

**Table S5** Estimated marginal means of inbreeding depression estimates per trait, with standard errors (SEs). Inbreeding depression estimates are expressed as percentage of the trait mean ( $b_m$ ) or as percentage of the trait standard deviation ( $b_s$ ). The number of estimates (N) and the P-value for testing the mean against zero are also shown. Only traits with at least 10 records were included in the analysis.

Trait group* Trait	N	$b_m$		P-value	N	$b_s$		P-value
		Estimate (SE)				Estimate (SE)		
REP/SUR Fertility interval	154	-0.271 (0.055)		<0.001	129	-0.678 (0.255)		0.008
REP/SUR Fertility success	93	-0.413 (0.072)		<0.001	62	-0.554 (0.375)		0.139
REP/SUR Fertility success (offspring)	19	-0.465 (0.154)		0.003	-	-		-
REP/SUR Fertility success (sire)	10	-0.293 (0.211)		0.165	-	-		-
REP/SUR Gestation length	28	0.000 (0.108)		1.000	24	0.057 (0.459)		0.902
REP/SUR Calving ease	26	0.088 (0.124)		0.481	14	1.007 (0.595)		0.091
REP/SUR Litter size	26	-0.216 (0.123)		0.020	17	-0.596 (0.711)		0.401
REP/SUR Litter size (maternal)	41	-0.186 (0.104)		0.075	20	0.848 (0.754)		0.261
REP/SUR Litter size at later stage	11	-0.512 (0.178)		0.004	-	-		-
REP/SUR Litter size at later stage (maternal)	15	-0.576 (0.158)		<0.001	-	-		-
REP/SUR Adult survival	11	-0.197 (0.211)		0.349	-	-		-
REP/SUR Offspring survival	51	-0.256 (0.093)		0.006	-	-		-
REP/SUR Offspring survival (maternal)	52	-0.153 (0.088)		0.082	14	1.522 (0.588)		0.010
REP/SUR Longevity	21	-0.938 (0.125)		<0.001	23	-1.341 (0.484)		0.006
WEI/GRO Birth weight	61	-0.173 (0.079)		0.029	32	-1.024 (0.462)		0.027
WEI/GRO Birth weight (maternal)	34	-0.034 (0.101)		0.739	15	-0.627 (0.603)		0.299
WEI/GRO Weight	191	-0.230 (0.052)		<0.001	105	-1.179 (0.292)		<0.001
WEI/GRO Weight (maternal)	61	-0.170 (0.081)		0.035	36	-0.740 (0.420)		0.078
WEI/GRO Growth	45	-0.196 (0.091)		0.032	27	-0.133 (0.460)		0.773
WEI/GRO Growth (maternal)	17	0.170 (0.143)		0.234	-	-		-
CONF Body dimensions	226	-0.197 (0.062)		0.004	212	-0.737 (0.269)		0.006
CONF Body dimensions (maternal)	20	-0.061 (0.143)		0.669	12	0.356 (0.638)		0.577
CONF Bone quality	19	-0.246 (0.134)		0.067	18	-0.315 (0.542)		0.561
CONF Conformation dairy	84	-0.117 (0.075)		0.121	90	-0.278 (0.315)		0.378
CONF Conformation other	52	-0.112 (0.088)		0.203	52	-0.536 (0.360)		0.137
CONF Scrotal circumference	17	-0.172 (0.140)		0.217	11	-1.200 (0.669)		0.073
PROD Milk yield	69	-0.547 (0.081)		<0.001	52	-1.587 (0.377)		<0.001
PROD Fat yield	39	-0.507 (0.100)		<0.001	32	-1.903 (0.435)		<0.001
PROD Protein yield	37	-0.452 (0.103)		<0.001	30	-1.938 (0.446)		<0.001
PROD Fat%	21	-0.099 (0.130)		0.448	18	0.239 (0.553)		0.665
PROD Protein%	20	-0.070 (0.134)		0.602	17	1.057 (0.570)		0.064
PROD Milk other	12	-0.155 (0.163)		0.340	-	-		-
PROD Egg number	17	-0.447 (0.192)		0.020	10	-1.889 (1.593)		0.236
PROD Egg weight	16	-0.290 (0.167)		0.083	-	-		-
PROD Carcass/meat quality	21	-0.054 (0.128)		0.675	13	0.384 (0.636)		0.546
PROD Fleece production	10	-0.251 (0.211)		0.235	-	-		-
PROD Litter weight (maternal)	11	-0.203 (0.184)		0.271	-	-		-
PROD Litter weight at weaning	10	-0.878 (0.183)		<0.001	-	-		-
PROD Litter weight at weaning (maternal)	11	0.144 (0.172)		0.403	-	-		-
PROD Production other	12	-0.803 (0.422)		0.422	-	-		-
HEA SCS	22	-0.609 (0.129)		<0.001	21	-0.501 (0.522)		0.337
OTH Behavior	14	-0.005 (0.150)		0.972	13	0.412 (0.614)		0.503
OTH Horse competition performance	-	-		-	10	-0.602 (0.848)		0.478

\*REP/SUR: reproduction/survival, WEI/GRO: weight/growth, CONF: conformation, PROD: production, HEA: health, OTH: other