Improvements in female fertility evaluation

November 2016

Female fertility evaluation

- Nordic fertility evaluation since 2005
- First improvements implemented in May 2015
  - Animal model
  - Updated genetic parameters
  - Etc.
- Latest improvements in November 2016
  - Semen type
  - CR
  - FIN and SWE Jersey, heterosis for Holstein, data editing

Semen type

- The use of sexed semen is increasing
- The model now corrects for the use of sexed semen for the following fertility traits:
  - Interval from 1st to last insemination
  - No. inseminations
  - Conception rate
- Has a small effect on bulls in general
  - However, stronger effect on youngest ageclasses ➔ sexed semen used more commonly
- Bigger effect on cows inseminated with sexed semen

Conception rate, CR

- Non return rate (NRR) is replaced with CR
  - Cows and heifers
- CR is defined as non-return rate for each insemination and not only NRR for 1st ins
- The breeding goal is unchanged and fertility index includes the same traits as before

Other improvements

- FIN and SWE Jersey-cows included in the breeding value evaluation
- Improved data quality
  - FIN: pregnancy test results
  - SWE: updated editing of heifer data
- Heterosis correction also for Holstein

Effect of improvements

- Correlations between old fertility index and November 2016 fertility index are high
    - Proven bulls: over 0.98
    - Cows: over 0.97
- 97 % of HOL bulls and around 90 % of RDC and JER bulls change less than 4 index units
    - RDC and JER use more sexed semen
- For cows the pattern is same: RDC and JER change more compared to HOL