

Saved feed adds more value to NTM

Saved feed is introduced in NTM in the evaluation in August 2020. This is another important piece in the puzzle that makes NTM the most efficient tool for Nordic farmers in selecting for the most profitable cow.

NTM is a total merit index that holds traits with an economic importance for Nordic dairy farmers. The number of traits has increased over years due to new registrations being available. Feed efficiency is an important trait that has so far been difficult to include in NTM because of lack of registrations. This will change gradually, and the first step is that NAV includes Saved feed in NTM in August 2020 based on maintenance efficiency. The plan is to include also metabolic efficiency in Saved Feed and in NTM in the near future.

Timeline in introduction of Saved feed

November 2019: First Saved feed EBVs, only maintenance efficiency

August 2020: Saved Feed in NTM

November 2020: Saved feed contains both metabolic- and maintenance efficiency

Weight of Saved feed in NTM

Maintenance efficiency is strongly connected to the body weight of the cow. Mainly 3 factors influence the economic value of this trait:

- **Maintenance need in the rearing period** – eg. smaller cows weigh less at first calving and because of that used less maintenance feed in the rearing period
- **Maintenance need from 1. calving to slaughter** – eg. smaller cows use less feed for maintenance while producing
- **Income from slaughter** – eg. smaller cows give lower income from slaughter

Weight factors for Saved Feed in NTM

RDC: 0.13

Holstein: 0.08

Jersey: 0.18

There is an economical benefit from reducing the weight of the cows, because the saved feed costs from reduced maintenance feed exceed the reduction in income from slaughter. The overall economic value, based on e.g. actual replacement rates, slaughter prices and price of feed, is used to calculate a weight factor in NTM. The weight factors implemented are adjusted according to recommendations from the representatives for each breed.

With the inclusion of Saved feed in NTM, correlation between NTM and other traits will change. The correlation to yield and udder conformation will be lower resulting in a slightly lower, but still considerable favorable, genetic trend. Frame will be the most affected trait and the genetic trend will change in direction of slightly smaller cows. The correlation between NTM and functional traits as health and longevity will be higher, resulting in a more favorable genetic trend for these traits.

For Saved feed itself, having a weight in NTM means that there will be a neutral trend for Holstein or slightly favorable genetic trend for Jersey and RDC, in contrary to previously where the trend was neutral for RDC or slightly unfavorable for Holstein and Jersey.

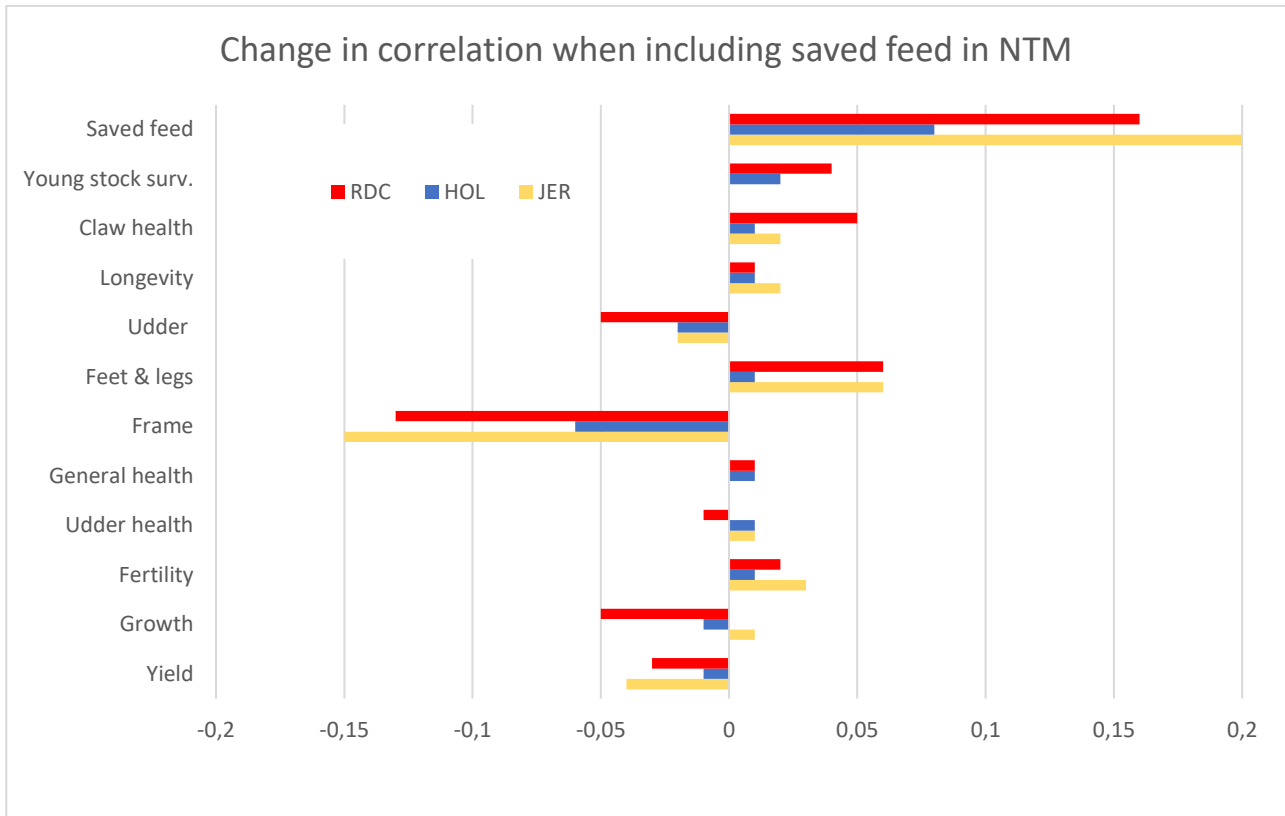


Figure 1. Change in correlation between NTM and selected sub-indices in NTM and frame when including Saved feed in NTM: Note that negative bar in the figure only illustrates that the progress is slightly lower than before, however it is still favorable for all traits included in NTM.

Improved NTM for bulls and cows

Inclusion of Saved Feed in NTM will give changes in NTM, and cause some reranking, of AI bulls and cows. It is a consequence of improving NTM since the genetically most efficient cows and bulls get higher NTM and vice versa. Among all genomic tested bulls born in 2017-2018, results show that 72.5% of Jersey bulls, 79.7% of RDC bulls and 96.4% of Holstein bulls changes less than 2 NTM units.

Table 1. Change in NTM for AI bulls when Saved Feed is included. Bulls born in 2017-2018. Proportion of bulls (%) with different sizes of change.

	RDC	Holstein	Jersey
Decreases more than 3 NTM units	0.1		1.1
Decreases between 2-3 NTM units	8.7	1.8	18.8
Changes less than +/-2 NTM units	79.7	96.4	72.5
Increases between 2-3 NTM units	11.2	1.7	7.0
Increases more than 3 NTM units	0.2		0.6

For cows there will also be changes but they will be somewhat smaller.

Saved feed in NTM gives extra value

The improved NTM is an updated breeding goal which gives more progress for some traits and less for others. Most importantly, the overall economic effect of having a high NTM in your herd is higher than before.

With the weighting of Saved feed in NTM, Jersey and RDC have a favorable trend for Saved feed, while it is zero for Holstein. This means that for RDC and Jersey, a higher NTM will in average also give a higher index for Saved feed. For these breeds a difference of 20 NTM units between 2 bulls will in average result in a difference of 1-2 index units for Saved feed in the offspring, depending on breed.

And a higher index for Saved feed matters. Results show that a difference of 20 index units in Saved feed between two bulls results in a lower maintenance need in their offspring corresponding to 70-100 kg of dry matter in each of their lactations. Thus, saved feed costs for the farmer.

This will be further improved in the future when Saved feed index also includes metabolic efficiency based on feed intake data.

