

News NAV evaluation

6 December 2022

Dairy Cattle

The latest Nordic Cattle Genetic Evaluation (NAV) official genomic prediction took place as scheduled. NAV carried out genomic prediction for Holstein, RDC, Jersey, and dairy crossbreds.

Data used in genomic prediction

Genotypes were extracted from the joint Nordic SNP data base 14 November 2022. INTERBULL information from August 2022 and national information from 1 November 2022 run were included in the genomic prediction.

Publication of GEBVs

GEBVs for bulls and females are published monthly. Nordic phenotypic information is updated 4 times a year (February, May, August and November), and is used in the reference population for genomic prediction. The GEBVs for pure breed animals are expressed on the same cow base as in the May evaluation; cows born from 01.11.2017 to 01.11.2019. The GEBVs for crossbred animals are expressed on a slightly different genetic base; females born from 01.11.2014 to 01.11.2021.

News in relation to NAV dairy genomic evaluation

Dairy - Genomic prediction

- Fertility index – female reference information was not included in monthly genomic prediction evaluation

GEBV for fertility index for RDC and Jersey

Unfortunately, females were not included in the reference population for the fertility index for RDC and Jersey in the monthly runs. The error is corrected in the December run. The females were correctly included in the monthly runs for the single fertility traits: Interval from calving to first insemination and interval from first insemination to last insemination, so the GEBV for the single traits are not affected. The error affect GEBVs for both genomic tested males and females. The correlation between GEBV for fertility index for RDC and Jersey between November and December run for AI bulls born 2019 or later were 0.91 and 0.89 respectively. It means GEBV for genomic tested males have changed in GEBV from November to December caused by the error. In table 1 the changes are shown for AI bulls born 2019 or later. The effect on genomic tested females will be of same magnitudes as for males.

Table 1 Effect on GEBV comparing December fertility index with November fertility index shown as number of AI bulls born 2019 or later with changes

Change in EBV index units	Distribution of changes, number of bulls	
	Jersey	RDC
DEC22-NOV22		
≤ -6	4	1
≥ -5 and < -3	9	13
≥ -3 and < -1	15	40
≥ -1 and ≤ 1	55	81
> 1 and ≤ 3	22	36
> 3 and ≤ 5	11	10
≥ 6	3	3

Official GEBVs for bulls used for AI in Denmark, Finland or Sweden are published at the [NAV Bull Search](#) page.

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 subsequent evaluations are significantly larger than expected. NAV is investigating what is causing these unexpected large changes.

Publication of NAV EBVs on search pages

Official NAV GEBVs for foreign AI bulls not used for AI in Denmark, Finland and Sweden are published on the [NAV homepage](#) in an excel sheet. The excel sheet also includes GEBVs for bulls used for AI in Denmark, Finland and Sweden. The excel sheet includes AI bulls that are from 10 months to 5 years old at the date of publication. The excel sheet is mainly useful for foreign AI-companies.

Interbull EBVs/GEBVs are published at the [NAV Interbull Search](#) page. The Nordic total merit index (NTM) is not calculated based on GMACE GEBVs, since Interbull regulations do not require member countries to calculate total Merit Indices based on Interbull GEBVs, and internationally it is not a common practice.

NAV – frequency and timing of official runs

NAV has 4 large dairy 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 2023 are shown. The beef evaluation based on beef x dairy crossbreds 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 2023. 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 2023	3				
February 2023		7			
March 2023	7			7	3
April 2023	4		4	18	
May 2023		2			
June 2023	6			6	
July 2023	4				
August 2023		8	8		
September 2023	5				
October 2023	3				20
November 2023		7		7	
December 2023	5		5		

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

You can get more information about the joint Nordic evaluation:

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