VÚŽV
Výzkumný ústav živočišné výroby, v.v.i.

GENETICS AND BREEDING OF FARM ANIMALS
DAIRY CATTLE

We focus on current breeding methods for dairy cattle, research is aimed on the production and functional traits of cattle and introduction of new knowledge in breeding and selection practice.

OVERVIEW OF OUR ACTIVIES

The main long-term focus of our research is on the continuous development of the methods of genetic evaluation of animals (genomic breeding values) for production and function traits and their implementation into the regular breeding practices. These include implementation and verification of performance recording, especially for newly introduced traits, such as diseases and resilience. The basic aim is to improve animal health and welfare. Consequently, evaluation of genetic parameters (heritability, phenotypic and genetic correlations between traits) and testing of new methods of breeding values predictions, especially genomic single step methods, and the use of Interbull information in domestic breeding values prediction are performed.

We cooperate closely with the dairy cattle breeders, Czech-Moravian Breeders Association and Plemdat. The results of our research are immediately applied in the national genetic evaluation. Our team closely follows multinational organisations: ICAR, Interbull, ISAG.

Our main tools are powerful computing technology and software applicable on large datasets: BLUP, REML, Gibbs Sampling and Cox and Weibull models.

TEAM

Scientists

Ludmila Zavadilová
- *head of the team*

Josef Přibyl
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KEYWORDS
Breeding value, genomics, health traits, cattle breeding, resilience

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MAIN THEMES & PROJECTS

- Incorporating health traits into performance recording and breeding of dairy cattle
- Genomic breeding values for dairy cattle
- Development of a genetic evaluation information system for dairy cattle
- Increasing of the reliability of genomic breeding values prediction using imputation

KEY PUBLICATIONS

Brzáková, M., Zavadilová, L., Přibyl, J., Pešek, P., Kašná, E. a Kranjčevičová, A.. Estimation of genetic parameters for female fertility traits in the Czech Holstein population. Czech Journal of Animal Science, 2019, 64, 199-206.

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