

**Table S1.** Nomenclature of Weather parameters

Nomenclature	
Tmax_W	maximum temperature in winter
Tmin_W	minimum temperature in winter
Rain_W	rainfall in winter
nFrost_W	number of days per month where the minimum temperature dropped below 0 °C in winter,
Tavg_Sp	average temperature in spring
Tmax_Sp	maximum temperature in spring
Tmin_Sp	minimum temperature in spring,
Rain_Sp	rainfall in spring
nFrost_Sp	number of days per month where the minimum temperature dropped below 0 °C in spring

**Table S2.** Correlations coefficients among yield, yield components (THS, AGB, and HI), and seed quality (protein concentration, fat, starch, protein yield, and ashes) variables for 13 lentil accessions during the 2017 growing season.

Variables	Starch	Ashes	Protein concentration	Fat	Protein yield	Yield	AGB	THS	HI
Starch	<b>1</b>								
Ashes	-0.003	<b>1</b>							
Protein concentration	-0.073	-0.347	<b>1</b>						
Fat	-0.198	-0.454	0.396	<b>1</b>					
Protein yield	0.245	0.126	-0.223	0.000	<b>1</b>				
Yield	-0.179	0.093	-0.231	0.080	-0.022	<b>1</b>			
AGB	-0.385	-0.038	0.052	0.333	<b>0.566</b>	0.412	<b>1</b>		
THS	-0.129	0.253	0.369	0.107	0.143	0.418	0.390	<b>1</b>	
HI	0.083	0.016	-0.350	0.017	-0.236	<b>0.791</b>	-0.121	0.181	<b>1</b>

Values in bold are different from 0 with a significance level  $\alpha = 0.05$ . AGB: above-ground biomass, HI: harvest index, and THS: 1000-seed weight.