

PHENOTYPIC VARIATION, BODY CONFORMATION, AND RELATIONSHIPS BETWEEN BIOMETRIC TRAITS AND LIVE WEIGHT IN YOUNG SHEEP FROM THREE GENETIC COMBINATIONS

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Abstract

The study evaluated phenotypic variation and body conformation in young sheep obtained by crossing Tigaie ewes with rams of French meat breeds, namely Berrichon du Cher (BC×TI), Blanche du Massif Central (BMC×TI), and Vandeen (V×TI). To characterize body development, trunk length, withers height, rump height, chest circumference, cannon circumference, trunk depth, and live weight were measured. Descriptive statistics, factorial ANOVA with the effects of genetic group, sex, and genetic group × sex interaction, Pearson correlations, conformation indices, principal component analysis, and multiple regression were used. Differences among genetic combinations were detected for withers height, cannon circumference, trunk depth, and live weight. Live weight showed the strongest correlations with trunk length ($r=0.826$; $p<0.001$) and trunk depth ($r=0.763$; $p<0.001$). The multiple regression model based on trunk length, chest circumference, and trunk depth explained 75.65% of the variation in live weight ($R^2=0.7565$). The results describe phenotypic differentiation at the age of evaluation and were not used to estimate heterosis because the available values for the parental breeds were obtained from adult animals.

Key words: sheep; young stock; body conformation; biometry; live weight; PCA; regression