

Updating the Evaluation for Weaning Weight in Swiss Beef Cattle

Swiss Animal Breeding Technology Plattform

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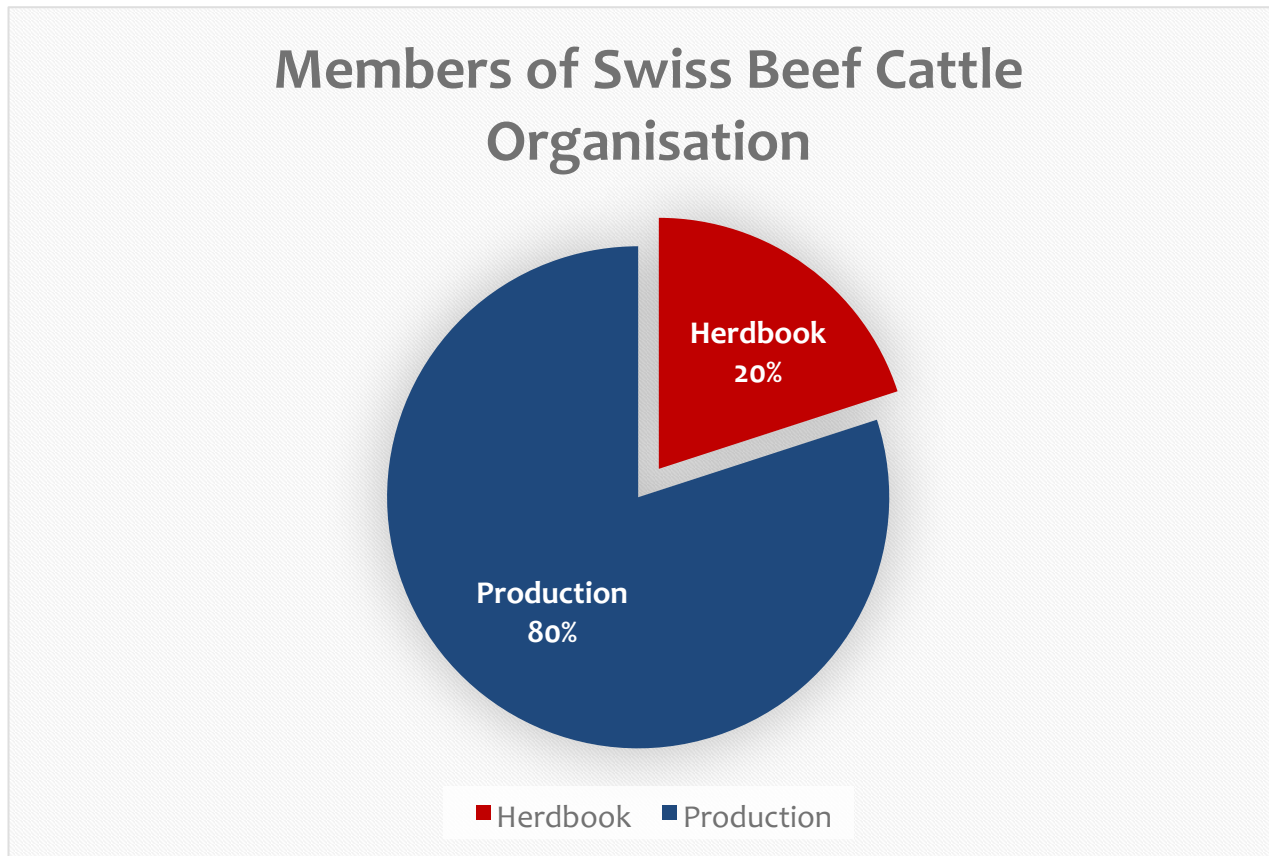
Background

- **Since 1998: Genetic Evaluation for**
 - > Weaning weight direct and maternal
 - > Angus, Aubrac, Original Braunvieh, Charolais, Limousin, Simmental
- **Selection tool for rearing beef cattle**
 - > growth (Weaning weight direct)
 - > milk yield (Weaning weight maternal)

Trait definitions and data collection

- **Definition:**
Weighing between
 $90 \leq x \leq 320$ age in days
- **Trait recording:**
 - > beef cattle expert
 - > spring and autumn
 - > only beef breeders (herdbook studs)

Herdbook situation



The question is ...



Can we use the carcass weight of
Natura-Veal or/and Natura-Beef
as auxiliary trait?

Reasons

- Calves are weaned and directly culled
 - Natura-Veal: 5 months
 - Natura-Beef: 10 months
- Use available slaughter data
- Get more information for weaning weight maternal

Structure of the Data

	Natura-Veal Carcass Weight	Natura-Beef Carcass Weight	Weaning Weight
No. Of Raw Data Records	40'000	595'000	250'000
Population	crossbred	crossbred	purebred
Growth System	Different growth system	Similar growth system	
Particularity	Animals have either carcass or weaning weight		
Inclusion of Data	✗	✓	✓

Evaluation model for weaning traits

	With Natura-Beef Carcass Weight	Without Natura-Beef Carcass Weight
TRAITS	birth weight weaning weight (direct and maternal) Natura-Beef carcass weight	birth weight weaning weight (direct and maternal)
MODEL	3-trait multivariate BLUP animal model, multi-breed evaluation	2-trait multivariate BLUP animal model, multi-breed evaluation
FIXED EFFECTS	sex abattoir year*month alp heterosis recombination	sex abattoir year*month alp
RANDOM EFFECTS	herd*year permanent environment animal dam	herd*year permanent environment animal dam
COVARIATE	age at weaning (days) age at weaning (days) ² age at calving (days) age at calving (days) ²	age at weaning (days) age at weaning (days) ² age at calving (days) age at calving (days) ²
GENETIC GROUPS	breed, birth year and selection path	breed, birth year and selection path

Heritabilities and Genetic correlations

✓ Without Natura-Beef Carcass Weight

	BW	WWD	WWM
Birth weight BW	0.33	0.43	0.12
Weaning Weight Direct WWD		0.31	-0.25
Weaning Weight Maternal WWM			0.08

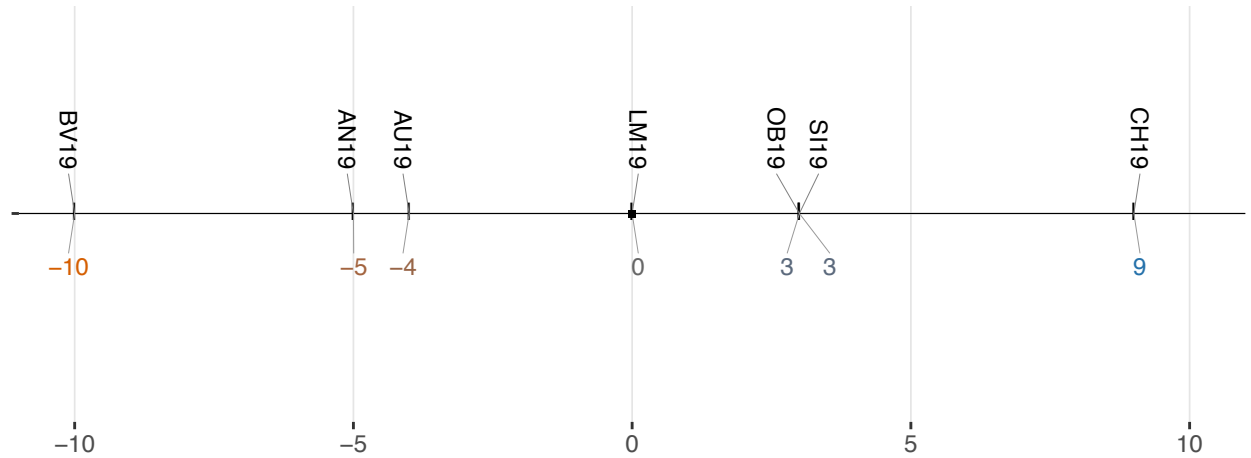
✗ With Natura-Beef Carcass Weight

	BW	WWD	CW	WWM
Birth weight BW	0.24	0.44	0.71*	-0.04*
Weaning Weight Direct WWD		0.22	0.49*	-0.10*
Carcass Weight CW			0.40	0.38*
Weaning Weight Maternal WWM				0.05

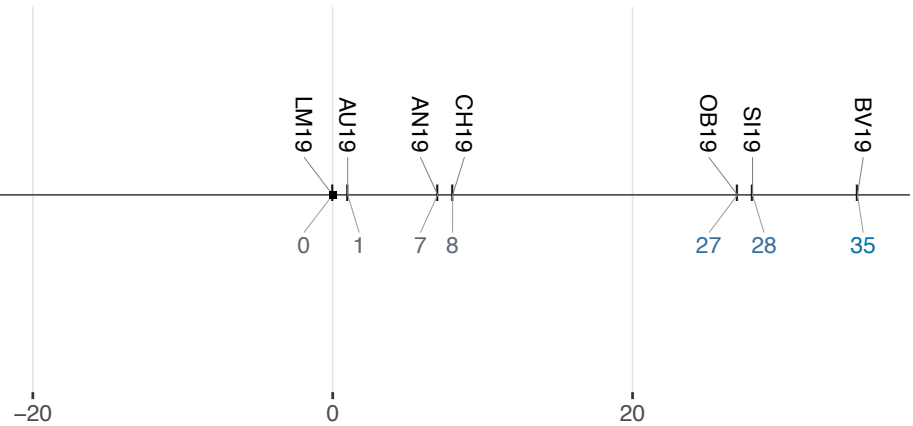
*Standard error > 0.05

Breed constants

Weaning Weight Direct

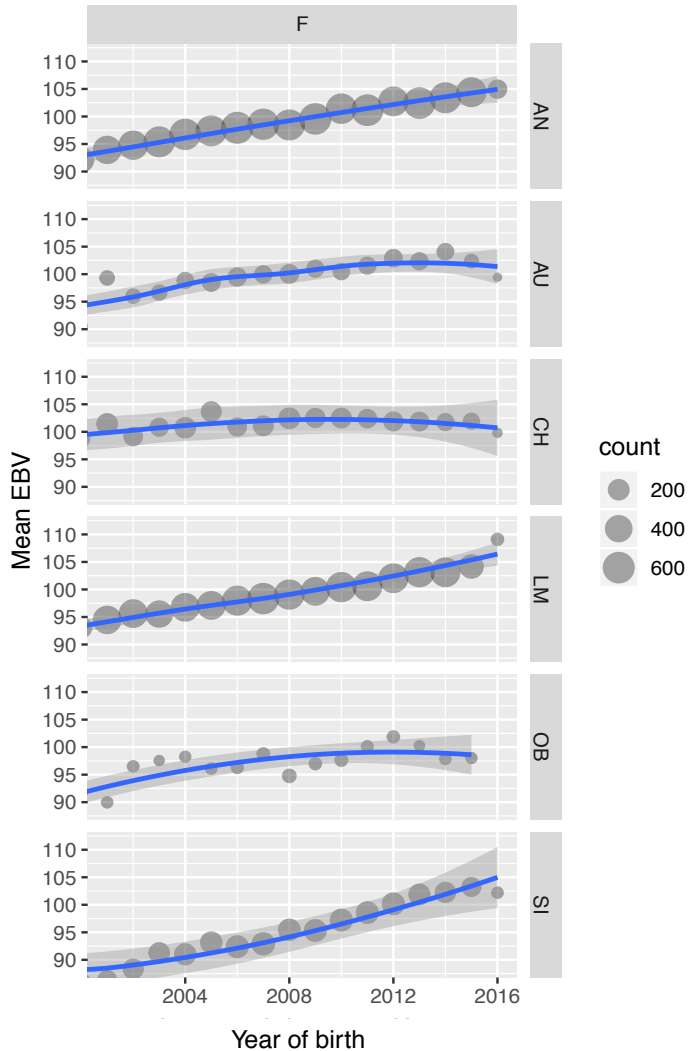


Weaning Weight Maternal

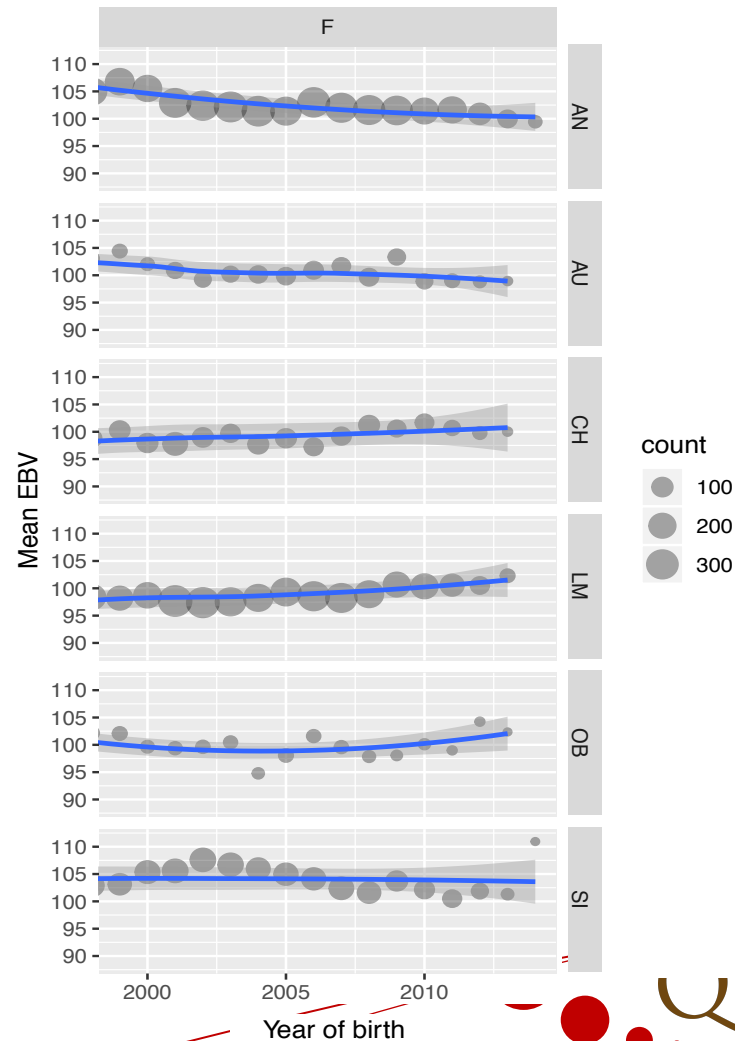


Genetic Trends

Weaning Weight Direct



Weaning Weight Maternal



Interbeef

- Routine evaluation
 - Weaning weight direct and maternal
 - Charolais, Limousin, Simmental
 - IRL, CZE, DFS, FRA, DEU, CHE, ZAF, AUS
 - Raw phenotype:
Weaning weight adjusted for 205 days
- Test running

Take home message

- Use of new genetic parameters in July 2019
- Obviously carcass weight of Natura-Beef as auxiliary trait does not help
- Trait definition and recording should be improved
- Looking to publish weaning Interbeef EBVs