

News - NAV routine evaluation

February 4, 2020

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, saved feed 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	17.12.2019	09.12.2019	06.12.2019
Type, milkability and temperament	17.12.2019	09.12.2019	06.12.2019
Fertility	17.12.2019	09.12.2019	07.12.2019
Udder health and other disease	17.12.2019	09.12.2019	07.12.2019
Calving ¹⁾	17.12.2019	09.12.2019	07.12.2019
Longevity	17.12.2019	09.12.2019	07.12.2019
Growth ¹⁾	17.12.2019	09.12.2019	07.12.2019
Claw health	17.12.2019	09.12.2019	07.12.2019
Youngstock survival	17.12.2019	09.12.2019	07.12.2019
Saved feed	17.12.2019	09.12.2019	06.12.2019

¹⁾Including data for the evaluation of beef bulls used on dairy

Data used in genomic prediction

Genotypes were extracted from the joint Nordic SNP data base 9th January 2020. INTERBULL information from December 2019 was included in the genomic prediction.

News in relation to NAV dairy genetic evaluation

Traditional evaluation

No changes

Genomic prediction

No changes

Genetic base

EBVs for bulls and females are expressed on the same cow base. This genetic evaluation included cows born from 04.02.2015 to 04.02.2017 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 $\frac{1}{2}(\text{EBVsire}-100) + \frac{1}{4}(\text{EBVmgs}-100) + 100$. If EBVsire or EBVmgs is not official NAV EBVs then 100 is used.

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](#).

Genetic evaluation 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 birth and carcass traits took place as scheduled. Extraction date for the data can be found in table 1.

Breeding values for AI beef bulls are estimated four times per year, in connection to the NAV routine genetic evaluation for dairy breeds (table 3), and EBVs are published at [NAV Beef Search](#).

News in relation to NAV genetic evaluation of beef bulls used in dairy herds

- Modified definition of the genetic base
- Fee system introduced

Genetic base

The genetic base for beef bulls evaluated based on dairy crosses is defined as relative breeding values with a mean of 100 and standard deviation of 10.

Starting February 4th, 2020, the genetic base animals for beef bulls evaluated based on dairy crosses is slightly modified so that the base constitutes of 2-5 year old crossbreds born after beef breeds which can be used in all 3 countries. It means that offspring of Belgian Blue bulls are no longer considered in the definition of the genetic base. But the principle that all beef bulls have the same EBV for all traits in all countries is kept, and the bulls rank the same as with the old definition.

In table 2 the effect of the new definition of the genetic base is shown as the EBV from the new definition minus the old definition.

Table 2. Differences new minus old definition of genetic base expressed in EBV units

EBV	Effect of new minus old definition of genetic base expressed in EBV units
NBDI long	7.7
NBDI short	2.8
Birth	-1.6
Calf survival lact 1	-2.1
Calf survival lact 2+	-1.5
Calving ease 1	-2.4
Calving ease 2+	-1.4
Growth long	8.7
Growth short	5.8
Daily carcass gain	4.6
Carcass conformation	8.2
Carcass fat score	-6.2

It means by using the new definition of genetic base then e.g. all EBVs for Carcass conformation are 8.2 units higher than with the old.

Fee for EBV of beef bulls based on beef x dairy crossbred offspring

Nordic Cattle Genetic Evaluation (NAV) conducts a genetic evaluation of AI beef bulls based on beef x dairy crossbred offspring for calving and carcass traits. A fee system is introduced 1.1.2020 for the service. It means a fee must be paid for all bulls getting publishable EBVs for the first time after 1.1.2020. Bulls already having official EBVs before 1.1.2020 does not pay a fee. To get published EBVs the following criteria should be fulfilled for each bull:

- The EBV should meet the criteria for publication
- A one-time fee of currently 1,000 euro per bull should be paid

More information about the genetic evaluation and the publication criteria can be found 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 3 the NAV and INTERBULL release dates for 2019 and 2020 are shown. The beef evaluation based on beefxdairy crossbreeds takes place along with the large NAV runs 4 times a year.

Table 3. NAV and INTERBULL release dates in 2019/20. 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 2020	7		
February 2020		4	
March 2020	3		
April 2020	7		7
May 2020		5	
June 2020	2		
July 2020	7		
August 2020		11	11
September 2020	1		
October 2020	6		
November 2020		3	
December 2020	1		1

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

You can get more information about the joint Nordic evaluation:

General about Nordic Cattle Genetic Evaluation: www.nordicebv.info

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