

## Changes in the official calculation of breeding values in NAV for dairy breeds

Year	Index	Change
2005	All	Indices are presented identically in Denmark, Sweden and Finland
2005	Female fertility	Nordic index for female fertility. New traits and weights in the index
2005	Conformation	Nordic index for body, feet & legs and udder. New weighting and optimum for Holstein and RDC
2006	Yield	Nordic index for yield and transition to a test-day model
2006	Udder health	Nordic index for udder health
2007	Conformation	New weighting of the traits in body, feet & legs and udder
2007	Calving and birth	Nordic calving- and birth index for Holstein
2008	Fertility	Nordic fertility index for Jersey
2008	Conformation	Nordic breeding values for Jersey
2008	Other diseases	Nordic index for other diseases for Holstein and RDC
2008	Yield	Transition to a test-day model for Swedish cows instead of 305 day data
2008	NTM	Nordic total merit index (NTM) replaces the national total merit index
2008	Calving and birth	Nordic calving- and birth index for RDC
2009	Calving and birth	Nordic calving- and birth index for Jersey
2009	Growth	Nordic index for growth for RDC, Holstein and Jersey
2010	All	The cow base is introduced in NAV for all traits
2010	Longevity	Nordic breeding value for longevity
2010	Udder health	Introduction of test-day model for cell count
2010	Udder health	New genetic parameters and transition to animal model

<b>2011</b>	<b>Milkability</b>	<b>Inclusion of data from automatic milk meters</b>
<b>2011</b>	<b>Claw health</b>	<b>Nordic index for claw health</b>
<b>2011</b>	<b>GEBV</b>	<b>Genomic information is included for main traits and NTM</b>
<b>2011</b>	<b>Claw health</b>	<b>The claw health index is included in NTM</b>
<b>2012</b>	<b>NTM</b>	<b>NTM weights are adjusted for RDC and Jersey</b>
<b>2012</b>	<b>Yield</b>	<b>New genetic parameters</b>
<b>2012</b>	<b>GEBV</b>	<b>The cows own performance is blended with the genomic information</b>
<b>2012</b>	<b>Claw health</b>	<b>Genomic breeding values for RDC and Holstein</b>
<b>2013</b>	<b>NTM</b>	<b>NTM weights are adjusted for Jersey, RDC and Holstein</b>
<b>2013</b>	<b>Yield</b>	<b>Change in the weighting of the yield index for Holstein and DRH</b>
<b>2014</b>	<b>Yield</b>	<b>Change in the weighting of the yield index for RDC</b>
<b>2014</b>	<b>Conformation</b>	<b>Body is replaced by frame. Weighting and optimum is altered for Holstein and DRH</b>
<b>2014</b>	<b>NTM</b>	<b>NTM weights are adjusted for RDC</b>
<b>2014</b>	<b>Milkability</b>	<b>Inclusion of Nordic data from more automatic milk meters (robots and stationary monitors)</b>
<b>2014</b>	<b>GEBV</b>	<b>Females are included in the reference population for RDC and Jersey</b>
<b>2014</b>	<b>Conformation</b>	<b>Updated genetic parameters</b>
<b>2014</b>	<b>Conformation</b>	<b>Classifications from later lactations in Denmark and Sweden are included</b>
<b>2014</b>	<b>Youngstock survival</b>	<b>Nordic index for youngstock survival</b>
<b>2015</b>	<b>Fertility</b>	<b>Change to multi lactation animal model and re-estimation of genetic parameters</b>
<b>2015</b>	<b>Claw health</b>	<b>New genetic parameters</b>
<b>2016</b>	<b>Youngstock survival</b>	<b>Genomic breeding values for RDC and Holstein</b>

2016	NTM	Youngstock in NTM
2016	NTM	NTM weights are adjusted for RDC
2016	Calving and birth	Animal model for calving and birth traits
2016	Udder	Udder coordinates from AMS are included
2016	GEBV	Improved standardization of GEBV. Polygenic effect is included
2016	Fertility	Conception rate instead of NRR and correction for sexed semen
2017	General health	New name. Further introduction of Animal Model, ketosis as new trait, BHB and acetone data included and other improvements
2018	Females in reference	Females in reference for calving, fertility, claw health, general health and longevity
2018	NTM	Revision of weights for all traits in NTM
2018	Yield	Revision of weights in yield index – larger weight on fat and concentrated milk
2018	Lactation weights	Weight on 1.:2.:3. lactation changed from 0.5:0.3:0.2 to 0.30: 0.25:0.45
2018	Youngstock survival	Include information on Swedish bull calves
2019	General health	Improved general health evaluation through improved model and use of BHB and acetone records from Finland
2019	Saved feed	NAV published the first Saved feed indices based on maintenance
2019	GEBVs for new traits	GEBVs published for new traits: Saved feed, persistency, carcass conformation and daily carcass gain
2020	NTM	Saved Feed in NTM
2020	Saved feed	Metabolic efficiency included in the Saved feed index
2021	GEBVs for DxD	GEBVs for crossbred dairy cows
2021	Fertility	Model updated for Golden Standard
2022	GEBVs for new traits	GEBVs for new traits: GEBVs for subtraits in claw health and fertility
2022	NTM	Weight for claw health is adjusted for Jersey
2022	Single step	Single step method in use for conformation traits
2022	Udder	New weights in udder index for Jersey
2022	Calving and birth	Genetic parameters and model updated for Golden standard

<b>2023</b>	<b>Yield</b>	<b>Modification on genetic groups in yield for preparing of single step evaluation</b>
<b>2023</b>	<b>Claw health</b>	<b>Single step method in use for Claw health</b>
<b>2023</b>	<b>General health</b>	<b>Single step method in use for General health</b>
<b>2024</b>	<b>Yield</b>	<b>Upgrading of RDC yield model: 1. Improved handling of Finnish AMS milk data, 2. leave FIN HOL data out from RDC model, 3. updated genetic parameters</b>
<b>2024</b>	<b>Growth</b>	<b>Single step method in use for Growth</b>
<b>2024</b>	<b>Milkability</b>	<b>Single step method in use for Milkability</b>
<b>2024</b>	<b>Fertility</b>	<b>Single step method in use for Fertility</b>
<b>2024</b>	<b>Conformation</b>	<b>Updated breed average for all breeds</b>
<b>2024</b>	<b>Udder</b>	<b>Change in optimum for teat placement back and udder balance for Holstein</b>
<b>2024</b>	<b>Udder</b>	<b>New weights in udder index for Holstein</b>
<b>2025</b>	<b>Saved feed</b>	<b>New model for saved feed based on DMI, ECM and weight change instead of maintenance and metabolic efficiency. Maintenance efficiency is still calculated but not a part of saved feed.</b>
<b>2025</b>	<b>NTM</b>	<b>Change of weight for saved feed for Holstein</b>
<b>2025</b>	<b>Yield</b>	<b>Single step method in use for yield</b>
<b>2025</b>	<b>Methane</b>	<b>NAV published the first methane index for Holstein AI bulls</b>
<b>2025</b>	<b>Udder</b>	<b>New weights in udder index for RDC</b>
<b>2025</b>	<b>Temperament</b>	<b>Single step method in use for Temperament</b>
<b>2025</b>	<b>General health</b>	<b>Change of data structure for BHB and acetone and re-estimation of genetic parameters</b>
<b>2026</b>	<b>NTM</b>	<b>Change of weight for saved feed</b>
<b>2026</b>	<b>Methane</b>	<b>NAV published methane index for RDC, Jersey and for Holstein females</b>

Changes are defined as; changes in weight factors in sub-indices or total index, changes of the calculation method (parameters, models etc.) or changes in traits that are part of a sub-index or total index.