NAV has improved the genetic evaluation for production traits

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Handling of the phenotypic data, i.e. test day (TD) observations in milk, protein and fat, are now done even more precisely than earlier.

Adjusting for milking system

Procedures in milk recording (test day milk sampling) are different in automatic milking systems (AMS) compared to conventional milking systems (CMS). There is more variation in TD fat and protein samples in AMS compared to CMS. This can be due to less protein and fat samples in AMS. The other reason for more variation is that the effect of time between milkings is more difficult to correct in AMS. At the same time there is less variation in TD milk amount in AMS compared to CMS since in AMS TD milk amount is often an average over a longer period of time, e.g. weekly or monthly.

So far the variation in TD observations has been adjusted by time of production and by herd. Beginning from November 2016 the adjustment of variance takes place also by milking systems. This makes the observations from different milking systems even more comparable to each other.

Better handling of erroneous observations

Also, the handling of extremely high or low TD records has been improved. In the new system all TD records in milk, protein and fat are screened in the editing process to see if they differ too much from observations that are considered as reasonable. This is done separately by breed, by parity and by stage of lactation thus allowing different limits for e.g. HOL and JER being in different lactations and being in different stages of lactation. Observations that are considered erroneous are set as missing values in the evaluation. In November 2016 evaluation about 0.01 % of all observations were considered as outliers.

These changes have very little impact on A.I. bulls' breeding values in production traits. Also, majority of the cows have unchanged EBVs. Correlations between old and new EBVs are above 0.995. Biggest changes are seen for cows having one or several TD observations set as missing. The effect of new outlier detection method is the largest for cows having only few observations or having the most extreme TD milk, protein or fat observation that now are set as missing values but were earlier accepted.