



# Association of genomic and parental breeding values with cow performance in Nordic dairy cattle

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## AIM

Compare genomically enhanced breeding values (GEBV) and parent average breeding values (PA) for heifers regarding their ability to predict the cow's future performance.

## CONCLUSION

Genomically enhanced breeding values predicted cow performance significantly better than parent average breeding values for the vast majority of the analyzed traits.

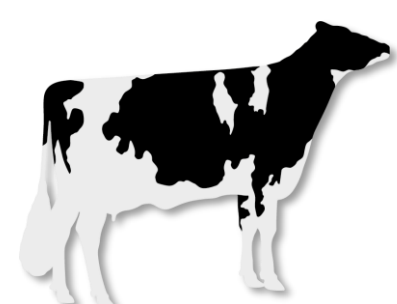
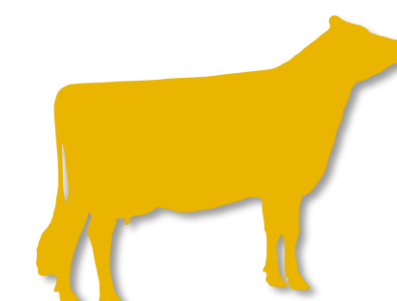
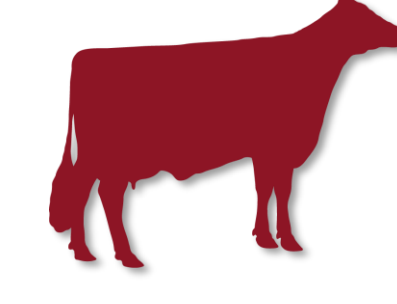
## BACKGROUND

- Genotyping females in the Nordic countries started on a large scale in 2012. Since the start, over 250,000 females have been genotyped.
- Validation of GEBV and illustrating the relationship between genomic prediction and the future phenotype is key to increasing confidence in the genomic technology among farmers.

## METHODS

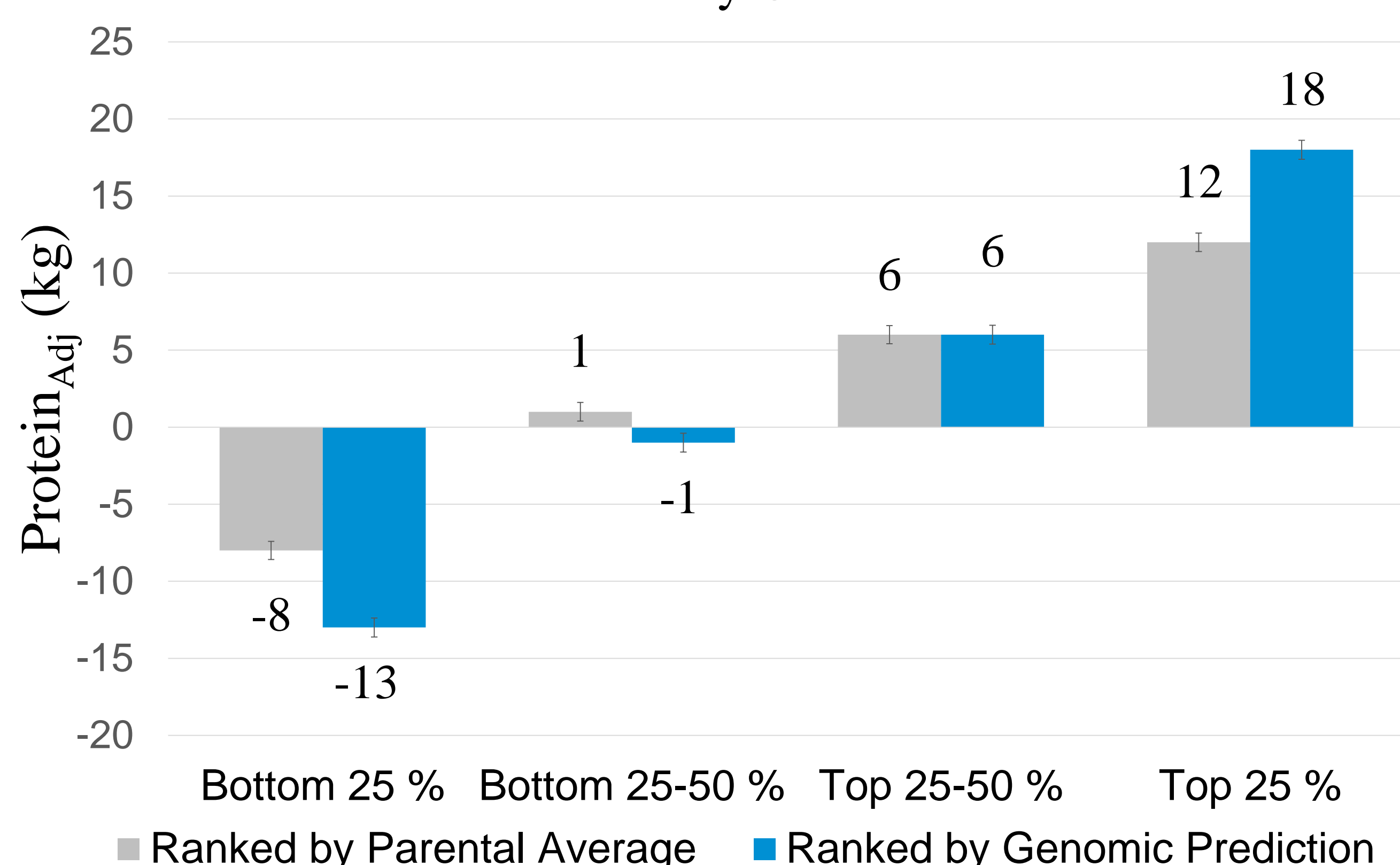
- Data were collected from the Swedish, Danish and Finnish milk recording schemes.
- Production, conformation, fertility and other functional traits, adjusted for systematic environmental effects, were used as measures of cow performance.
- GEBV and PA were from the Nordic Cattle Genetic Evaluation.

## RESULTS

	Cow Performance	Breeding Value	Correlation with GEBV*	Correlation with PA*
 <b>Holstein</b>	Protein <sub>Adj</sub>	Protein	0.36	0.25
	SCS <sub>Adj</sub>	Mastitis	-0.21	-0.13
	IFL <sub>Adj</sub>	Fertility	-0.11	-0.07
 <b>Jersey</b>	Protein <sub>Adj</sub>	Protein	0.40	0.24
	SCS <sub>Adj</sub>	Mastitis	-0.18	-0.11
	IFL <sub>Adj</sub>	Fertility	-0.08	-0.04
 <b>RDC</b>	Protein <sub>Adj</sub>	Protein	0.31	0.21
	SCS <sub>Adj</sub>	Mastitis	-0.16	-0.10
	IFL <sub>Adj</sub>	Fertility	-0.09	-0.05

\*Negative correlations are desirable for mastitis and fertility

## Protein Index, Protein<sub>Adj</sub> Red Dairy Cattle



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