News - NAV routine evaluation
2 November 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	21.09.2011	18.09.2011	15.09.2011
Type, milk ability and temperament	30.09.2011	18.09.2011	12.09.2011
Fertility	30.09.2011	18.09.2011	17.09.2011
Udder health and other disease	30.09.2011	18.09.2011	17.09.2011
Calving	30.09.2011	18.09.2011	17.09.2011
Longevity	30.09.2011	18.09.2011	17.09.2011
Growth	30.09.2011	18.09.2011	17.09.2011
Claw health	30.09.2011	18.09.2011	27.09.2011

Data used in genomic prediction
Genotypes were extracted from the joint Nordic SNP data base 19th October 2011. Interbull information from August 2011 and national information according to extraction dates in table 1 were included in genomic prediction.

News in relation to NAV genetic evaluation

Genomic prediction
GEBVs are published for the first time for genotyped DRH animals for all traits in NTM and linear type traits. DRH animals are included in the Holstein reference population. The GEBVs for Body, Udder and Feet&Legs are estimated based on Holstein weights and optimum to be able to estimate GEBVs for these traits.

Claw health
Procedures for editing of Finnish data have been improved which means extra 55,000 claw trimmer registrations from Finland are used in the routine evaluation. The changes in EBVs from August to November routine run are due to the extra data somewhat larger than we normally see between two subsequent routine evaluations for bulls tested in Finland.

Genetic base
EBVs for bulls and females are expressed on the same cow base. This genetic evaluation included cows born from 02.11.2006 to 02.11.2008 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 2011/2012. EBVs released at NAV dates in bold will be delivered to international genetic evaluation.

	2011/12	
Month	NAV	INTERBULL
November 2011	**2**	
December 2011		6
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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