

**Table S1.** Climatic data for the experimental site in 2019 and 2020 cropping seasons.

Month	Rain	Wind	RH	TDew	TMax	TMin	TMean
<b>2018-2019</b>							
November 2018	0.50	2.28	61.08	12.05	25.60	15.39	19.73
December 2018	0.89	3.05	66.33	8.96	19.93	11.63	15.16
January 2019	0.32	3.39	58.47	3.55	17.90	6.99	11.65
February 2019	0.31	2.84	60.66	5.47	19.82	7.95	13.11
March 2019	0.56	3.11	58.87	7.39	22.48	9.98	15.52
April 2019	0.13	3.17	51.34	8.31	26.54	12.42	18.90
May 2019	0.00	3.22	39.05	9.75	34.24	17.22	25.22
<b>2019-2020</b>							
November 2019	0.00	2.56	56.95	12.02	28.05	15.92	21.01
December 2019	0.85	3.34	65.50	8.96	20.91	11.60	15.42
January 2020	1.63	3.34	70.22	7.63	17.66	9.27	12.90
February 2020	0.88	2.79	68.68	8.05	19.56	9.37	13.74
March 2020	2.29	3.24	62.33	8.68	23.22	10.50	16.01
April 2020	3.27	2.81	59.63	10.36	25.60	12.58	18.47
May 2020	0.00	3.20	53.90	12.87	31.11	15.91	22.80

Rain= Precipitation (mm), Wind= Wind speed at 2 meters (m/s), RH= Relative humidity at 2 meters (%), TDew= Dew/Frost point at 2 meters (°C), TMax= Maximum temperature at 2 meters (°C), TMin= Minimum temperature at 2 meters (°C), SRad= Solar radiation (MJ/m<sup>2</sup> day<sup>-1</sup>), and TMean= Average temperature at 2 meters (°C).

**Table S2.** Soil properties of the experimental site for 2018-2019 and 2019-2020 growing seasons.

Characteristics	2018-2019	2019-2020
Hydraulic properties		
Bulk density (g cm <sup>-3</sup> )	1.26	1.28
Field capacity (%)	23.58	24.65
Wilting point (%)	11.51	11.94
Available soil moisture (%)	12.07	12.62
Hydraulic conductivity (cm h <sup>-1</sup> )	4.83	4.64
Soil particles distribution		
Sand (%)	51.60	56.40
Silt (%)	24.00	17.20
Clay (%)	23.20	26.40
Texture	Sandy clay loom	Sandy clay
Organic matter (%)	0.22	0.23
Calcium carbonate (%)	18.93	20.46
pH	7.90	8.00
Available nutrients		
Nitrogen (g/kg soil)	0.20	0.26
Phosphorus (g/kg soil)	0.07	0.09
Potassium (g/kg soil)	1.83	1.92
Soluble cations (meq l <sup>-1</sup> )		
Calcium	7.69	5.93
Magnesium	2.65	2.12
Sodium	6.04	8.65
Carbonate	-	-
Soluble anions (meq l <sup>-1</sup> )		
Bicarbonate	5.30	4.27
Chlorine	8.75	10.42
Sulphate	3.47	4.62

**Table S3.** Analyses of variance of agronomic and physio-chemical traits as affected by canola genotypes, irrigation regimes and their interactions.

Source of variation	d.f.	DTF	DTM	NoB	NoP	PH	SY	Oil%
Season (S)	1	0.061	0.048	0.716	0.415	0.38	0.059	0.041
Irrigation (I)	3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Genotype (G)	9	<0.001	<0.001	0.006	<0.001	<0.001	<0.001	<0.001
S×I	3	0.562	0.991	0.148	0.383	0.971	0.059	<0.001
S×G	9	0.935	0.951	0.969	1.000	1.000	0.992	0.016
I×G	27	0.041	0.450	0.990	0.122	0.520	0.125	<0.001
S×I×G	27	0.907	0.871	0.782	0.708	0.514	0.768	0.058
		RWC	Proline	AC	GB	TPC	Chl	
Season (S)	1	0.362	0.372	0.051	0.927	0.041	0.051	
Irrigation (I)	3	<0.001	0.381	<0.001	<0.001	<0.001	<0.001	
Genotype (G)	9	0.041	<0.001	<0.001	<0.001	<0.001	<0.001	
S×I	3	0.995	0.390	0.361	0.254	<0.001	0.005	
S×G	9	0.820	0.448	0.462	0.345	0.559	0.005	
I×G	27	0.705	<0.001	<0.001	<0.001	<0.001	<0.001	
S×I×G	27	1.000	0.462	0.360	0.451	0.646	0.016	