

Overview of phenotypic values – BeefxDairy evaluation

Tables 1 and 2 contain current phenotypic averages and values per one breeding value unit (+1 EBV-unit) for carcass and calving traits included in NAV's beefxdairy evaluation

A bull's effect on the offspring for a single trait can be calculated as:

*Bull EBV deviation from mean * value for 1 EBV unit*

A bull's average performance in the offspring for a single trait can be calculated as:

*Bull EBV deviation from mean * value for 1 EBV unit + average (within country and gender)*

Carcass traits

In Denmark, a short rearing period (<550 days at slaughter) is generally applied and values for long period is therefore not available. In Sweden and Finland, a long rearing period (>550 days at slaughter) is generally applied, but values for both short and long rearing period is available.

Table 1. Value of 1 index unit and average for carcass traits depending on country, gender, and rearing period.

Carcass traits									
		Carcass daily gain, short (kg/day)		Carcass daily gain, long (kg/day)		Carcass conformation score (1 – 15)		Carcass fat score (1 – 5)	
Gender	Country	Average	Value/+1 EBV unit	Average	Value/+1 EBV unit	Average	Value/+1 EBV unit	Average	Value/+1 EBV unit
Female	Sweden	0.474	0.0017	0.407	0.0010	6.4	0.029	3.0	0.010
Female	Denmark	0.569	0.0015			6.9	0.031	2.9	0.009
Female	Finland	0.486	0.0014	0.443	0.0013	6.4	0.031	2.8	0.015
Male	Sweden	0.645	0.0014	0.587	0.0014	6.7	0.030	2.5	0.010
Male	Denmark	0.677	0.0014			7.5	0.039	2.4	0.010
Male	Finland	0.656	0.0015	0.633	0.0013	7.9	0.040	2.4	0.013

Example for daily gain – effect in Danish female raised in short rearing period:

Bull with EBV for carcass daily gain of 110: $(110 - 100) * 0.0015 = 0.015$ kg/day = 15 g/day. That is, female crossbred offspring is expected to grow 15 g/day faster than female crossbred offspring from a bull with 100 in EBV.

For the above bull, the expected performance is 0.569 kg/day + 0.015 kg/day = 0.584 kg/day = 584 g/day

Calving traits

Calving ease is registered on a scale from 1-5 and it is therefore difficult to express average and effect of 1 index unit in an understandable way. Hence a bull with 110 in calving ease will give less difficult calving's with/without help and more calving's without help. To make interpretation easier it is expressed as increase in share of easy calving's without help in table 3.

Table 2. Value of 1 index unit and average for calving traits depending on country and lactation of dam.

Calving traits						
Country	Calf survival, 1 st lactation (0 – 1)		Calf survival, later lactations (0 – 1)		Calving ease, 1 st lactation (point)	Calving ease, later lactations (point)
	Average	Value/+1 EBV unit	Average	Value/+1 EBV unit	Value/+1 EBV unit	Value/+1 EBV unit
Denmark	0.913	0.00297	0.963	0.0010	0.0107	0.0052
Finland	0.924	0.00295	0.956	0.0012	0.0104	0.0058
Sweden	0.953	0.00236	0.969	0.0010	0.0082	0.0045

Example for calf survival – effect in Finland for calf’s born by cows in 2nd and later lactations:

Bull with EBV for calf survival of 110: $(110 - 100) * 0.0012 = 0,012$ liveborn calves = 1.2% more liveborn calves, compared to bull with EBV of 100.

For the above bull, the expected total performance is 95,6% liveborn calves + 1.2% liveborn calves = 96.8% liveborn calves

Table 3. Expected percentage of easy calving without help in later lactations when a bull with EBV 90, 100 or 110 is used

	Bull EBV = 90	Bull EBV = 100	Bull EBV = 110
Denmark	81.8	85.5	89.3
Finland	77.7	81.8	86.1
Sweden	88.2	91.2	94.4