

Is it worth to change from a lactational to a test-day genetic evaluation model in Latxa dairy sheep?



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Framework

- Latxa is a dairy sheep breed native from Basque Country and Navarre (Spain).
- Genetic evaluations have been made following a lactational model (LC) so far.
- **Test-day (TD) models** allow to use every TD record for each ewe directly in the analysis .
- **TD models** allow to estimate the genetic merit of a greater number of animals.

Aim

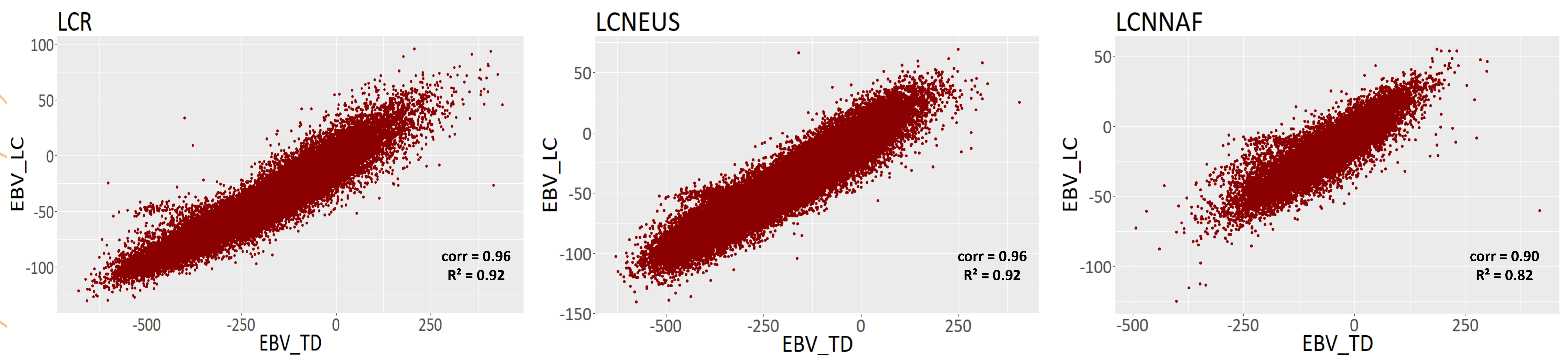
- Compare the Estimated Breeding Value (**EBV**) and its reliability(**r**) between **LC** and **TD** models for milk yield and milk composition of Latxa Cara Rubia (**LCR**), Latxa Cara Negra from Euskadi (**LCNEUS**) and from Navarre (**LCNNAF**).
- Estimate the heritability values.

Materials

	LC			TD		
	Lactations	Ewes	Rams	TD Records	Ewes	Rams
LCR	19.136	28.787	1502	255.188	33.256	1558
LCNEUS	11.944	39.766	1574	396.221	49.152	1713
LCNAF	7.199	12.291	512	58.641	14.250	543

Results

Pearson correlation between EBVs for milk yield



- EBVs for protein (%) and fat (%) are also highly correlated (>80).

Reliabilities of EBVs' estimations (mean ± sd):

	LCR		LCNEUS		LCNNAF	
	TD	LC	TD	LC	TD	LC
Milk yield	0.67±0.2	0.55±0,3	0.57±0.4	0.52±0,3	0.39±0,5	0.39±0,5
Protein (%)	0.72±0.2	0.69±0,3	0.65±0.4	0.66±0,3	0.41±0,5	0.50±0,4
Fat (%)	0.80±0.1	0.60±0,3	0.63±0.4	0.56±0,3	0.31±0,6	0.34±0,5

Heritability values

	LCR		LCNEAE		LCNNAF	
	TD	LC	TD	LC	TD	LC
Milk	0.25	0.27	0.20	0.25	0.27	0.31
Protein(%)	0.30	0.53	0.26	0.47	0.25	0.37
Fat(%)	0.24	0.32	0.16	0.24	0.14	0.22

Conclusions

- Correlation between EBVs from both models is high, and their reliability values are similar.
- Heritability and repeatability values of milk yield are similar between models, although milk quality decrease with TD .
- It is suitable to implement the **TD** model in Latxa genetic evaluations from now on.