

## Increased weight on later parities

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The sub-indices in NTM for yield, fertility, udder health, general health, claw health and conformation are based on breeding values from multiple parities. For example, breeding values for protein yield in 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> lactation are combined into one breeding value for protein yield by weighing breeding values from each lactation.

Previously the largest weight was assigned to performance in 1<sup>st</sup> lactation (see Table 1). This reflected to a large degree the distribution of lactations in the dairy populations 10 years ago. Furthermore, at that time, proven bulls were selected based on information from 1<sup>st</sup> parity daughters and increased weight on breeding values for 1<sup>st</sup> lactation gave a higher reliability. Today, we use genomic selection with equal reliabilities for all lactations. Also, replacement rate is lower and will probably decrease further in the future. Across the Nordic countries we expect a future replacement rate of 32 % which gives the current lactation weights (Table 1). These weights will be implemented in the NAV routine genetic evaluation in November 2018, in connection to the updates in NTM.

Table 1. Current and previous weights on breeding values from different lactations.

	Previous weights	Current weights
1 <sup>st</sup> lactation	0.50	0.30
2 <sup>nd</sup> lactation	0.30	0.25
3 <sup>rd</sup> lactation and later	0.20	0.45

The changes from the previous to the current weights seem large and could imply large changes in the yield index, index for udder health etc. However, this is not the case because of the high genetic correlations between breeding values from different lactations. This can be confirmed by comparing index values based on the previous and current weights. The correlations are close to one implying that using the new weights have a very limited effect on the ranking of animals. Nevertheless, it is important that the weighting reflects the future production circumstances and it clearly shows that it is important with long-lived cows!