

## RESEARCH OF HERITABILITY OF LEUKEMIA IN LITHUANIAN DAIRY CATTLE POPULATION

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**Abstract.** The aim of the work was to evaluate the influence of genetic factors on the prevalence of leukemia in Lithuanian dairy cattle populations and to determine the heritability of leukemia.

The investigations were carried out during 2007–2011 at the Animal Breeding Value Research and Selection Laboratory of Veterinary Academy, Lithuanian University of Health Sciences, State Enterprise "Agriculture Information and Rural Business Centre", and Laboratory Department of the National Food and Veterinary Risk Assessment Institute.

A database was created for the present investigation. It has 983989 records of cattle including 704649 entries about cows.

We found that the occurrence of EBL was 1.8 times higher in the population of red and red and white cattle than in the black and white population ( $P < 0.01$ ). In the population of black and white cattle, the incidences of leukemia were 3.33 times higher for Holstein genotype than for Dutch black and white cattle. Most of the cattle culled due to leukemia in the red and red and white population were the Danish red genotype, the least least culled cattle (1.8 times less) were red and white Holstein.

Inbreeding was 1.9 times more frequent for black and white cattle sick with leukemia and 3.3 times more frequent for red and red and white cattle sick with leukemia than healthy ( $p = 0.0001$ ).

Heritability of leukemia in black and white population was 0.11–0.264 and in red and red and white cattle population 0.182–0.243.

**Keywords:** cows, leukemia, genetic factors, breed, heritability.