News - NAV routine evaluation
2 May 2012

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	23.03.2012	18.03.2012	22.03.2012
Type, milk ability and temperament	03.04.2012	18.03.2012	23.03.2012
Fertility	23.03.2012	18.03.2012	24.03.2012
Udder health and other disease	03.04.2012	18.03.2012	24.03.2012
Calving	03.04.2012	18.03.2012	24.03.2012
Longevity	03.04.2012	18.03.2012	24.03.2012
Growth	26.03.2012	18.03.2012	15.03.2012
Claw health	03.04.2012	18.03.2012	22.03.2012

Data used in genomic prediction
Genotypes were extracted from the joint Nordic SNP data base 12th April 2012. Interbull information from April 2012 and national information according to extraction dates in table 1 were included in genomic prediction.

News in relation to NAV genetic evaluation
New genetic parameters are used in the genomic prediction. Until March 2012 estimated genomic variances based on the deregressed proofs have been used. In the 15th March run and 2nd May run the same genetic parameters (NAV parameters) as used in the routine run with phenotypic data are used. Furthermore the standardization of the genomic breeding values has been reestimated including the most recent birth years of bulls with milking daughters. For RDC and Holstein with large reference populations the updates have very little effect. The correlations between GEBVs from a model with NAV genetic parameters and updated reference population are in general very high. For Jersey the effect is somewhat larger illustrating the uncertainty related to GEBVs for Jersey due to a small reference population. The lowest correlations are found for Jersey for birth and calving traits where the genomic variances have been estimated with the highest standard error. Furthermore the standard deviation of EBVs are effected to some extent for Jersey

Genetic base
EBVs for bulls and females are expressed on the same cow base. This genetic evaluation included cows born from 02.05.2007 to 02.05.2009 in the genetic base (average 100).

Genomic EBVs (GEBVs)
GEBVs combine genomic and phenotypic information. GEBVs are estimated for all combined traits in NTM, single type traits, and NTM. Table 2 describes how different categories of genotyped animals are handled in the evaluation. All non genotyped animals get traditional EBVs.

Table 2 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 genotyped bulls with daughters
- Genotyped cows with own records

Reliabilities
The reliability of genomic information varies between traits and breeds. Table 3 give a general picture of the reliability of the genomic information used when weighting genomic information and phenotypic information together in GEBV.

Table 3 Reliability of genomic information

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

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 4 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 15.3, 15.6, 15.9 and 15.12. After the extra runs GEBVs for females are published on national data bases

Table 4. NAV and INTERBULL release dates in 2012. EBVs released at NAV dates in bold will be delivered to international genetic evaluation.

	2012	
Month	NAV	INTERBULL
January 2012		
February 2012	**2**	
March 2012		
April 2012		3
May 2012	2	
August 2012	**14**	14
September 2012		
October 2012		
November 2012	**2**	
December 2012		4

You can get more information about the joint Nordic evaluation:

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