

## Observed overrating in young bulls is removed

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*It has been observed that especially the youngest genomic tested AI bulls drop more than expected in the period from being used for AI until they have daughter information included in the evaluation. It has also been observed that rapid changes occur for bulls when including information from many daughters. These issues are handled better now. The main effect is that the youngest bulls get lower breeding values than before. However only limited reranking occurs among these bulls and it is still better to use genomic tested bulls than proven bulls.*

Genomic evaluation is still being improved and two major improvements are introduced in November run. This will lead to changes, but the bottom-line is that it was and still is the best strategy to use young genomic tested bulls intensively.

### More correct level of youngest AI bulls

It has been noticed that the breeding values for young genomic tested bulls without daughters were too high. The overrating is greatest for the youngest bulls and smallest for bulls that are close to having daughters in production.

OVERRATING IS REMOVED BY IMPROVING THE METHOD USED FOR CORRECTING THE VARIATION OF BREEDING VALUES ACROSS YEARS. THE EFFECT OF THE CHANGE IS ILLUSTRATED FOR NTM IN RDC IN FIGURE 1. IT SHOWS THAT THE DECREASE FOR BULLS BORN IN YEAR 2012-2014 IS SMALLER THAN FOR BULLS BORN IN 2015.

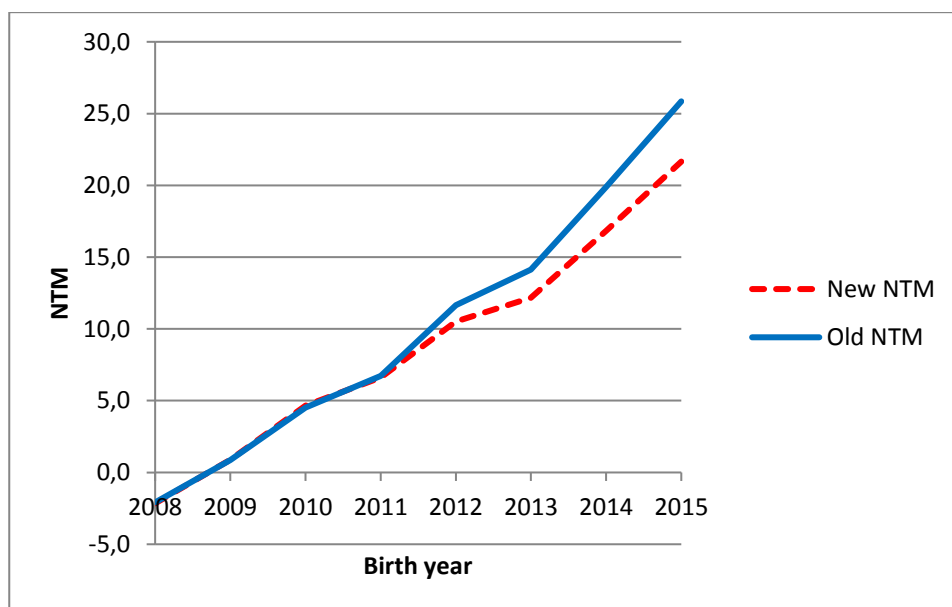


Figure 1. Illustration of the effect of improved standardisation on the genetic trend

The overrating is corrected for all indices in NTM. The decrease in yield index is between 2.6-3.0 index units for the 3 breeds. For longevity the overrating has been 6.6 index units in Holstein, and 3 index units in RDC. In general, the overrating is 0-2 index units for other indices in NTM. But since genomic tested AI bulls in general are among the genetically best, they have positive breeding values for most traits and this makes the overrating of NTM relatively larger than for

single traits: 4.7 for Holstein, 4.3 for RDC, and 2.5 for Jersey – bulls born in 2015. Decrease will be similar for genomic tested heifers.

### **Still a good decision to use young bulls**

Breeding values for youngest AI bulls drop and therefore the difference between progeny tested bulls and newest genomically tested bulls are smaller than earlier. However it is important to stress that the youngest genomic tested AI bulls are still superior to progeny tested bulls, and the genetically best AI bulls have also been chosen in the past. Farmers shall still use young AI sires to maximize the genetic progress in their herd.

### **More smooth change when more daughters are included**

Another observation is that breeding values for some bulls have changed more than expected when information from many daughters was included. This is because the weight on genomic information was too high. The effect was that bulls with positive genomic information for a particular trait in some cases had breeding values that were too high even, when they had a considerable number of daughters included. Conversely some bulls with a negative genomic information for a particular trait in some cases had breeding values that were too low when daughters were included. To handle this weight on genomic information is reduced a bit and more weight is put on daughter information. As a consequence the transition from having only genomic information over genomic + daughter information to almost entirely daughter information is smoother than before.

This is done for all traits in Holstein, RDC and Jersey. For cows the effect is similar for the traits where females are included in reference group (yield, conformation and udder health).

Across breeds correlations are very high for both females (0.98) and for young bulls (0.95).