

Table S1 Summary of selection measures BLresp and BLsur. ρ is the genetic correlation between traits, β is the slope of regression for BLmat against BLeme, σ^2 is the genetic variance of BLresp and Acc is the prediction accuracy of EBLUPs.

Dataset	Bivariate BLresp								Univariate BLsur	
	Additive				Non-additive				Acc _a	Acc _r
	ρ_a	β_a	σ_a^2	Acc _a	ρ_r	β_r	σ_r^2	Acc _r		
HS21	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	0.69	0.77	75.96	0.70	0.53	0.69
YK21	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	0.95	0.75	16.40	0.50	0.56	0.40
WN22	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	1.00	<i>b</i>	0.00	<i>b</i>	0.75	<i>c</i>
HS22	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	0.79	0.57	103.77	0.65	0.74	0.58
RS22	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	0.81	0.73	0.27	0.66	0.57	0.53
YK22	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	0.91	0.77	32.81	0.88	0.17	0.81
WN23	0.79	1.53	0.45	0.38	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	0.50	<i>c</i>
HS23	1.00	<i>b</i>	0.00	<i>b</i>	0.35	0.37	0.25	0.58	0.59	0.46
RS23	0.77	0.88	65.45	0.49	0.79	0.67	17.73	0.48	0.49	0.56
YK23	0.63	1.03	187.74	0.55	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	0.54	<i>c</i>

^aBLeme and/or BLmat variance component = 0, hence no correlation structure fitted

^bgenetic correlation is unity, hence no deviations around regression line

^cgenetic variance component was on the boundary