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Analysis of nutritional value in feed mixtures and premixes produced by selected feed manufacturers in southeastern Kazakhstan for dairy farms*

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Abstract

The aim of this study was to analyze the nutritional value of feed mixtures and premixes produced by selected feed manufacturers in southeastern Kazakhstan for dairy farms. The feed mixtures produced in the analyzed feed mills differed significantly ($p \leq 0.01$ and $p \leq 0.05$) in terms of their basic nutrient content. The amino acid, mineral, and vitamin composition of the feed mixtures was neither monitored nor balanced, except in the Good-Zhem feed mill, as the facilities did not produce mineral-vitamin premixes. For research purposes, the Kormovik and Vet Effect feed mills developed premixes for lactating cows, dry cows, and young cattle aged 6-12 months. The premixes contained high levels of minerals, including Ca, P, Mg, Na, Cl, Cu, Zn, Mn, Co, Se, and I, as well as vitamins A, D, and E. For high-yielding cows from the OST group and for cows in the first dry period (Period I), an antioxidant was added at levels of 177 mg kg^{-1} and 95 mg kg^{-1}, respectively. Additionally, for low-yielding cows and cows in the second dry period (Period II), supplementary vitamins were included: K, B_1, B_2, B_4, B_5, B_6, B_9, B_{12}, and PP. The experimental premixes used in cattle feeding on the JSC AIC Adal farm allowed the maintenance of milk yield in cows, kept there at the level of 8 000 kg of milk. The research shows that including a premix in cattle feed rations helps to balance ratios in terms of their nutritional value and content of minerals and vitamins, which ultimately enables better use of the animals' genetic potential.

Keywords: dairy cattle breeding, cows, productivity, diet, mixed feed, nutritional value, premixes

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