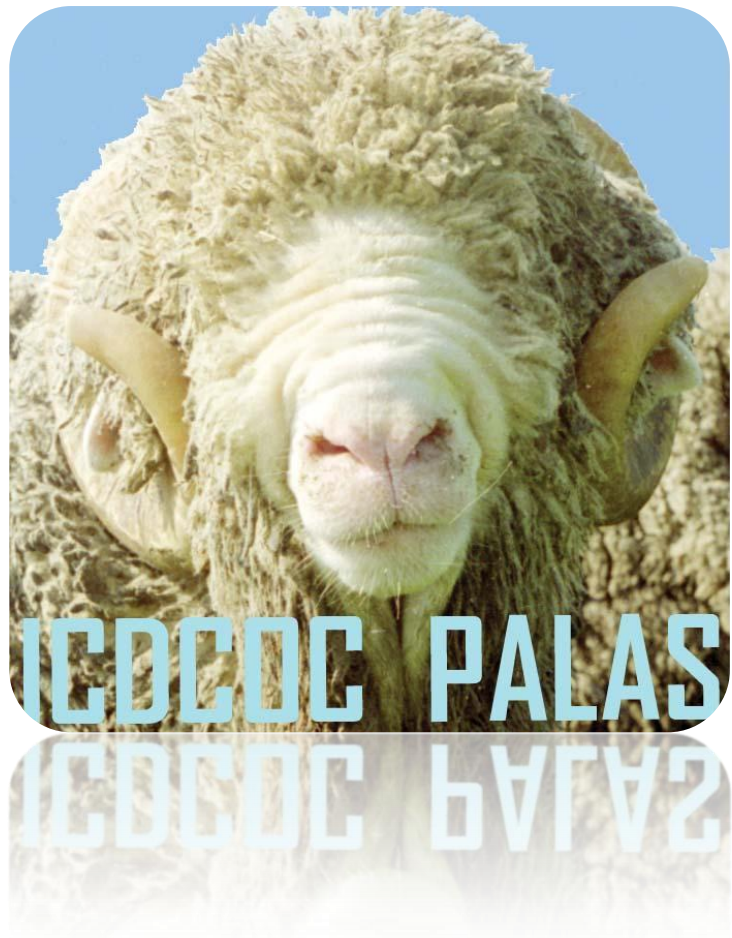




UNIVERSITY OF LIFE SCIENCES "KING MIHAI I" FROM
TIMISOARA
"YOUNG PEOPLE AND MULTIDISCIPLINARY RESEARCH
IN APPLIED LIFE SCIENCES"



"Young people and multidisciplinary
research in applied life sciences"



16-17 November, 2023
**COMPARATIVE STUDY ON MORPHOPRODUCTIVE
MEAT PERFORMANCES IN BUCKLING GOAT HYBRIDS
BETWEEN THE BOER AND CARPATINA BREEDS**

**Alexandru-Gabriel Vartic, Oana-Corina Dordescu, Corneliu-Ion Neacșu, Petru-
Gabriel Vicovan, Ioan Pădeanu, Constantin Pascal**

Research and Development Institute for Sheep and Goat Breeding Palas, Constanța, 900316, I. C. Bratianu
Blvd 248, Romania.

Ion Ionescu from Brad University of Life Sciences, Iași, 700490, Mihail Sadoveanu Alley 8, Romania.
Banat's University of Life Sciences "Regele Mihai I", Timisoara, 300645, Calea Aradului 119, Romania.

Abstract: In Romania, research on enhancing meat production in goats through hybridization is sparse, with studies being conducted primarily at R.D.I.S.G.B. Palas Constanta. This study aims to highlight the benefits of crossbreeding the Carpatina and Boer breeds in terms of all morphoproductive indices. The objective is to develop a Romanian goat breed tailored for meat production, which is well-suited to Romanian conditions. In this regard, the research focuses on analyzing the main morphoproductive indicators of the newly created R_1 (75% Boer x 25% Carpatina) and F_1 (50% Boer x 50% Carpatina) populations compared to the Carpatina breed (control group). The body weight was 12.87% higher in R_1 hybrids (75% Boer x 25% Carpatina) compared to the F_1 group (50% Boer x 50% Carpatina) and 17.67% higher compared to Carpatina breed kids. The average daily weight gain in kids during the fattening period was 130.80g (Carpatina breed) and 185.30g (R_1 hybrids). The difference between the R_1 and F_1 study groups was 17.85% concerning the average daily gain, and the F_1 hybrid group achieved an average daily gain that was 20.21% higher compared to the Carpatina breed kids. The specific energy and protein consumption in the R_1 and F_1 hybrid groups were lower than in the Carpatina breed kids. The experimental slaughters revealed superior qualities in hybrid kids compared to those of the Carpatina breed.

• Introduction

The orientation and development of goat breeding in the direction of meat production is determined by the demand on the food market for lean meat, while there are also tendencies to implement a dietary diet, limited in fat and especially in saturated lipids. In recent years, there has been an increase interest in goat meat, which provides proteins with high biological value and healthy fats due to a high ratio between saturated and unsaturated fatty acids as well as a low cholesterol content.

• Material and method

The research was carried out by organizing 3 batches as follows – batch 1: 10 kids from the R_1 population (75% Boer x 25% Carpathian), batch 2: 15 kids from the F_1 population (50% Boer x 50% Carpathian) and lot 3: 20 kids from the Carpathian breed. Measurements and weighing were carried out on these populations, calculating the growth speed of the kids at fattening, the specific feed consumption, and nutrients as well as the data obtained after slaughtering.

The administered feeds were weighed daily, and the feed residues were collected every 2-3 days. Fattening was carried out from the age of the kids of 102 - 104 days over a period of 70 days, until the average body weight of the kids was about 30 kg/head.



• Results and discussions

Regarding the average daily weight gain, it oscillated between 130.80 g (Carpatina breed) and 185.30 g (R_1 hybrids). The R_1 hybrids achieved an average daily gain higher than the F_1 hybrids by 17.85%, the differences being significant and by 41.67% higher compared to the Carpatina breed kids, the differences being very significant. The group of F_1 hybrids achieved a higher average daily increase by 20.21% compared to the group of kids from the Carpatina breed, the differences being significant ($p < 0.05$). The average body weight of the batches taken in the study showed close values, it being between 18.06 kg and 19.98 kg.

• Conclusions

The obtained data reveal the superiority of the R_1 goat population (75% Boer x 25% Carpatina), clearly resulting in the advantages of the hybridization of the Carpatina breed with the Boer breed in terms of increasing the quantitative and qualitative production of meat in the goat species. At R.D.I.S.G.B. Palas Constanta, a native breed of goats specialized in meat production (Boer 75%, Carpatina 25%) is being prepared, which will contribute, after approval, to increasing the quantity and quality of meat production among goat farms.

Acknowledgement: The research was conducted within the research projects of Research and Development Institute for Sheep and Goat Breeding Palas Constanta.

Weight gain of young male goats according to phenotype

No. crt.	Genotype	Body Weight (Kg)		Weight gain	
		At the beginning of fattening	At the end of fattening	Total weight (kg)	Average daily gain (g)
		$\bar{X} \pm S_{\bar{X}}$	$\bar{X} \pm S_{\bar{X}}$	$\bar{X} \pm S_{\bar{X}}$	$\bar{X} \pm S_{\bar{X}}$
1	R_1 Boer x Carpatina	19.98 ± 0.97	33.23 ± 2.19	12.98 ± 1.17	185.30 ± 16.79
2	F_1 Boer x Carpatina	18.06 ± 0.65	29.44 ± 1.18	11.02 ± 0.66	157.23 ± 9.46
3	Carpatina breed	18.65 ± 0.74	28.24 ± 0.98	9.16 ± 0.52	130.80 ± 7.37

Body weight and yield at slaughter in intensively fattened kids according to genotype

No. crt.	Genotype	Live weight before slaughter (Kg)	Empty live weight (Kg)	Slaughter yield (%)	
		$\bar{X} \pm S_{\bar{X}}$	$\bar{X} \pm S_{\bar{X}}$	R1	R2
1	R_1 Boer x Carpatina	33.27 ± 1.13	30.27 ± 0.96	51.73	56.87
2	F_1 Boer x Carpatina	32.33 ± 1.20	28.65 ± 1.11	47.37	53.47
3	Carpatina breed	30.17 ± 0.93	25.02 ± 0.56	43.27	52.13

The tissue composition of carcasses according to genotype during intensive fattening

No. crt.	Genotype	Weight of tissues			
		Muscle (%)	Bones (%)	Fat (%)	Meat (%)
1	R_1 Boer x Carpatina	63.59	20.37	15.88	79.47
2	F_1 Boer x Carpatina	61.93	21.77	16.19	78.12
3	Carpatina breed	60.05	24.77	15.16	75.21

