

## Estimation of Breeding Values for Conformation Traits in Slovak Holstein Population

Starting in November 2003 linear type traits are evaluated using BLUP animal model for Slovak Holstein Cattle. Linear type traits are recorded from 1995.

The traits considered are **overall conformation score, overall udder score, overall feet & legs score, dairy strength, frame** (scale from 50 to 100) and 19 linear type traits: **stature, angularity, chest width, body depth, rump angle, rump width, foot angle, rear legs side view, rear legs rear view, fore udder, rear udder height, rear udder width, udder support, udder depth, front teat placement, rear teat placement, teat length, locomotion and body condition scores** (scale from 1 to 9). Body condition scores are transformed to this scale from original scale 1 - 5. Dairy strength is the new trait which replaced dairy character and body capacity.

The composite traits, rear teat placement, locomotion and body condition scores are evaluated as single traits. Multiple trait animal model is used for 16 linear type traits. Only classification on the first lactations are included.

The animal model includes: herd-year-month of classification, breed groups, age at first calving, stage of lactation and classifiers as fixed effects and random additive genetic effect. Genetic phantom parents groups are defined for unknown sire and dam according to year of birth and country of original. **In January 2018, the new genetic parameters were estimated.**

**The data set used in evaluation May 2026**

| <b>Effects</b>                                              | <b>No. (% daughters)</b> |
|-------------------------------------------------------------|--------------------------|
| Herd-year-month of classification                           | 3 102                    |
| Breed groups                                                | 5                        |
| Stage of lactation                                          | 5                        |
| Age at first calving groups                                 | 3                        |
| Classifiers                                                 | 3                        |
| Animals (total)                                             | 295 948                  |
| <b>Cows with records (total)</b>                            | <b>161 524</b>           |
| Cows with records (unknown sire)                            | 2 494 (1,5 %)            |
| <b>Sires of cows</b>                                        | <b>3 235 (98,5 %)</b>    |
| Sires of cows (registered - insemination)                   | 1 843 (94,7 %)           |
| Sires of cows (registered - natural service)                | 300 (2,4 %)              |
| Sires of cows (unregistered)                                | 1 092 (1,3 %)            |
| Sires of cows (minimum 10 daughters)                        | 1 466 (95,8 %)           |
| <b>Sires of cows (registered - insemination, published)</b> | <b>1 151 (91,6 %)</b>    |
| Sires of cows (registered - natural service, published)     | 135 (2,1 %)              |

Genetic reference base are all bulls with minimum of 10 daughters in the linear evaluation. Criteria for publication of sires evaluations: minimum 10 daughters and 5 herds for insemination (minimum 10 daughters for natural service).

The estimation of breeding value is provided two times per year (Spring - Autumn) in cooperation with Department of Genetics and Breeding Biology, Slovak University of Agriculture in Nitra, contact person doc. Ing. Juraj Candrák, PhD., *E-mail:* [Juraj.Candrak@uniag.sk](mailto:Juraj.Candrak@uniag.sk)