

Effects of Environmental and Genetic Factors on Growth Performance, Fertility Traits and Milk Yield/Composition in Saanen Goats

Authors : Deniz Dincel, Sena Ardicli, Hale Samli, Mustafa Ogan, Faruk Balci

Abstract : The aim of the study was to determine the effects of some environmental and genetic factors on growth, fertility traits, milk yield and composition in Saanen goats. For this purpose, the total of 173 Saanen goats and kids were investigated for growth, fertility and milk traits in Marmara Region of Turkey. Fertility parameters (n=70) were evaluated during two years. Milk samples were collected during the lactation and the milk yield/components (n=59) of each goat were calculated. In terms of CSN3 and AGPAT6 gene; the genotypes were defined by PCR-RFLP. Saanen kids (n=86-112) were measured from birth to 6 months of life. The birth, weaning, 60th, 90th, 120th and 180th days of average live weights were calculated. The effects of maternal age on pregnancy rate (p < 0.05), birth rate (p < 0.05), infertility rate (p < 0.05), single born kidding (p < 0.001), twinning rate (p < 0.05), triplet rate (p < 0.05), survival rate of kids until weaning (p < 0.05), number of kids per parturition (p < 0.01) and number of kids per mating (p < 0.01) were found significant. The impacts of year on birth rate (p < 0.05), abortion rate (p < 0.001), single born kidding (p < 0.01), survival rate of kids until weaning (p < 0.01), number of kids per mating (p < 0.01) were found significant for fertility traits. The impacts of lactation length on all milk yield parameters (lactation milk, protein, fat, totally solid, solid not fat, casein and lactose yield) (p < 0.001) were found significant. The effects of age on all milk yield parameters (lactation milk, protein, fat, total solid, solid not fat, casein and lactose yield) (p < 0.001), protein rate (p < 0.05), fat rate (p < 0.05), total solid rate (p < 0.01), solid not fat rate (p < 0.05), casein rate (p < 0.05) and lactation length (p < 0.01), were found significant too. However, the effect of AGPAT6 gene on milk yield and composition was not found significant in Saanen goats. The herd was found monomorphic (FF) for CSN3 gene. The effects of sex on live weights until 90th days of life (birth, weaning and 60th day of average weight) were found significant statistically (p < 0.001). The maternal age affected only birth weight (p < 0,001). The effects month at birth on all of the investigated day [the birth, 120th, 180th days (p < 0.05); the weaning, 60th, 90th days (p < 0,001)] were found significant. The birth type was found significant on the birth (p < 0,001), weaning (p < 0,01), 60th (p < 0,01) and 90th (p < 0,01) days of average live weights. As a result, screening the other regions of CSN3, AGPAT6 gene and also investigation the phenotypic association of them should be useful to clarify the efficiency of target genes. Environmental factors such as maternal age, year, sex and birth type were found significant on some growth, fertility and milk traits in Saanen goats. So consideration of these factors could be used as selection criteria in dairy goat breeding.

Keywords : fertility, growth, milk yield, Saanen goats

Conference Title : ICSGL 2019 : International Conference on Sheep and Goat Livestock

Conference Location : Paris, France

Conference Dates : January 24-25, 2019