

# **News - NAV routine evaluation**

## **11 August 2015**

The latest NAV routine evaluation for yield, fertility, type, udder health, other diseases, calving traits, milk ability, temperament, growth, longevity, young stock survival, 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

<b>Trait</b>	<b>Denmark</b>	<b>Finland</b>	<b>Sweden</b>
Yield	23.06.2015	15.06.2015	18.06.2015
Type, milkability and temperament	22.06.2015	15.06.2015	18.06.2015
Fertility	22.06.2015	15.06.2015	20.06.2015
Udder health and other disease	22.06.2015	15.06.2015	20.06.2015
Calving	22.06.2015	15.06.2015	20.06.2015
Longevity	22.06.2015	15.06.2015	20.06.2015
Growth	23.06.2015	15.06.2015	22.06.2015
Claw health	22.06.2015	15.06.2015	16.06.2015
Young stock survival	22.06.2015	15.06.2015	20.06.2015

### **Data used in genomic prediction**

Genotypes were extracted from the joint Nordic SNP data base 10 July 2015. INTERBULL information from April 2015 and national information from present run were included in genomic prediction.

### **News in relation to NAV genetic evaluation**

#### **Genomic prediction**

- GEBV for females for linear traits
- Overall type traits calculated from GEBV of linear traits

#### **Traditional evaluation**

- Publication rules – transition from GEBV to EBV
- Milking speed – data deleted

#### **Genomic prediction**

Starting 11<sup>th</sup> August GEBVs are published for linear type traits for females. Furthermore all GEBVs for overall type traits are now calculated from linear traits, and not as it has been the case so far directly from deregressed EBVs for frame, and mammary for all three breeds, and for feet and legs for RDC and Jersey. The correlations between the new and old overall type traits are in general high >0.95, and only slightly lower than what we usually observe between subsequent evaluations, but for frame in RDC we do see quite big changes – the correlations new and old GEBVs for frame in RDC

are about 0.92 for candidates. Furthermore the RDC GEBVs for Feet and legs are 2-3 index units lower with the new than the old method for calculating GEBV for combined feet and legs.

### Traditional evaluation

#### Publication rules – transition from GEBV to EBV

NAV publication rules in relation to GEBV and EBV have been changed.

The procedures for publication are kept unchanged for all bulls born before 2010. But for bulls born after 2009, where NAV has access to a genotype the threshold for publication of EBV instead of GEBV has been changed. In table 2 the new thresholds (column II) for Nordic bulls are presented. Please note that a GEBV for a bull having a progeny test, and a genotype include both sources of information.

**Table 2 DFS bulls - NAV EBV reliability thresholds for publication NAV EBV instead of GEBV**

I	II	III	IV
<b>Traits</b>	<b>Bulls with a GEBV and born after 2009 Threshold going from GEBV to EBV</b>	<b>Bulls without a GEBV or born before 2010 Threshold publishing EBV</b>	<b>Comments</b>
Yield traits	90%	60% and 10 daughters	At least 10 daughters more than 100 days from calving.
Type traits	50 daughters	15 daughters	
Milk ability	50 daughters or type traits pass threshold	15 daughters or type traits pass threshold	
Temperament	Published if type traits pass threshold	Published if type traits pass threshold	
Fertility	75%	35%	At least 10 daughters with ICF
Mastitis	75%	40%	
Calving traits maternal	75% (Jersey 40%)	40%	
Calving traits direct	75%	50%	
Other diseases	75% (Jersey 35%)	35%	
Longevity	75%	50%	
Beef production	75% (Jersey 50%)	60% (50% Jersey)	
Claw Health	75% (Jersey 40%)	40%	
NTM	Official EBVs for yield, type and mastitis	Official EBVs for yield, type and mastitis	

For foreign bulls born after 2009 having a DFS AI code and genotype, a GEBV is published for all traits. The GEBV include the Interbull EBV if the bull has a foreign progeny test. For yield traits the Interbull EBV is published instead of the GEBV, when Interbull EBV reliability is over 90% then. For foreign bulls born before 2010 or with no genotype in DFS the publication rules are kept unchanged (<http://www.nordicebv.info/NR/rdonlyres/208DD805-6378-4BF0-8D0A-731F3B0E245D/0/20120618CriteriaForInterbullEBVs.pdf>)

In a bit longer perspective NAV might publish blended GEBVs for all genotyped bulls independent of EBV reliability, but it requires some further investigations before that step can be taken.

### Milking speed

A software error made by Trutest has created an error in milking time measurements from Trutest meters used in Denmark. Trutest has informed that the error has existed since 1. April 2014. NAV has deleted all milk flow data registered after 1 April 2014 from the evaluation. RYK expect the error is corrected in all Trutest meters in August 2015. The deletion of more than one year of data create of course quite big changes in EBVs for milking speed for Danish cows having records in the effected period and for bulls having lots of milking daughters in Denmark – especially EBVs for bulls born in 2010 are effected.

### **Genetic base**

EBVs for bulls and females are expressed on the same cow base. This genetic evaluation included cows born from 11.8.2010 to 11.8.2012 in the genetic base (average 100).

### **GMACE**

Interbull GEBVs are available for genotyped Holstein bulls from the countries participating in the GMACE routine evaluation.

The figures can be found on the NAV search page for Interbull EBVs

<https://fabaweb.mloy.fi/SKJOWeb/WWWjasu/NAVSearch.asp?strLang=DNK&strBreed=&strBirthCountry=&strBirthCountryID=&strName>

### **Publication of NTM for Nordic and foreign bulls**

A NTM is published if the bull has official EBVs (NAV (G)EBV or international (G) 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 EBVs for the single bull exist. For traits without a NAV (G)EBV or an IB (G)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  $\frac{1}{2}(\text{EBVsire}-100) + \frac{1}{4}(\text{EBVmgs}-100) + 100$ . If EBVsire or EBVmgs is not official NAV EBVs then 100 is used.

### **NAV search page**

NAV publish (G)EBVs for herd book registered AI bulls from all three countries at a joint Nordic search page <https://nordic.mloy.fi/navbull>

### **NAV – frequency and timing of routine runs**

NAV has 4 evaluations per year including all phenotypic data. In table 3 the future NAV and INTERBULL release dates are shown. NAV does eight extra genomic predictions to get GEBVs based on the newest information for all genotyped bull calves and females. The extra runs in 2015 takes place 6.1, 3.3, 7.4, 2.6, 7.7, 1.9, 6.10, and 1.12. After the extra runs GEBVs for females are published on national data bases

Table 3. NAV and INTERBULL release dates in 2015. EBVs released at NAV dates in bold will be delivered to international genetic evaluation.

Month	NAV	INTERBULL
January 2015		
February 2015	<b>3</b>	
March 2015		
April 2015		7
May 2015	5	

June 2015		
July 2015		
August 2015	<b>11</b>	11
September 2015		
October 2015		
November 2015	<b>3</b>	
December 2015		1

You can get more information about the joint Nordic evaluation:

**General about Nordic Cattle Genetic Evaluation:** [www.nordicebv.info](http://www.nordicebv.info)

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**Sweden:** [www.sweebv.info](http://www.sweebv.info), [www.vxa.se](http://www.vxa.se)

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