

## RESEARCH OF THE PHYSICO-CHEMICAL COMPOSITION OF FRESH COW'S MILK IN THE REGION OF PEJA AND GJAKOVA

Indrit Loshi<sup>1\*</sup>, Valon Shala<sup>2</sup>, Jasenka Gajdoš Kljusurić<sup>3</sup>, Vesna Antoska Knights<sup>4</sup>

<sup>1</sup>Faculty of Agribusiness, University of Peja "Haxhi Zeka", UÇK nn, 30000 Pejë, Kosovo

<sup>2</sup>Food and Veterinary Agency, "Nënë Terza" M9, 10000 Pristina, Kosovo

<sup>3</sup>Faculty of Food Technology and Biotechnology, University of Zagreb, Pierottijeva 6, 10000 Zagreb, Croatia

<sup>4</sup>Faculty of Technology and technical Sciences, St. Kliment Ohridski University - Bitola, Dimitar Vlahov bb, 1400 Veles, Macedonia

\*e-mail: indrit.losi@unhz.eu

### Abstract

Milk and milk products are widely consumed products in Kosovo, especially cow's milk, but new milk production and processing capacities are being built day by day. Along with the increase in the production of fresh cow's milk, the need for research on the quality of fresh milk also increases. This study investigated some physicochemical properties of milk in Kosovo.

Milk samples were collected from dairy cows of several breeds such as: Holstein, Simmental and mixed breeds in 20 farms in the region of Peja and Gjakova. Studied parameters were: pH (ISO 26323:2009), density (ISO 15212), acidity (AOAC, 1990, no 947.05), fat (ISO 19662:2018), lactose (operation manual 11.04.19), proteins (AOAC 991.20), solids-not-fat (SNF- ISO 6731 and ISO 1737), water activity ( $a_w$ - ISO 18787:2017), freezing point (FP- operation manual 11.04.19), conductivity (ISO 15091) total dissolved solids (TDS- ISO 26323:2009), salt (ISO 11271:2002), oxidation reduction potential (OrP- ISO 11271:2002), and ash (AOAC 942.05). Gained data were analyzed using descriptive statistics and T-test.

The results indicated that there was a significant difference ( $p < 0.01$ ) between milk in the two regions in physicochemical properties. At the Gjakova, the proteins and water activity ( $a_w$ ) were significantly higher compared to milk collected in Peja. Regarding the other parameters, the two regions share the same characteristics.

From the experimental results, we come to the conclusion that many factors influence the physico-chemical composition of fresh cow's milk, such as: type of food that the animals consume (dry food, food in the form of silage or combined), the breed of dairy cows, the conditions in which the cows stay, the season, etc.

**Key words:** Milk, Dairy cows, Farms, Physico-chemical properties.