The impact of direct-maternal r_g on breeding values of beef cattle international evaluations

R. **Bonifazi**, J. Vandenplas, J. ten Napel,

A. Cromie, R.F. Veerkamp, M.P.L. Calus

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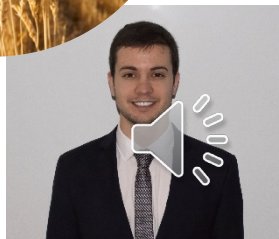

Roel Veerkamp

Mario Calus

Jeremie Vanderplas

Jan ten Napel

Ross Evans

Thierry Pabiou

Andrew Cromie

Toine Roozen

Alexis Michenet

UNIVERSITÀ
DEGLI STUDI
DI PADOVA

Martino Cassandro

UNIVERSITÀ
DEGLI STUDI
DI PERUGIA

Emiliano Lasagna

International genetic evaluations for beef cattle

- Comparison of animals' genetic values: **International** Estimated Breeding Values
- Multi-Trait **Animal Model**: countries as correlated traits
- Across-countries **genetic correlations** (r_g)
- Traits with maternal effects → direct-maternal r_g (r_{dm})
    - **within-country** r_{dm}
    - **between-country** r_{dm} → assumed to be 0

AIM: What is the **impact on re-ranking of** animals' international **EBV** due to **ignoring** (set to 0) **between-country** $\boldsymbol{r_{dm}}$?

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Scenarios tested and group of animals evaluated

r_g	Scenarios	
	REF	CUR
Direct and maternal between-country	√	√
r_{dm} within-country	√	√
r_{dm} between-country	√	X

√ = fitted
X = not-fitted (set to 0)

Rank correlations:

1. All animals
2. Groups by individual reliability
3. Publishable sires and top 100

Data

- Limousin
- Weaning weight (> 3 million)
- 8 populations

Rank correlations (ρ)	Re-ranking
$0.990 < \rho < 1.000$	None
$0.980 < \rho < 0.990$	Small
$\rho < 0.980$	Large

Conclusions

Ignoring between-country r_{dm}:

- **None** (direct) and **small** (maternal) EBV re-ranking
- Maternal EBV: **limited to REL ≤ 0.3**
- **No re-ranking for publishable sires**
- **Supports current procedure** when between-country r_{dm} close to 0 on average

Thanks for your attention

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renzo.bonifazi@wur.nl