

INFLUENCE OF SELECTED PLANT ADDITIVES ON THE FATTY ACID PROFILE OF TRADITIONAL JANJ CHEESE

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ABSTRACT

Janj cheese is a traditional dairy product produced from raw cow's milk in the mountainous Janj region of Bosnia and Herzegovina, where cattle are mainly fed on natural mountain pastures. This study investigated the effect of adding selected plant additives (oregano, basil, parsley, rosemary, and chives) at a concentration of 0.50% on the fatty acid composition of Janj cheese. Six cheese samples were produced, including one control sample without additives and five experimental samples with plant additions. Fatty acid composition was determined by gas chromatography with flame ionization detection (GC-FID), and data were analyzed using one-way ANOVA at $p < 0.05$. The results showed that saturated fatty acids (SFA) were dominant in all samples (59.44–61.48%), with palmitic (C16:0), stearic (C18:0), and myristic acid (C14:0) as the most abundant. Monounsaturated fatty acids (MUFA) ranged from 33.39% to 34.86%, with oleic acid (C18:1) as the major component. Polyunsaturated fatty acids (PUFA) ranged from 4.81% to 6.52%, with linoleic (C18:2) and α -linolenic acid (C18:3 n3) as the major components. α -Linolenic acid was markedly higher in most treated samples compared to the control, indicating a potential nutritional benefit of plant enrichment. Lipid quality indices (atherogenic index (AI), thrombogenic index (TI), h/H ratio, and desirable fatty acids (DFA)) showed slight modifications in treated samples, indicating subtle changes in lipid nutritional quality. These findings suggest that the addition of plant additives at 0.50% can slightly modify the fatty acid profile of Janj cheese, particularly contributing to an increase in the n-3 PUFA fraction.

Keywords: Janj cheese, plant additives, fatty acids, lipid quality indices.