Predictor traits improve accuracy of genomic breeding values for scarcely recorded traits

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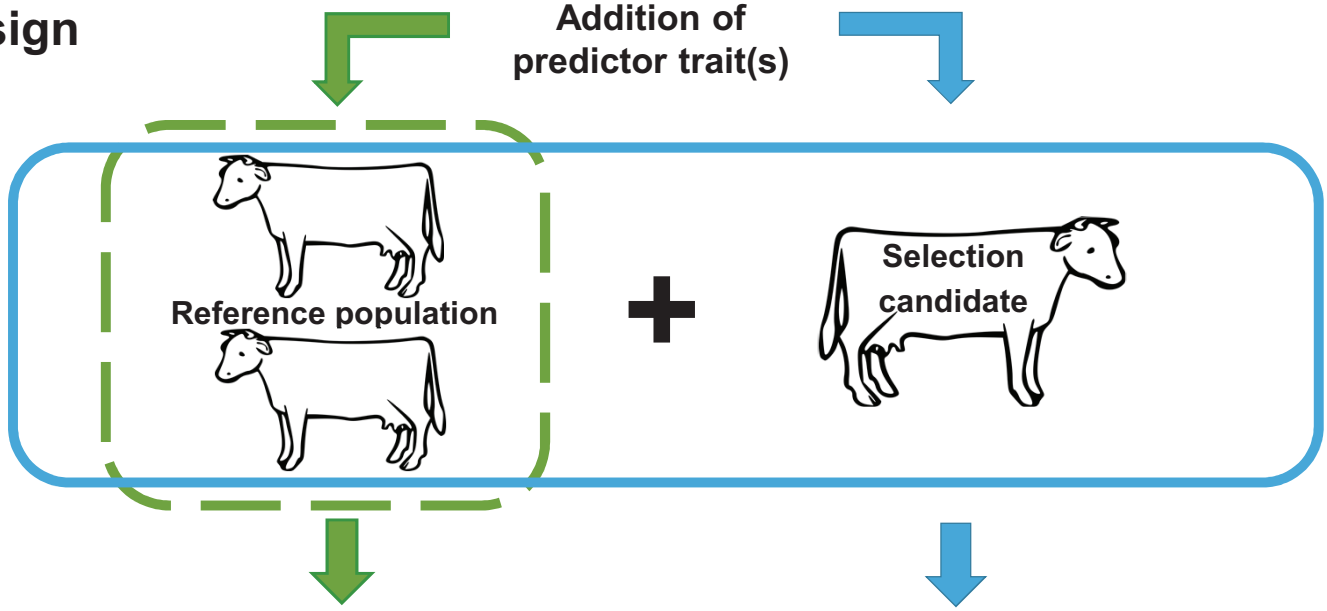
Design



Conclusion Unaffected Increased

Objective

Study the effect of using **predictor traits**, recorded on **reference population** or also on **selection candidates**, on accuracy of direct genomic values (DGV) of dry matter intake based on a small cow reference population.

Data

From:

Genotypes: 50k SNP

Phenotypes:

- Dry matter intake (**DMI**; n=869) — Target trait
- Fat protein corrected milk (**FPCM**; n=1,520) — Predictors
- Live weight (**LW**; n=1,309) — Predictors

Heritabilities, genetic and phenotypic correlations

	DMI	FPCM	LW
DMI	**0.44**	0.45	0.45
FPCM	0.24	**0.31**	0.18
LW	0.62	0.12	**0.41**

Scenarios & Results

Reliability of DMI with different traits recorded for reference and evaluated populations

Traits recorded on reference population	Traits recorded on selection candidates			
	NONE	FPCM	LW	FPCM+LW
DMI	0.11			
DMI+FPCM	0.11	0.25		
DMI+LW	0.10		0.32	
DMI+FPCM+LW	0.11	0.25	0.32	0.40

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