

News - NAV evaluation

1 February 2022

Dairy cattle

The latest NAV official 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, Norwegian Holstein, Finnish Holstein, Finnish Ayrshire and Finncattle.

Red Dairy Cattle evaluation, including data from: Danish Red, Swedish Red, Finnish Ayrshire, Finnish Holstein and Finncattle.

Jersey evaluation, including data from: Danish Jersey, Swedish Jersey, Finnish Jersey, Norwegian Jersey and French 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	13.12.2021	07.12.2021	03.12.2021
Type, milkability and temperament	13.12.2021	07.12.2021	06.12.2021
Fertility	13.12.2021	07.12.2021	04.12.2021
Udder health and other disease	13.12.2021	07.12.2021	03.12.2021
Calving ¹⁾	13.12.2021	07.12.2021	04.12.2021
Longevity	13.12.2021	07.12.2021	04.12.2021
Growth ¹⁾	13.12.2021	07.12.2021	04.12.2021
Claw health	13.12.2021	07.12.2021	03.12.2021
Youngstock survival	13.12.2021	07.12.2021	04.12.2021
Saved feed	13.12.2021	07.12.2021	06.12.2021
Pure beef cattle	12.10.2021	11.10.2021	12.10.2021

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 7 January 2022. INTERBULL information from December 2022 was included in the genomic prediction.

News in relation to NAV dairy genetic evaluation

Traditional evaluation

- No changes

Genomic prediction

- GEBVs for single claw health and fertility traits published
- GEBVs for dairyxdairy crossbreds introduced December 2021

NAV search page

Finncattle included

Genomic breeding values for single claw health and fertility traits

Genomic breeding values for single claw health and fertility traits for RDC, Holstein and Jersey are published for the first time for the following single traits:

- Claw health: Digital Dermatitis/Interdigital dermatitis, Heel Horn Erosion,
Verrucose dermatitis/Interdigital Hyperplasia, Sole Hemorrhage, Sole Ulcer,
Cork screw claw, Double sole/ White line separation
- Fertility: Interval from calving to first insemination (cows), Interval from first to last insemination (cows), Conception rate (cows), Conception rate (heifers)

GEBVs for dairyxdairy crossbreds

Joint Nordic GEBVs for dairyxdairy crossbred females were published for the first time 7th December 2021. The procedures for calculating GEBVs have not been changed since the introduction, but for a few animals it has been observed that the changes in GEBVs between two subsequent evaluations are significantly larger than expected. NAV is investigating what is causing these unexpected large changes.

Genetic base

EBVs for bulls and females are expressed on the same cow base. This genetic evaluation included cows born from 01.02.2017 to 01.02.2019 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](#).

No news has been introduced in the NAV genetic evaluation of beef bulls used in dairy herds

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. The genetic base animals for beef bulls evaluated based on dairy crosses constitutes of 2-5 year old crossbreeds born after beef breeds which can be used in all 3 countries.

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 was 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. No fee needs to be paid for bulls already having official EBVs before 1.1.2020. 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/>

Genetic evaluation for Purebred Beef animals

The latest genetic evaluation of purebred beef animals took place 2. November 2021. NAV publish EBVs for calving, growth and carcass traits based on phenotypes from purebred beef Angus, Charolais, Simmental, Hereford, and Limousine cattle. Extraction date for the data used in the November evaluation can be found in table 1. Breeding values for pure beef cattle are estimated four times per year (table 10), and EBVs are published at [NAV Beef Search](#).

NAV – frequency and timing of official runs

NAV has 2 large dairy 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 2022 are shown. The beef evaluation based on beef x dairy crossbreeds take place along with the large NAV dairy runs 4 times a year. The NAV pure beef evaluation has its own time schedule

Table 2. NAV and INTERBULL release dates in 2022. EBVs released at NAV dates in bold will be delivered to international genetic evaluation.

Month	Dairy Cattle			Beef Cattle	
	NAV Small run ¹⁾	NAV Large runs ²⁾³⁾	INTERBULL	NAV Pure Beef	INTERBEEF
January 2022	5				
February 2022		1			
March 2022	1			1	4
April 2022	5		5	12	
May 2022		3			
June 2022	7			7	
July 2022	5				

August 2022		9	9		
September 2022	6				
October 2022	4				21
November 2022		1		1	
December 2022	6		6		

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

You can get more information about the joint Nordic evaluation:

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

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