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## Evaluation of milk adulteration and mastitis in milk samples collected from selected regions in Punjab

Ali Hassan<sup>1\*</sup>, Dr. Asif Ahmed<sup>1</sup>, Adeel Javed<sup>1</sup>, Rameez Akram<sup>2</sup>, Dr. Haider Khan<sup>3</sup>

<sup>1</sup>Institute of Food and Nutritional Sciences, Pir Mehr Ali Shah Arid Agriculture University Rawalpindi, Pakistan

<sup>2</sup>Department of Agriculture Extension, Pir Mehr Ali Shah Arid Agriculture University Rawalpindi, Pakistan

<sup>3</sup>Dairy Technology Laboratory National Agriculture Research Center Islamabad, Pakistan

### Abstract

Milk is a fundamental diet for all age groups, but in developing countries like Pakistan, milk adulteration is common due to poor transportation conditions. Milk contains a wide range of nutrients, but to increase its quantity, other adulterants are added. The research was done at Dairy Technology Laboratory (NARC). The samples were collected from selected regions from Punjab. Selected regions were Bhakkar, Layyah, Khushab, Rawalpindi, Faisalabad and Lahore. Samples were brought to the lab for analysis of composition and adulterants and mastitis tests were performed at the dairy forms. In composition fat 4.87%, protein 3.61%, total solids 11.92% and ash 0.61% were observed. Adulterants were H<sub>2</sub>O<sub>2</sub>, starch, skimmed milk powder, dalda ghee, water, vegetable oil, formalin, benzoic acid, salicylic acid, sugarcane, glucose, neutralizers, NaCl, pulverized soap and urea considered for analysis. Water was the most common adulterant observed with 89% of total samples and after that glucose was the second most adulterant observed with 8% of total samples. Mastitis observed highest in Rawalpindi region with 25% and lowest in Khuashab 15%. To ensure milk quality, quality tests was conducted at dairy laboratories and food technology labs to control adulteration and mastitis disease. This study aims to evaluate these issues and ensure the safety of milk consumption. Statistical analysis data showed that compositional, adulterants and mastitis parameters observed from selected regions were significantly different ( $P < 0.05$ ).

**Keywords:** Milk Adulteration, Quality tests, Mastitis, SFMT, ANOVA

