THE COMPARATIVE ANALYSIS OF MILK PERFORMANCE IN CZECH PIED CATTLE RAISED IN THE CZECH REPUBLIC VERSUS POLISH HOLSTEIN-FRIESIAN, SIMMENTAL AND CZECH PIED CATTLE RAISED IN POLAND

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Abstract. The aim of this study was to analyse milk yield, milk composition and other performance indicators in Czech Pied cows raised in the Czech Republic as compared with Polish Holstein-Friesian, Simmental and Czech Pied cows raised in Poland. The experimental materials comprised cows enrolled in the milk recording scheme in 2011, of the following breeds: Polish Holstein-Friesian (PHF) (438 376 cows), Simmental (SIM) (9 559 cows), Czech Pied tested in Poland (CP-P) (34 cows), Czech Pied tested in the Czech Republic (CP-Cz) (110 436 cows). The following parameters were determined: yield [kg] of milk, fat and protein, content [%] of fat and protein in 305-day lactations: the first lactation (L-I), the second and subsequent lactations (L-IIS), the length of: inter-pregnancy interval (IPI), inter-calving interval (ICI), gestation period and dry period, as well as artificial insemination efficiency and conception rates on selected days of IPI. PHF cows produced the highest yields of milk and milk components in the analysed lactations, in comparison with the other cattle breeds. Milk fat content was relatively high in all cattle breeds, exceeding 4% in both L-I and L-IIS. Milk protein content was highest in CP-Cz and CP-P cows, at 3.53 – 3.54% in L-I and 3.46% in L-IIS. PHF cows calved at the youngest age, had the longest IPI, ICI and lactation periods, and the shortest gestation period, compared with the other cattle breeds. Over a three-year period, SIM cows produced 25% less milk than PHF cows. The average lifetime productivity of the highest-yielding CP-Cz cows was 108342 kg milk (3.39% protein content and 3.79% fat content) and 7038 kg fat and protein. The highest number of CP-Cz cows conceived at 120 days or more (41.6%) and within 90 days (39.9%) of calving, which testifies to the success at first insemination. High genotypic diversity was noted in CP-Cz cattle, which contributed to a considerable increase in milk yield in cows containing 87% or more CP-Cz genes.

Keywords: Polish Holstein-Friesians, Czech Pied cattle, Simmental cattle, milk yield, inter-calving interval, longevity.