

Impact of young ewe fertility rate on risk and genetic gain in sheep-breeding programs using genomic selection

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Table S1. Average accuracy for each trait in rams for the last 10 years of selection in maternal breeding programs (B.P.)

Mean calculated as the average accuracy across age classes for 100 replicates with s.d. given in parentheses

B.P. ^A	Traits ^B						
	BWT (kg)	WWT (kg)	PWT (kg)	PEMD (cm ²)	PFEC (eggs/gm)	YGFW (kg)	NLW
<i>No Genomic Information</i>							
R2E2	0.53 (0.09)	0.58 (0.08)	0.59 (0.08)	0.63 (0.07)	0.09 (0.13)	0.13 (0.13)	0.26 (0.14)
R1E2	0.50 (0.10)	0.55 (0.08)	0.51 (0.09)	0.46 (0.10)	0.07 (0.14)	0.13 (0.14)	0.24 (0.14)
R2E1-L	0.51 (0.10)	0.58 (0.08)	0.59 (0.08)	0.62 (0.08)	0.09 (0.15)	0.14 (0.15)	0.26 (0.14)
R2E1-M	0.51 (0.11)	0.57 (0.08)	0.58 (0.08)	0.63 (0.08)	0.10 (0.14)	0.14 (0.14)	0.28 (0.15)
R2E1-H	0.50 (0.10)	0.57 (0.08)	0.58 (0.08)	0.62 (0.08)	0.08 (0.13)	0.13 (0.14)	0.29 (0.14)
R1E1-L	0.48 (0.11)	0.54 (0.09)	0.48 (0.10)	0.46 (0.11)	0.06 (0.15)	0.11 (0.14)	0.24 (0.14)
R1E1-M	0.48 (0.10)	0.54 (0.09)	0.48 (0.10)	0.45 (0.11)	0.05 (0.16)	0.12 (0.14)	0.26 (0.15)
R1E1-H	0.47 (0.10)	0.55 (0.08)	0.49 (0.09)	0.46 (0.11)	0.05 (0.15)	0.12 (0.14)	0.26 (0.15)
<i>With Genomic Information</i>							
R2E2	0.54 (0.09)	0.63 (0.07)	0.67 (0.06)	0.72 (0.05)	0.11 (0.13)	0.14 (0.13)	0.33 (0.12)
R1E2	0.53 (0.09)	0.62 (0.07)	0.63 (0.07)	0.62 (0.07)	0.09 (0.14)	0.14 (0.13)	0.32 (0.12)
R2E1-L	0.53 (0.09)	0.64 (0.07)	0.68 (0.06)	0.70 (0.06)	0.09 (0.14)	0.16 (0.14)	0.33 (0.13)
R2E1-M	0.54 (0.10)	0.63 (0.07)	0.67 (0.07)	0.70 (0.06)	0.10 (0.13)	0.15 (0.13)	0.34 (0.12)
R2E1-H	0.53 (0.09)	0.63 (0.07)	0.68 (0.06)	0.70 (0.06)	0.10 (0.14)	0.15 (0.13)	0.34 (0.13)
R1E1-L	0.51 (0.09)	0.62 (0.07)	0.62 (0.08)	0.61 (0.08)	0.10 (0.15)	0.15 (0.14)	0.31 (0.13)
R1E1-M	0.51 (0.10)	0.62 (0.07)	0.62 (0.07)	0.62 (0.08)	0.07 (0.14)	0.15 (0.13)	0.31 (0.12)
R1E1-H	0.51 (0.10)	0.61 (0.08)	0.62 (0.08)	0.61 (0.08)	0.09 (0.13)	0.14 (0.13)	0.32 (0.13)

^ABreeding program, as defined in Table 1.

^BTraits: birth weight (BWT), weaning weight (WWT), post-weaning weight (PWT), post-weaning eye muscle depth (PEMD), post-weaning worm egg count (PFEC), yearling greasy fleece weight (YGFW), adult number of lambs weaned (NLW).

Table S2. Average accuracy for each trait in rams for the last 10 years of selection in Merino breeding programs

Mean calculated as the average accuracy across age classes for 100 replicates with s.d. given in parentheses

B.P. ^A	Traits ^B										
	YCFW (kg)	YDCV (um)	YFD (um)	YSS (Nktex)	YWT (kg)	ACFW (kg)	ADCV (um)	AFD (um)	ASS (Nktex)	AWT (kg)	NLW
<i>No Genomic Information</i>											
R2E2	0.64 (0.08)	0.69 (0.07)	0.80 (0.04)	0.45 (0.10)	0.65 (0.07)	0.48 (0.10)	0.58 (0.09)	0.67 (0.07)	0.40 (0.11)	0.54 (0.09)	0.31 (0.14)
R1E2	0.45 (0.11)	0.47 (0.11)	0.54 (0.10)	0.31 (0.13)	0.45 (0.12)	0.32 (0.13)	0.40 (0.12)	0.45 (0.11)	0.28 (0.13)	0.38 (0.13)	0.25 (0.14)
R2E1-L	0.63 (0.08)	0.69 (0.07)	0.79 (0.05)	0.45 (0.11)	0.66 (0.08)	0.46 (0.11)	0.57 (0.09)	0.66 (0.08)	0.40 (0.12)	0.54 (0.10)	0.31 (0.14)
R2E1-M	0.64 (0.08)	0.69 (0.07)	0.79 (0.05)	0.45 (0.12)	0.65 (0.07)	0.47 (0.11)	0.58 (0.09)	0.66 (0.08)	0.40 (0.12)	0.54 (0.10)	0.30 (0.14)
R2E1-H	0.63 (0.09)	0.69 (0.07)	0.79 (0.05)	0.45 (0.12)	0.66 (0.07)	0.47 (0.11)	0.57 (0.09)	0.66 (0.08)	0.39 (0.12)	0.54 (0.09)	0.31 (0.14)
R1E1-L	0.43 (0.12)	0.48 (0.12)	0.53 (0.10)	0.33 (0.14)	0.44 (0.12)	0.32 (0.14)	0.40 (0.13)	0.45 (0.12)	0.29 (0.15)	0.36 (0.13)	0.26 (0.15)
R1E1-M	0.44 (0.13)	0.47 (0.11)	0.54 (0.10)	0.31 (0.14)	0.44 (0.12)	0.33 (0.15)	0.40 (0.13)	0.45 (0.12)	0.27 (0.14)	0.36 (0.13)	0.26 (0.14)
R1E1-H	0.44 (0.12)	0.47 (0.11)	0.54 (0.10)	0.31 (0.14)	0.43 (0.12)	0.33 (0.14)	0.40 (0.13)	0.46 (0.12)	0.28 (0.14)	0.36 (0.13)	0.27 (0.14)
<i>With Genomic Selection</i>											
R2E2	0.68 (0.07)	0.69 (0.07)	0.82 (0.04)	0.46 (0.11)	0.66 (0.07)	0.62 (0.08)	0.58 (0.09)	0.73 (0.06)	0.41 (0.11)	0.55 (0.09)	0.36 (0.13)
R1E2	0.55 (0.09)	0.49 (0.10)	0.63 (0.08)	0.34 (0.13)	0.45 (0.11)	0.56 (0.09)	0.42 (0.12)	0.62 (0.09)	0.31 (0.13)	0.38 (0.13)	0.32 (0.13)
R2E1-L	0.68 (0.08)	0.69 (0.07)	0.82 (0.05)	0.47 (0.11)	0.66 (0.08)	0.61 (0.09)	0.59 (0.09)	0.73 (0.07)	0.42 (0.12)	0.55 (0.10)	0.37 (0.13)
R2E1-M	0.68 (0.07)	0.69 (0.07)	0.82 (0.04)	0.46 (0.11)	0.66 (0.07)	0.62 (0.08)	0.58 (0.09)	0.73 (0.06)	0.41 (0.12)	0.56 (0.10)	0.36 (0.13)
R2E1-H	0.68 (0.07)	0.69 (0.07)	0.81 (0.04)	0.46 (0.12)	0.66 (0.07)	0.61 (0.09)	0.59 (0.09)	0.73 (0.06)	0.40 (0.13)	0.55 (0.10)	0.36 (0.13)
R1E1-L	0.54 (0.10)	0.49 (0.11)	0.63 (0.08)	0.35 (0.13)	0.46 (0.12)	0.56 (0.09)	0.41 (0.13)	0.61 (0.09)	0.30 (0.14)	0.39 (0.12)	0.32 (0.13)
R1E1-M	0.53 (0.10)	0.49 (0.12)	0.62 (0.08)	0.34 (0.13)	0.46 (0.11)	0.56 (0.09)	0.42 (0.13)	0.60 (0.09)	0.31 (0.14)	0.39 (0.12)	0.32 (0.13)
R1E1-H	0.53 (0.10)	0.48 (0.11)	0.64 (0.08)	0.33 (0.13)	0.46 (0.11)	0.56 (0.09)	0.41 (0.12)	0.62 (0.08)	0.31 (0.14)	0.38 (0.13)	0.33 (0.14)

^ABreeding program, as defined in Table 1.^BTraits: clean fleece weight; yearling (YCFW) and adult (ACFW), fibre diameter coefficient of variance; yearling (YDCV) and adult (ADCV), fibre diameter; yearling (YFD) and adult (AFD), staple strength; yearling (YSS) and adult (ASS), body weight; yearling (YWT) and adult (AWT), adult number of lambs weaned (NLW).