

Improved breeding values for Growth

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In November 2022 a new model for calculation of breeding values was introduced. In February 2024 the Growth index was calculated for the first time with the new model. The new single step model gives improvements in the calculation of the breeding values compared to the old two step model. More information about the new single step model is written in the article [New method to calculate breeding values for Dairy breeds.](#)

Growth index describes genetic potential for carcass gain and carcass conformation score. Breeding values are based on slaughter carcass weight and carcass conformation (EUROP scale) from male calves.

Small to no effect on NTM

Growth has a small weight in NTM for RDC (0.10) and Holstein (0.08), while it has no weight for Jersey. This means that implementation of the new model for Growth only has a small effect on NTM for Holstein and RDC, while there is no effect for Jersey. For example, an extreme change of 25 index units in Growth for a Holstein heifer, only change the NTM by 2 units. The effect on NTM caused by the new single step model for Growth is minimal for RDC and Holstein compared to the normal changes in NTM between two breeding evaluations.

High stability in general

In general, the changes for the Growth index have been small for Holstein and RDC. There is a small increase in the index level for RDC, while Holstein is unchanged. There is a high stability for the proven sires and none genotyped females. For the genomic tested animals, the changes are a bit larger, but the stability of the indexes are still high.

For Jersey the changes are larger than for the two other breeds. Since growth is calculated from slaughter data for purebred animals the information level for Jersey is very limited and the reliability is therefore significantly lower for Jersey. This gives a larger variation for Jersey and thereby larger reranking according to growth. Since the value of beef production from Jersey is very limited the change in growth index has a minimal effect for the Jersey breed.

Minimal changes for the proven sires

The proven sires show a very high stability, and there are few cases of reranking between the bulls. For RDC the general level for growth increases a bit while it is stable for Holstein. For RDC around 95 percent of the bulls change less than 3 index units while 98 percent of the Holstein bulls change less than 3 index units.

Largest changes for the genomic bulls

For both Holstein and RDC the index level is stable between the two models. However, the variation is higher than for the proven sires, so there will be a small reranking between bulls born in the same year for both breeds. For Holstein and RDC around 60 percent of the bulls change maximum 3 index units, while 20 percent of the bulls change more than 5 index units in growth.

Genotyped females show good stability

The index level for RDC increases a bit, while it is stable for Holstein. For the animals born in the same year, there will be a smaller reranking, but the stability is in general high. The change in indexes follow the same

pattern as for the genomic tested bulls. For the genotyped females 65 percent of them change maximum 3 index units, while only 15 percent changes more than 5 index units.

High stability for none genotyped females

The index level for none genotyped females is unchanged, and only a few cases of reranking can be seen for both Holstein and RDC. Close to 50 percent of the animals will not have a changed index in growth due to implementation of the new single step model, while only 5 percent of the animals change more 3 index units.