

Have you seen the updated phenotypic tool, showing the effect of breeding values?

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NAV has recently updated the phenotypic tool – translating breeding values to phenotypic performance. It gives you the possibility to see what you can expect from daughters of the AI-bulls that you use in your herd.

Did you know that daughters of the Holstein bull VH Clark in average will have 4 days less from calving to first insemination and 15 days less from first to last insemination compared to an average cow? Or that daughters of the Jersey bull VJ Hjort have +430 kg milk, +21 kg fat and +20 kg protein more in a lactation compared to the average production level of the breed? Or that daughters of the RDC bull VR Hohde have fat and protein percentages that are 0.30 and 0.10 percentage units higher in average than the population level? If you are interested in this type of information you can find it on the NAV Bull Search page.

Which information can I find?

It is now possible to find the expected phenotypic performance of daughters from a specific bull based on his breeding values. For the genomic Holstein bull - VH Sublime, with a current breeding value for fat of 137, the phenotypic tool shows that his progeny is expected to produce 46 kg fat more than an average Holstein cow in the NAV countries (table 1). For production traits, there are not much differences in single index effects between countries. For some other traits, such as claw disorders, there are larger differences in single index effects across countries, due to differences in frequencies. In these cases, it can be important to look at the effect of a certain bull within a specific country.

The phenotypic tool includes most traits in NTM. You can now also see the bull effects for a few traits that are not included in NTM, namely for milk contents. For the bull in table 1, you can see that daughters of VH Sublime are expected to increase the fat-% with 0.32!

Table 1. The expected phenotypic effects of production on daughters for the genomic bull VH Sublime.

Trait	Breeding value	NAV Countries		Denmark		Finland		Sweden	
		Bull effect	Average	Bull effect	Average	Bull effect	Average	Bull effect	Average
Yield	130								
Milk (305-d, kg)	115	+492.1	10273	+495.7	10335	+476.7	9962	+492.6	10319
Fat (305-d, kg)	137	+46.2	412	+44.4	412	+51.8	406	+47.5	417
Protein (305-d, kg)	122	+22.0	347	+21.5	349	+23.0	332	+22.7	355
Breeding values not in NTM									
Fat-% (average in 305-d)	120	+0.32	4.0	+0.30	4.0	+0.41	4.1	+0.31	4.1
Protein-% (average in 305-d)	110	+0.07	3.4	+0.07	3.4	+0.10	3.3	+0.07	3.4

Fact box: Where do I find the tool?

At the NAV homepage, you can find the phenotypic effects on a bull by:

1. Go to the website <http://www.nordicebv.info>

2. Click on

NAV Bull Search

3. Decide the criteria (breed, progeny tested, etc.) you will search for and then click on

Search

4. Click on the bull of interest

5. To see the phenotypic effect of a certain bull by clicking on

Show phenotypic values

6. To see the phenotypic effects for traits (single breeding values) included in a specific sub-index such as yield, see the example presented below

Trait	Breeding value	NAV Countries Bull effect	Average
Yield	120		
Growth	101		
Fertility	94		
Birth	96		
Calving	106		
Udder health (%)	105	-0.91	7.4

Trait	Breeding value	NAV Countries Bull effect	Average
Yield	120		
Milk (305-d, kg)	107	+244.7	9091
Fat (305-d, kg)	113	+17.6	400
Protein (305-d, kg)	120	+21.2	319
Breeding values not in NTM			
Growth	101		
Fertility	94		
Birth	96		
Calving	106		
Udder health (%)	105	-0.91	7.4

7. If you wish to see the effect for the individual NAV countries check the boxes off the countries you wish to see, otherwise an average across the NAV countries is shown.

? Show effect in Denmark Finland Sweden

Experience from practice – how do you use this tool?

Lotta Gunhamn – breeding advisor at Växa

“To show farmers that it is sometimes relevant to use a bull with 90 in breeding value for a particular trait – the effect on the daughters is normally not extreme. Furthermore, it is an excellent tool to compare bulls for traits like fat and protein content in milk”

Suvi Johansson – export manager VikingGenetics

“We need to “open” our standardized indices to foreign farmers – it is especially important for traits that are new in many countries – like health”. The best way to show the values from real life is through this phenotypic tool, and it is so great now to have the phenotypical values for fat and protein content”

Fact box: Good to know/FAQ

Genomic bulls: Bulls with only genomic breeding values have currently no breeding values for some single traits included in indices in NTM – for example for the fertility index, where genomic tested bulls don't have breeding values for interval traits and number of inseminations. In these cases, the index is used to predict the effect on single traits.

Cows in average: The cows that are used to calculate the average values for single traits, are the same cows that makes up the base group in the genetic evaluation. On average,

they have a breeding value of 100 (and average NTM of 0). For most traits, the base group consists of cows born 3-5 years ago.

Weighting of lactations: The effects of breeding values are for most traits (yield, fertility, etc.) a combination of the effects in the first three lactations.

The reason for country differences of bull effects? The differences in bull effects across countries for some traits are related to the phenotypic levels in the different countries. There are differences in production level and disease frequency between the countries, which results in differences in the expected effect of the breeding values.

Remaining traits: Currently almost all traits in NTM are included in the phenotypic tool. Bull effects of birth, calving and milkability are currently not available but are expected to be so in early 2019.