News - NAV routine evaluation
15 January 2009

The latest NAV routine evaluation for yield, fertility, type, udder health, other diseases, calving traits, milk ability, temperament and NTM took place as scheduled. NAV carried out three evaluations per trait group:

Holstein evaluation, including data from: Danish Holstein, Danish Red Holstein, Swedish Holstein, Finnish Holstein, Finnish Ayrshire and Finn Cattle.

Red Dairy Cattle evaluation, including data from: Danish Red, Swedish Red, Finnish Ayrshire, Finnish Holstein and Finn Cattle.

Jersey evaluation, including data from: Danish Jersey and Swedish Jersey (only yield).

Extraction dates
Dates for extraction of data from national databases are given in table 1.

Table 1. Dates for extraction of data from the national databases

Trait	Denmark	Finland	Sweden
Yield	03.12.2008	30.11.2008	01.12.2008
Type, milk ability and temperament	10.12.2008	30.11.2008	26.11.2008
Fertility	30.11.2008	30.11.2008	28.11.2008
Udder health and other disease	10.12.2008	30.11.2008	28.11.2008
Calving	10.12.2008	30.11.2008	28.11.2008

News in relation to NAV genetic evaluation
No changes

Genetic base
EBVs for bulls and females are expressed on the same cow base. This genetic evaluation included cows born from 15.01.2004 to 15.01.2006 in the genetic base (average 100).

For functional traits, sire models are used and EBVs for cows are not estimated. For functional traits, the genetic base includes bulls, which are sires of present cows – see table 2.

Table 2. Definition of genetic base for cows and bulls

Trait	Genetic base
Yield, type, milk ability and temperament	Cows born 15.01.2004 -15.01.2006
Fertility, calving, mastitis resistance and resistance against other diseases	Bulls born 15.01.2000 -15.01.2002

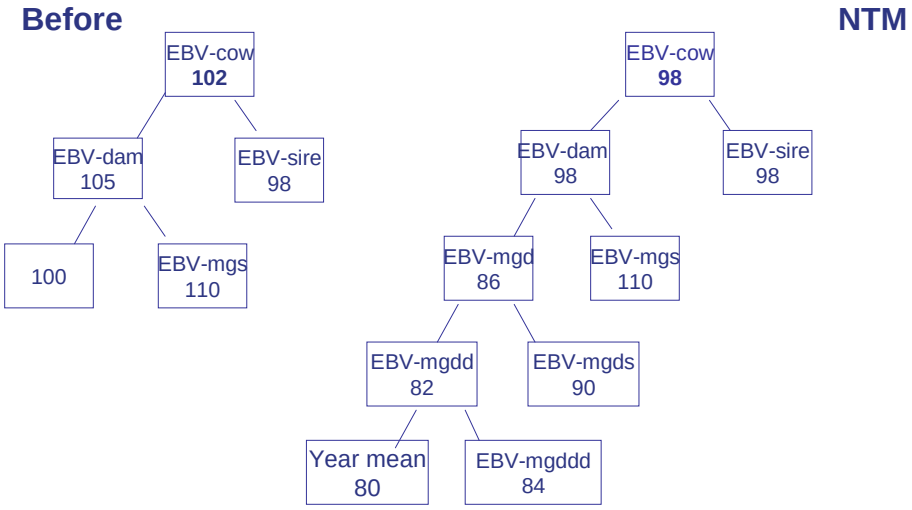
NTM – Nordic Total Merit Index
NTM - Nordic Total Merit - is the name of the total economic index for dairy cattle in Finland, Sweden and Denmark. This means that bulls and cows in all three countries have a NTM breeding value calculated the same way. It also means that, for example, a bull which is used in more than one country will have exactly the same NTM, independent of whether he is used in Finland, Sweden and Denmark. Tables 3-6 give the weight factors for the different breeds

used when calculating NTM. Weight factors are slightly different for cows and bulls due to an approximate multi trait method used for cow NTM.

Pedigree index
A pedigree index is calculated for all traits without an official EBV based on daughter or own records for both cows and bulls. The pedigree index is calculated as an average of sire and dam EBVs for both bulls and females - starting from the oldest animal

$$\text{Pedigree Index} = ½\ EBV_{sire} + ½\ EBV_{dam}$$

The pedigree index is calculated based on all information in the pedigree as illustrated for fertility for a female in figure 1. When the pedigree index is traced back to an unknown animal the EBV is set to a birth year mean. Birth year mean is calculated per country breed. This method is applied for all traits. The principles are illustrated in figure 1 for a female for fertility.



Figur 1 Example - female pedigree index for fertility

Table 3. Weights factors for bulls and cows in NTM for Holstein

Trait	**NTM weight**	**NTM cow weights considering approx Multi Trait**	
	Bulls	**Cow with own yield records**	**Cow with yield records and own udder conformation records**
Yield index	0.75	**0.68**	**0.68**
Growth	0.06	0.06	0.06
Fertility	0.31	0.31	0.31
Birth index	0.15	0.15	0.15
Calving index	0.17	0.17	0.17
Udder health	0.35	0.35	0.35
Other disease	0.12	0.12	0.12
Body	0.00	0.00	0.00
Feet & legs	0.15	0.15	0.15
Udder	0.18	0.18	**0.23**
Milk ability	0.08	0.08	0.08
Temperament	0.03	0.03	0.03
Longevity	0.11	0.11	0.11

Table 4. Weights factors for bulls and cows in NTM for RDC

Trait	**NTM weight**	**NTM cow weights considering approx Multi Trait**	
	Bulls	**Cow with own yield records**	**Cow with yield records and own udder conformation records**
Yield index	0.92	**0.84**	**0.84**
Growth	0.00	0.00	0.00
Fertility	0.26	0.26	0.26
Birth index	0.14	0.14	0.14
Calving index	0.12	0.12	0.12
Udder health	0.32	0.32	0.32
Other disease	0.12	0.12	0.12
Body	0.00	0.00	0.00
Feet & legs	0.09	0.09	0.09
Udder	0.32	0.32	**0.37**
Milk ability	0.06	0.06	0.06
Temperament	0.03	0.03	0.03
Longevity	0.08	0.08	0.08

Table 5. Weights factors for bulls and cows in NTM for Jersey

Trait	**NTM weight**	**NTM cow weights considering approx Multi Trait**	
	Bulls	**Cow with own yield records**	**Cow with yield records and own udder conformation records**
Yield index	0.87	**0.78**	**0.78**
Growth	0.00	0.00	0.00
Fertility	0.26	0.26	0.26
Birth index	0.06	0.06	0.06
Calving index	0.06	0.06	0.06
Udder health	0.49	0.49	0.49
Other disease	0.04	0.04	0.04
Body	0.00	0.00	0.00
Feet & legs	0.05	0.05	0.05
Udder	0.15	0.15	**0.22**
Milk ability	0.10	0.10	0.10
Temperament	0.03	0.03	0.03
Longevity	0.12	0.12	0.12

Table 6. Weights factors for bulls and cows in NTM for Red Holstein

Trait	**NTM weight**	**NTM cow weights considering approx Multi Trait**	
	Bulls	**Cow with own yield records**	**Cow with yield records and own udder conformation records**
Yield index	0.75	**0.68**	**0.68**
Growth	0.11	0.11	0.11
Fertility	0.23	0.23	0.23
Birth index	0.17	0.17	0.17
Calving index	0.17	0.17	0.17
Udder health	0.35	0.35	0.35
Other disease	0.12	0.12	0.12
Body	0.00	0.00	0.00
Feet & legs	0.15	0.15	0.15
Udder	0.24	0.24	**0.29**
Milk ability	0.08	0.08	0.08
Temperament	0.03	0.03	0.03
Longevity	0.11	0.11	0.11

Publication of NTM

A bull gets an official NTM, when the bull has official EBVs for yield, type and mastitis. For traits without an official EBV, a pedigree index is used.

NAV – frequency and timing of routine runs

NAV performs 6 evaluations per year for all traits. The NAV evaluations are timed in a way so NAV can deliver updated EBVs to all the international evaluations. In Table 7, the current and future NAV and INTERBULL release dates are shown.

Table 7. NAV and INTERBULL release dates in 2009. EBVs released at NAV dates in bold will be delivered to international genetic evaluation

	2009	
Month	NAV	INTERBULL
January	15	13
February		
March	**13**	
April		7
May	15	
June		
July		
August	**14**	18
September		
October	15	
November		
December	**1**	

You can get more information about the joint Nordic evaluation:

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