

## INFLUENCE OF DIFFERENT PLANT-BASED DIETS ON FATTY ACIDS COMPOSITION OF GOAT MEAT

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**Abstract:** Goat meat quality depends on many factors, primarily diet, race, gender, stress, environment, management. Goat meat contains low quantity of saturated fatty acids and cholesterol, and fatty acids composition depends on nutrition. The main objective of this study was to examine the influence of plant-based diets from different regions (hilly and plain) on fatty acids composition of fresh goat meat. The fresh meat is obtained from Balkan goats breed (about 4 years old) originating from hilly and plain regions. Gas chromatography with flame-ionization detector (GC-FID) and fatty acids methyl esters (FAMES) derived by transesterification from fats are used to determine fatty acids profile according to ISO 12966 method. Statistically significant difference ( $p < 0.05$ ) is noted between values of saturated and unsaturated fatty acids of compared fresh goat meat originating from different regions. The amount of examined monounsaturated fatty acids is lower in fresh goat meat from plain area. Polyunsaturated fatty acids, such as alpha-linolenic (n-3 FA), linolelaidic and linoleic acids are found in higher percentage (1.2%, 0.4% and 3.0%, respectively) in goat meat from hilly region. The results suggest that plant-based diet consist of different species of herbs distinctive to certain regions has an impact on the composition and quality of goat meat fatty acids profile.

**Key words:** diet, fatty acids, goat meat, gas chromatography, meat quality