STUDY ON THE INFLUENCE OF SOME NON-GENETIC FACTORS ON THE PHENOTYPIC CORRELATIONS BETWEEN MILK PRODUCTION TRAITS

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Abstract

Milk and dairy products are a major source of energy, protein and micronutrients in the human diet, and milk yield, fat and protein content determine the payment value of the raw. Milk yield and its component yields are strongly, positively correlated, while milk yield is often weakly and negatively correlated with fat and protein. Beyond the size of these correlations, phenotype (P) results from genotype (G), environment (E) and their interaction ($P = G + E + G \times E$); herd (farm) and production year are two of the most accessible proxies for this environmental component, known to materially change both trait levels and heritability estimates. For Holstein herds in Iași County, no study has yet formally tested whether farm and year affect milk yield, composition and their correlations. This study therefore used two-way ANOVA to test the effect of herd, year and their interaction on milk yield and composition, and estimated the phenotypic correlations between these traits, separating stable, breed-level relationships from those driven by non-genetic, farm- and year-specific factors.

Key words: *milk yield, phenotypic correlation, non-genetic factors, herd and year effect, Holstein*