizat	Greutatea la naştere se confirmă ca un indicator biologic esenţial pentru evaluarea eficienţei reproductive şi productive în sistemele de creştere a capreilor.