News - NAV routine evaluation
9 August 2011

The latest NAV routine evaluation for yield, fertility, type, udder health, other diseases, calving traits, milk ability, temperament, growth, longevity, claw health 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 and type).

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	22.06.2011	12.06.2011	19.06.2011
Type, milk ability and temperament	23.06.2011	12.06.2011	13.06.2011
Fertility	23.06.2011	12.06.2011	18.06.2011
Udder health and other disease	23.06.2011	12.06.2011	18.06.2011
Calving	23.06.2011	12.06.2011	18.06.2011
Longevity	23.06.2011	12.06.2011	18.06.2011
Growth	23.06.2011	12.06.2011	17.06.2011
Claw health	23.06.2011	12.06.2011	22.06.2011

News in relation to NAV genetic evaluation

NTM
Claw health is included in the NTM for the first time.

Genomic EBVs (GEBVs)
NAV published for the first time GEBVs for all linear type traits. At the routine evaluation in May GEBVs were estimated for all combined traits in NTM and for NTM.

Other traits
No changes

Genetic base
EBVs for bulls and females are expressed on the same cow base. This genetic evaluation included cows born from 09.08.2006 to 09.08.2008 in the genetic base (average 100).

Table 2. Definition of genetic base for cows and bulls

Trait	Genetic base
Yield, type, milk ability, temperament, longevity, mastitis resistance, growth*, fertility, calving, claw health and resistance against other diseases	Cows born 09.08.2006 - 09.08.2008

*Bull calves born in the same period

Genomic EBVs (GEBVs)
GEBVs combine genomic and phenotypic information. GEBVs are estimated for all combined traits in NTM, single type traits, and NTM. Table 3 describes how different categories of genotyped animals are handled in the evaluation. All non genotyped animals get traditional EBVs.

Table 3 Publication of Genomic breeding values (GEBVs) for different categories of animals

Category of animals		Status	Published Breeding value
Genotyped males	Bulls without a progeny test	Culled	None
		AI bulls with a Nordic herd book number	**GEBV** when at least 20 month old at publication date
	Bulls with a Nordic or a progeny test abroad	AI bulls with a Nordic progeny test	EBV
		Foreign AI bulls with a Nordic herd book number and a progeny test abroad	IB EBV for all international traits available. **GEBV** for traits with pedigree information only
Genotyped females	Heifers		**GEBV**
	Cows		**GEBV** for traits with pedigree information only (e.g. Other disease, fertility, calving) and EBVs for all other traits

- EBV=Estimated breeding value based on phenotypic data only
- IB EBV = Interbull breeding value based on phenotypic data only
- GEBV=Genomic Enhanced breeding value – based on phenotypic data and genomic information

For animals having a GEBVs the GEBV is published as the official index instead of the EBV

NAV will in the coming months work with:

- GEBVs for DRH
- GEBVs for genotyped bulls with daughters
- Genotyped cows with own records

Reliabilities
The reliability of genomic information varies between traits and breeds. Table 4 give a general picture of the reliability of the genomic information used when weighting genomic information and phenotypic information together in GEBV.

Table 4 Reliability of genomic information

	Reliability genomic information
RDC	0.30-0.40
Holstein	0.40-0.50
Jersey	0.20-0.30

NTM

Claw health is included in the NTM for the first time in august 2011. For females a pedigree index for claw health is used.

Table 5. Holstein weight factors for the old NTM – and the new NTM with claw health included

	Old	New August 2011
Yield*	0.75/0.68	0.75/0.68
Growth	0.06	0.06
Fertility	0.31	0.31
Birth index	0.15	0.15
Calving index	0.17	0.17
Udder health	0.35	0.35
Other diseases	0.12	0.11
Body	0.00	0.00
Feet&Legs	0.15	0.12
Udder	0.18	0.18
Milk ability	0.08	0.08
Temperament	0.03	0.03
Longevity	0.11	0.11
Claw health		0.08

*Weight factor for bulls/weight factor for cows with own yield record

Table 6. RDC weight factors for the current NTM – and the new NTM with claw health included

	Old	New August 2011
Yield*	0.92/0.84	0.92/0.84
Growth	0.00	0.00
Fertility	0.26	0.26
Birth index	0.14	0.14
Calving index	0.12	0.12
Udder health	0.32	0.32
Other diseases	0.12	0.12
Body	0.00	0.00
Feet&Legs	0.09	0.09
Udder	0.32	0.32
Milk ability	0.06	0.06
Temperament	0.03	0.03
Longevity	0.08	0.08
Claw health		0.05

*Weight factor for bulls/weight factor for cows with own yield record

Table 7. Jersey weight factors for the current NTM – and the new NTM with claw health included

	Old	New August 2011
Yield*	0.87/0.78	0.87/0.78
Growth	0.00	0.00
Fertility	0.26	0.26
Birth index	0.06	0.06
Calving index	0.06	0.06
Udder health	0.49	0.49
Other diseases	0.04	0.04
Body	0.00	0.00
Feet&Legs	0.05	0.04
Udder	0.15	0.15
Milk ability	0.10	0.10
Temperament	0.03	0.03
Longevity	0.12	0.12
Claw health		0.05

*Weight factor for bulls/weight factor for cows with own yield record

Table 8. Red Holstein weight factors for the current NTM – and the new NTM with claw health included

	Old	New August 2011
Yield*	0.75/0.68	0.75/0.68
Growth	0.11	0.11
Fertility	0.23	0.23
Birth index	0.17	0.17
Calving index	0.17	0.17
Udder health	0.35	0.35
Other diseases	0.12	0.12
Body	0.00	0.00
Feet&Legs	0.15	0.15
Udder	0.24	0.24
Milk ability	0.08	0.08
Temperament	0.03	0.03
Longevity	0.11	0.11
Claw health		0.10

*Weight factor for bulls/weight factor for cows with own yield record

More information about economic value of claw health see
http://www.nordicebv.info/Forside.htm

Publication of NTM for Nordic and foreign bulls
A NTM is published if the bull has official EBVs (NAV EBV or international EBV) for Yield, Mastitis and Type. By official means for NAV EBVs that the NAV thresholds are met and for international EBVs (IB EBVs) that Interbull estimates EBVs for the single bull. EBVs are used in the following priority NAV EBVs, IB EBVs and Pedigree index. For traits without a NAV EBV or an IB EBV a NAV pedigree index is calculated.

For bulls with a Nordic herd book number the pedigree index follows the principles described in the October 2008 routine information. For foreign bulls without a Nordic herd book number the pedigree index is calculated in as ½(EBVsire-100) +1/4(EBVmgs-100) +100. If EBVsire or EBVmgs is not official NAV EBVs then 100 is used.

NAV – frequency and timing of routine runs
NAV has 4 evaluations per year including all phenotypic data. In Table 9 the future NAV and INTERBULL release dates are shown. NAV does four extra genomic predictions to get GEBVs based on the newest information for all genotyped bull calves and females. The extra runs take place 15.9, 15.12, 15.3 and 15.6. After the extra runs GEBVs for females are published on national data bases

Table 9. NAV and INTERBULL release dates in 2011. EBVs released at NAV dates in bold will be delivered to international genetic evaluation.

	2011	
Month	NAV	INTERBULL
January 2011		
February 2011	**2**	
March 2011		
April 2011		5
May 2011	2	
August 2011	**9**	9
September 2011		
October 2011		
November 2011	**2**	
December 2011		6

You can get more information about the joint Nordic evaluation:

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