News - NAV routine evaluation
2 February 2013

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	02.01.2013	17.12.2012	13.12.2012
Type, milk ability and temperament	02.01.2013	17.12.2012	10.12.2012
Fertility	02.01.2013	17.12.2012	15.12.2012
Udder health and other disease	02.01.2013	17.12.2012	15.12.2012
Calving	02.01.2013	17.12.2012	15.12.2012
Longevity	02.01.2013	17.12.2012	15.12.2012
Growth	02.01.2013	17.12.2012	17.12.2012
Claw health	02.01.2013	17.12.2012	16.12.2012

Data used in genomic prediction
Genotypes were extracted from the joint Nordic SNP data base 14th January 2013. The annual exchanges of genotypes within Eurogenomics for Holstein have taken place and genotypes from the last birth year of bulls with milking daughters are included in the reference population. Interbull information from December 2012 and national information according to extraction dates in table 1 were included in genomic prediction.

News in relation to NAV genetic evaluation
GEBVs are published for genotyped young bulls from 17 months of age.

Genetic base
EBVs for bulls and females are expressed on the same cow base. This genetic evaluation included cows born from 02.02.2008 to 02.02.2010 in the genetic base (average 100).

The fixed genetic base for production traits has been moved from cows born in year 2000 to cows born in year 2005. EBVs expressed on the fixed genetic base are mainly used in relation to export certificates. Table 2 show the effect of base changes per breed.

Table 2 Genetic base differences in EBVs - base 2000 minus base 2005.

	Holstein	Red Holstein	RDC	Jersey
Milk kg	512	670	488	327
Protein kg	19.3	20.3	19.3	15.0
Fat kg	19.0	18.8	18.7	16.1
Protein %	0.02	-0.04	0.03	0.03
Fat %	-0.03	-0.15	-0.02	-0.06

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 17 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 & cows		**GEBV**

- 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

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

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 5 the future NAV and INTERBULL release dates are shown. NAV does seven extra genomic predictions to get GEBVs based on the newest information for all genotyped bull calves and females. The extra runs in 2013 take place 2.3, 2.4, 2.6, 2.7, 2.9, 2.10, 2.12. After the extra runs GEBVs for females are published on national data bases

Table 5. NAV and INTERBULL release dates in 2013. EBVs released at NAV dates in bold will be delivered to international genetic evaluation.

	2013	
Month	NAV	INTERBULL
January 2013		
February 2013	**4**	
March 2013		
April 2013		9
May 2013	2	
August 2013	**13**	13
September 2013		
October 2013		
November 2013	**2**	
December 2013		3

You can get more information about the joint Nordic evaluation:

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