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ORIGINAL PAPER

Analysis of the composition and physicochemical properties of milk from Simmental and Holstein cows in the Dukagjin plain region, Kosovo

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Abstract

This comprehensive study delves into the influence of breed on milk's physicochemical and mineral properties from Simmental and Holstein cows in Kosovo's agriculturally significant Dukagjin plain region. Milk samples were meticulously gathered from five distinct municipalities within this region, and their composition was rigorously analyzed using standardized laboratory methods to ensure accuracy and reliability. The findings underscore a notable breed effect on milk fat content, with Simmental cows consistently producing milk with significantly higher fat percentages than their Holstein counterparts. On the other hand, protein content did not display any significant difference between the two breeds. However, Holstein milk was marked by a higher level of acidity, a finding that could have implications for certain dairy products. Additionally, this study highlights the critical role of environmental factors, such as topography, pasture quality, and the stage of lactation, in shaping milk composition. Notably, higher physicochemical values were observed in areas characterized by extensive and well-managed pastureland, indicating that these environmental conditions are conducive to enhancing certain milk qualities. While the research did not identify substantial breed-specific differences in mineral content, it did observe that mineral levels were influenced by local relief and geographical conditions. These findings contribute significantly to understanding breed-specific milk characteristics within the Dukagjin region, providing invaluable insights for dairy farmers who aim to optimize milk production and quality through strategic breed selection and effective environmental management practices.

Keywords: Holstein, minerals, physicochemical properties, Simmental

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