Breeding values for beef breed sires used for crossbreeding with dairy cows

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The aim

- Develop an overall economic index that helps dairy farmers to select beef sires that produce the economically best crossbred calves
  - Include economically important traits
- All beef bulls are comparable across breeds
  - On the same scale

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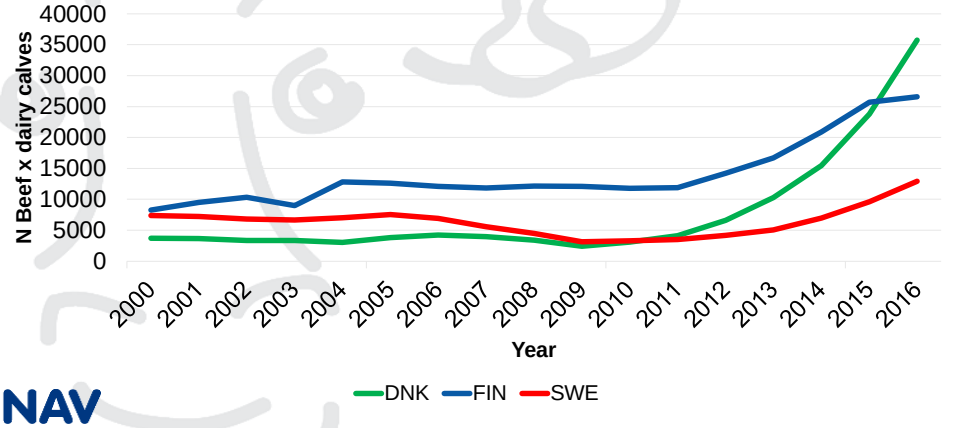
Why are we developing a Nordic beef x dairy genetic evaluation?



Which traits are included?

- **Calving traits**
  - 3 traits
    - Stillbirth
    - Calving ease
    - Calf size (only DK)
  - 2 trait groups
    - First parity
    - Later parities
- **Carcass traits**
  - Average daily gain
    - Short period
    - Long period
  - EUROP form score

Which calves are included?

- Only crossbred calves born by **purebred dairy dams** (HOL, JER and RDC),
- The dams have to be inseminated with a **purebred AI bull** from a beef breed (also INRA)

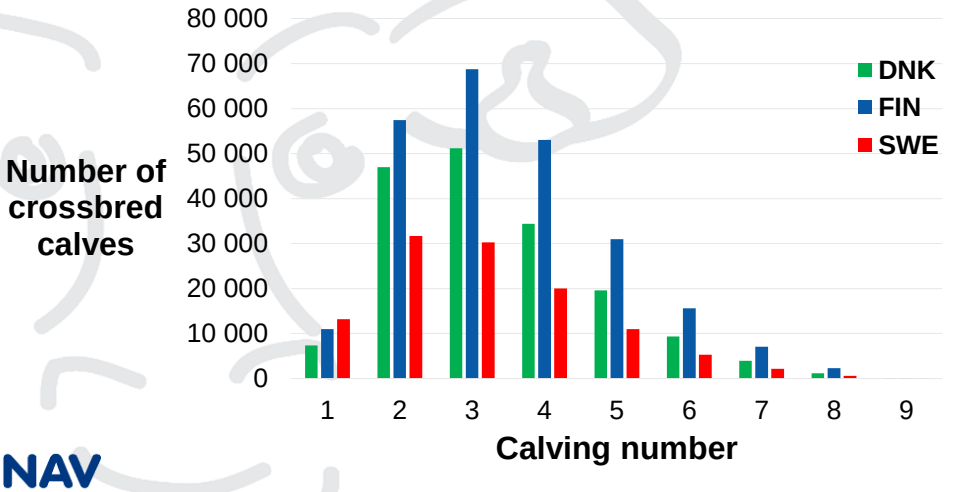


BASIC STATISTICS

Average herd size

Herdtype	DNK	FIN	SWE
Beef x dairy	236	47	100
Only dairy	153	27	71

Parity



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Dam breed

The number of crossbred calves for each dam breed by country

Dam breed	DNK		FIN		SWE	
	N	%	N	%	N	%
HOL	125,882	72.3%	69,655	28.3%	49,836	43.6%
JER	32,105	18.4%	241	0.1%	415	0.4%
RDC	16,112	9.3%	176,456	71.6%	63,981	56.0%
Total	**174,098**		**246,352**		**114,232**	

Sire breed

The number of crossbred calves for each sire breed by country

Sire breed	DNK	FIN	SWE
	%	%	%
AAN	1.9	16.9	11.3
BAQ	3.2	22.8	2.2
BBL	66.9	-	-
BSM	6.6	9.2	27.1
CHA	3.6	9.2	26.4
HER	0.6	4.2	18.4
HLA	0.0	0.1	0.2
INR	4.3	-	-
LIM	12.7	37.7	14.3

Different sire breeds are used in the same herd

Cross table of common herd years by sire breed for parities >1

Sire breed	BAQ	BBL	BSM	CHA	HER	LIM
AAN	4673	162	3393	2967	2583	8446
BAQ		387	3589	3602	1423	8996
BBL			623	444	55	1302
BSM				5028	2679	7936
CHA					2643	7414
HER						3852
HLA						64

CONCLUSION

- An increasing amount of cross breed calves are born in all countries
- All sire breeds are used for all dam breeds
- Different sire breeds are used within the same herd x year

Solid basis for calculation of EBV's across beef breeds

Challenges to overcome

Mainly in the early data (calves born before 2012)

- Few beef x dairy calves
- Many herds only use one sire within a year
- Majority of dams only have one beef x dairy calf

FUTURE PERSPECTIVES

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What's next?

- The models will be developed for
  - Calving traits
  - Carcass traits
- Breeding values will be published for all traits

Before summer 2018

Future possibilities

- Overall economic index for beef x dairy calves
- Health traits
- Willingness to drink
- Young stock survival
- Impact on the dairy cow

Thank you for your attention!

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