

Genetic analysis of veal traits in Austrian dual purpose cattle

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1. INTRODUCTION

- veal production important for some breeds in Austria (e.g. Wiener Schnitzel)
- so far only data from slaughtered fattening bulls used in joint German-Austrian genetic evaluation

2. OBJECTIVES

- estimate genetic parameters for veal traits for Fleckvieh (Simmental), Braunvieh (Brown Swiss) and Pinzgauer
- implement genetic evaluation for veal traits in Pinzgauer dual purpose cattle in Austria

3. DATA

- carcass weight (CW), EUROP carcass conformation score (CCS) and fat score from Austrian slaughter houses
- analyzed traits: net daily gain (NDG) and CCS
- age: 30 to 200 days
- two different data sets per breed: only purebreds (<25% foreign genes) and including crossings with beef breeds
- 2,803 to 11,466 records per data set

Data characteristics of purebred data sets:

Traits	Fleckvieh	Braunvieh	Pinzgauer
N	5,001	9,594	2,803
NDG (g)	877	843	883
CCS (E=5, P=1)	3.31	2.46	2.58

4. MODEL

- multivariate linear AM
- effects: herd*year, slaughterhouse*year*season, sex, birth type, age (L+Q), calf
- parameter estimation: VCE6 (Groeneveld et al., 2008)
- genetic evaluation: MiX99 (Lidauer et al., 2008)
- veal index: $0.5 * \text{NDG} + 0.5 * \text{CCS}$

5. RESULTS

5.1 GENETIC PARAMETERS

Heritabilities and genetic correlations:

Breed		h^2 NDG	h^2 CCS	r_g
Fleckvieh	pure	0.13	0.20	0.67
	all	0.26	0.68	0.66
Braunvieh	pure	0.19	0.29	0.46
	all	0.28	0.65	0.67
Pinzgauer	pure	0.24	0.24	0.06
	all	0.30	0.52	0.40

5.2 ESTIMATED BREEDING VALUES

EBV-correlations with official beef EBVs based on fattening bulls:

Breed	Veal/Beef index	NDG	CCS
Fleckvieh	0.40	0.29	0.48
Braunvieh	0.29	0.21	0.35
Pinzgauer	0.22	0.07	0.34

6. SUMMARY

- purebred data: moderate heritabilities for NDG (0.13-0.24) and CCS (0.20-0.29)
- crossbred data: higher heritabilities for NDG (0.26-0.30) and very high for CCS (0.52-0.68)
- higher reliabilities for EBVs based on veal data than official beef EBVs based on bull data for Pinzgauer
- 'veal-EBVs' replace 'bull-EBVs' for Pinzgauer since August 2009, 14% weight in total merit index
- other breeds will follow

