News - NAV routine evaluation
February 5, 2019

Dairy cattle
The latest NAV routine evaluation for yield, fertility, conformation, udder health, general health, calving traits, milkability, 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, 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, Swedish Jersey and Finnish Jersey.

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	17.12.2018	09.12.2018	07.12.2018
Type, milkability and temperament	17.12.2018	09.12.2018	07.12.2018
Fertility	17.12.2018	09.12.2018	08.12.2018
Udder health and other disease	17.12.2018	09.12.2018	08.12.2018
Calving	17.12.2018	09.12.2018	08.12.2018
Longevity	17.12.2018	09.12.2018	08.12.2018
Growth	17.12.2018	09.12.2018	08.12.2018
Claw health	17.12.2018	09.12.2018	08.12.2018
Youngstock survival	17.12.2018	09.12.2018	08.12.2018

Data used in genomic prediction
Genotypes were extracted from the joint Nordic SNP data base 14th January 2019. INTERBULL information from December 2018 was included in the genomic prediction.

News in relation to NAV genetic evaluation
Genomic prediction
No changes

Traditional evaluation
New editing procedure Swedish mastitis data

Editing of Swedish mastitis data
New editing procedures for the Swedish data have been developed to harmonize the data used in the udder health evaluation across the Nordic countries. The new procedures follow the procedures implemented in the General Health evaluation in November 2017. For Sweden, about 10% of lactations with incomplete reporting of mastitis treatments have been removed. The phenotypic level (frequency of mastitis) for Sweden after excluding data from these herds increased about 10% for the

whole time period and the change was constant over years. Denmark and Finland had already similar editing in place.

Including information from only those herds for which health recording is complete means that some previously used information were excluded. This means that some bulls lost daughter information from Sweden compared to previous evaluations. The number of ”lost” daughters per bull varied very much. Some of the bulls did not lose any daughters but some heavily used elite sires lost thousands of daughters. E.g. widely known RDC bull Peterslund 91213 lost over 6300 daughters with the data change. The average number of ”lost” daughters were very moderate though, 33 for RDC and 17 for HOL.

The effect of the changed editing has in general a minor effect on bulls having majority of daughter group in Sweden. The changes in mastitis index ranged from -8 to +7 for RDC bulls, and between -5 and +5 for HOL bulls. On average, the change in mastitis index was -0.1 index points both for RDC and HOL. Correlations between previous and new mastitis index were above 0.99 for A.I. bulls. For RDC and HOL cows the average changes wer below -0.1 index points, but changes ranged between -9 and 14.

Genetic base
EBVs for bulls and females are expressed on the same cow base. This genetic evaluation included cows born from 05.02.2014 to 05.02.2016 in the genetic base (average 100).

Publication of NTM for Nordic and foreign bulls
NTM is published if the bull has official EBVs (NAV (G)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 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 ½(EBVsire-100) +1/4(EBVmgs-100) +100. If EBVsire or EBVmgs is not official NAV EBVs then 100 is used.

Publication of EBVs/GEBVs
Official EBVs/GEBVs for bulls used for AI in Denmark, Finland or Sweden are published at the NAV Bull Search.

Official NAV GEBVs for foreign AI bulls not used for AI in Denmark, Finland and Sweden are published at NAV homepage. The excel sheets also include GEBVs for bulls used for AI in Denmark, Finland and Sweden. The excel sheets include AI bulls that are 10 months to 5 years old at the date of publication, and is mainly useful for foreign AI-companies.

Interbull EBVs/GEBVs are published at the NAV Interbull Search page.

Genetic eveluation of beef bulls used in dairy herds
The latest NAV routine evaluation for AI beef bulls based on their crossbred offspring from dairy cows for calving and carcass traits took place as scheduled. Breeding values for AI beef bulls will be estimated four times per year, in connection to the NAV routine genetic evaluation for dairy breeds (table 2), and EBVs are published at https://www.nordicebv.info/beef-cattle/beef-x-dairy-publication/

NAV – frequency and timing of routine runs

NAV has 4 large evaluations per year, which include updated phenotypic and genomic data, and additional eight small runs including updated genotypes. In Table 2 the NAV and INTERBULL release dates for 2019 are shown. The beef evaluation based on beefxdairy crossbreeds will take place along with the large NAV runs 4 times a year.

Table 2. NAV and INTERBULL release dates in 2019. EBVs released at NAV dates in bold will be delivered to international genetic evaluation.

Month	NAV Small run[1)]	NAV Large runs[2)3)]	INTERBULL
January 2019	3		
February 2019		5	
March 2019	5		
April 2019	2		2
May 2019		7	
June 2019	4		
July 2019	2		
August 2019		13	13
September 2019	3		
October 2019	1		
November 2019		5	
December 2019	3		3

[1)] Genotypes updated; [2)] Genotypes and phenotypes updated; 3) Beef evaluation

You can get more information about the joint Nordic evaluation:
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