

**Table 1S.** Coefficients (r) and significance level for the correlations between the determined traits [BpP: branches per plant, PH: plant height, PpP: pods per plant, SpP: seeds per pod, HSW: 100-seed weight, SY: seed yield per plant, HI: harvest index,  $L^*$ ,  $a^*$ ,  $b^*$ : testa color parameters, Prot: seed protein concentration, SPC: seed protein content, TPhe: total phenolic compounds, TTan: total tannins, BD: percentage of bruchid holes, PD: percentage of parasitoid holes, and BI: bruchid-infestation level (BI = BD + PD)] in 10 *Vicia faba* accessions tested across two years (n = 10).

	PH	PpP	SpP	HSW	SY	HI	$L^*$	$a^*$	$b^*$	Prot	SPC	TPhe	TTan	BD	PD	BI
<b>BpP</b>	ns <sup>a</sup>	0.91**	-0.69* <sup>b</sup>	-0.81** <sup>c</sup>	ns	-0.71*	-0.82**	-0.69*	-0.82**	ns	-0.81**	ns	ns	-0.73*	ns	-0.76**
<b>PH</b>		ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
<b>PpP</b>			-0.81**	-0.96***	-0.74*	ns	-0.92***	-0.74*	-0.93***	0.64*	-0.96***	ns	ns	-0.87**	-0.73*	-0.91***
<b>SpP</b>				0.80**	0.73*	ns	0.80**	ns	0.79**	ns	0.81**	ns	ns	0.82**	0.74*	0.88***
<b>HSW</b>					0.78**	ns	0.91*** <sup>d</sup>	0.75*	0.93***	ns	ns	ns	ns	0.87**	0.76*	0.92***
<b>SY</b>						ns	ns	ns	ns	ns	0.79**	ns	ns	ns	ns	0.67*
<b>HI</b>							ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
<b><math>L^*</math></b>								ns	1.00***	-0.64*	0.90***	ns	ns	0.86**	0.74*	0.91***
<b><math>a^*</math></b>									0.72*	ns	0.72*	ns	ns	ns	ns	ns
<b><math>b^*</math></b>										-0.63*	0.91***	ns	ns	0.87**	0.74*	0.92***
<b>Prot</b>											§	ns	ns	ns	ns	ns
<b>SPC</b>												ns	ns	0.86**	0.80**	0.94***
<b>TPhe</b>													§	ns	ns	ns
<b>TTan</b>														ns	ns	ns
<b>BD</b>															ns	§
<b>PD</b>																§

<sup>a</sup> not significant

<sup>b</sup> significant at 0.05 level

<sup>c</sup> significant at 0.01 level

<sup>d</sup> significant at 0.001 level

§ not estimated to avoid spurious self-correlation