

INFLUENCE OF BREEDING PRACTICES AND SEASONS ON THE QUANTITY AND QUALITY OF RAW MILK PRODUCED IN NORTHEASTERN ALGERIA

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The present study aimed to evaluate the effects of breeding practices and seasons on the quantity and quality of raw cow milk. Data were recorded from 12 intensive dairy farms composed of 32 to 115 Holstein cattle breeds (47 on average). A total of 144 milk samples were analyzed for daily yield (kg/day), total production (kg/cow/lactation), and composition, including the percentage of fat, protein, non-fat solids, lactose, ash, density (g/cm³), and freezing point (°C). Results showed that fat, protein, lactose, and density were affected by breeding practices ($p < 0.01$). The effects of the lactation stage on all traits were significant ($p < 0.01$). Fat and protein levels were higher at the end of lactation ($p < 0.01$), as were those of lactose ($p < 0.001$) and mineral matter ($p < 0.05$). Thus, the stage of lactation had an effect on the quantity of milk produced, which was generally negatively correlated with the physicochemical quality of the milk. Differences by season were observed in milk fat and protein contents, acidity level, and cryoscopy. In general, the highest fat content was observed in July, followed by August and September, with averages above 41 g/kg. Additionally, a significant drop in fat concentration was observed in March. The protein content showed a notable decrease in the summer and spring seasons compared to other times of the year ($p < 0.01$). Lactose levels showed significant variation across seasons over the year ($p < 0.01$), decreasing from winter to summer. Breeding practices and seasons clearly affected milk's physicochemical.