

Table S1. Main phenological growth stages of the seven camelina genotypes sown in autumn 2017 (Y1A) and 2018 (Y2A) expressed as growing degree days (GDD) with the corresponding cumulative rainfall (mm).

Growth period	GDD (°C d)							Cumulative rainfall (mm)						
	V1	V2	V3	V4	V5	V6	CELINE	V1	V2	V3	V4	V5	V6	CELINE
Y1A														
Sowing- Emergence ^a	255	268	255	268	255	242	255	100.8	102.8	100.8	102.8	100.8	98.6	100.8
Emergence-Elongation ^b	317	321	364	362	334	376	334	143.2	141.4	190.6	199.4	143.4	192.8	143.4
Elongation-Start of flowering ^c	159	160	130	190	160	144	182	169.2	187.8	140.6	170.4	187.8	167.4	214.6
Start of flowering-Full flowering ^d	53	35	35	33	35	89	98	45.6	26.8	26.8	24.4	26.8	38.2	38.4
Full flowering- Seed development ^e	245	245	269	284	245	176	219	53.8	53.8	53.8	15.8	53.8	15.6	15.6
Seed development-Seed maturity ^f	292	342	291	234	315	292	233	57.4	59.6	59.6	59.4	59.6	57.4	57.2
Vegetative cycle ^g	731	749	749	820	749	763	771	413.2	432.0	432.0	472.6	432.0	458.8	458.8
Reproductive cycle ^h	590	622	595	551	595	558	550	156.8	140.2	140.2	99.6	140.2	111.2	111.2
Total growing cycle ⁱ	1321	1371	1344	1371	1344	1321	1321	570.0	572.2	572.2	572.2	572.2	570.0	570.0
Y2A														
Sowing- Emergence	107	107	142	107	107	107	107	49.4	49.4	50.6	49.4	49.4	49.4	49.4
Emergence-Elongation	256	216	210	338	230	245	245	129.4	129	128.2	130.8	129.2	129.4	129.4
Elongation-Start of flowering	137	177	174	133	163	174	174	2.8	3.2	2.8	2.0	3.0	2.8	2.8
Start of flowering-Full flowering	26	26	26	53	26	26	26	0.0	0.0	0.2	39.4	0.0	0.2	0.2
Full flowering- Seed development	291	251	265	296	291	265	265	111.8	111.4	111.6	117.6	111.8	111.6	111.6
Seed development-Seed maturity	146	186	213	103	146	213	213	46.2	46.6	67.4	21.6	46.2	67.4	67.4
Vegetative cycle	500	500	526	578	500	526	526	181.6	181.6	181.6	182.2	181.6	181.6	181.6
Reproductive cycle	463	463	504	452	463	504	504	158.0	158.0	179.2	178.6	158.0	179.2	179.2
Total growing cycle	963	963	1030	1030	963	1030	1030	339.6	339.6	360.8	360.8	339.6	360.8	360.8

Phenotypic descriptions and growth stages according to the BBCH scale [47]:

^a emergence of cotyledons through soil surface

^b main stem of 10% of its final length

^c inflorescence present but still enclosed by leaves

^d 50% of open flowers on the main stem

^e 50% of siliques having reached their final size

^f 90% of siliques ripe

^g the period from sowing till start of flowering

^h the period from start of flowering till seed maturity

ⁱ the period from sowing till seed maturity (harvest)

Table S2. Main phenological growth stages of the seven camelina genotypes sown in spring 2017 (Y1S) and 2019 (Y2S) expressed as growing degree days (GDD) with the corresponding cumulative rainfall (mm).

Growth period	GDD (°C d)							Cumulative rainfall (mm)						
	V1	V2	V3	V4	V5	V6	CELINE	V1	V2	V3	V4	V5	V6	CELINE
Y1S														
Sowing- Emergence ^a	76	112	112	112	76	112	76	38.4	38.4	38.4	38.4	38.4	38.4	38.4
Emergence-Elongation ^b	255	232	251	345	268	251	314	15.6	15.6	37.0	47.8	15.6	37.0	41.8
Elongation-Start of flowering ^c	126	113	135	130	113	135	128	32.2	32.2	13.2	27.2	32.2	13.2	24.4
Start of flowering-Full flowering ^d	80	80	89	71	80	89	98	25.0	25.0	24.8	22.6	25.0	24.8	21.2
Full flowering- Seed development ^e	221	171	187	210	221	201	172	30.2	24.8	28.0	6.4	30.2	28.0	15.6
Seed development-Seed maturity ^f	401	451	385	291	401	371	371	4.6	10.0	4.6	3.6	4.6	4.6	4.6
Vegetative cycle ^g	457	457	498	587	457	498	518	86.2	86.2	88.6	113.4	86.2	88.6	104.6
Reproductive cycle ^h	702	702	661	572	702	661	641	59.8	59.8	57.4	32.6	59.8	57.4	41.4
Total growing cycle ⁱ	1159	1159	1159	1159	1159	1159	1159	146.0	146.0	146.0	146.0	146.0	146.0	146.0
Y2S														
Sowing- Emergence	47	47	47	47	47	47	47	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Emergence-Elongation	237	207	237	369	291	291	291	43.0	42.4	43.0	113.8	75.0	75.0	75.0
Elongation-Start of flowering	100	162	172	57	118	118	118	32.0	71.4	71.2	1.0	39.2	39.2	39.2
Start of flowering-Full flowering	90	71	59	93	59	59	59	39.8	1.2	22.2	45.2	22.2	22.2	22.2
Full flowering- Seed development	128	115	131	214	131	179	131	45.6	45.4	37.4	42.4	37.4	45.2	37.4
Seed development-Seed maturity	404	404	360	225	360	312	360	42.2	42.2	28.8	0.2	28.8	21.0	28.8
Vegetative cycle	384	416	456	473	456	456	456	75.4	114.2	114.6	115.2	114.6	114.6	114.6
Reproductive cycle	622	590	550	532	550	550	550	127.6	88.8	88.4	87.8	88.4	88.4	88.4
Total growing cycle	1006	1006	1006	1006	1006	1006	1006	203.0	203.0	203.0	203.0	203.0	203.0	203.0

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^a emergence of cotyledons through soil surface

^b main stem of 10% of its final length

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^f 90% of siliques ripe

^g the period from sowing till start of flowering

^h the period from start of flowering till seed maturity

ⁱ the period from sowing till seed maturity (harvest)

Table S3. Pearson's product-moment correlation coefficients and their *p*-values for environmental and agronomic traits of camelina.

		GDD	Total precipitations	Seed yield	Plant height	Plant density	No. siliques plant ⁻¹	No. seeds silique ⁻¹	1000- seed weight	Above-ground biomass	Harvest index	Oil content	Oil yield
Total precipitations	r	0.61											
	<i>p</i> -value	<0.001											
Seed yield	r	-0.38	0.05										
	<i>p</i> -value	0.04	0.79										
Plant height	r	0.10	0.67	0.28									
	<i>p</i> -value	0.28	<0.001	0.002									
Plant density	r	-0.54	-0.55	0.05	-0.32								
	<i>p</i> -value	0.003	0.002	0.78	0.10								
No. siliques plant ⁻¹	r	0.22	0.59	0.45	0.49	-0.57							
	<i>p</i> -value	0.26	<0.001	0.02	0.008	0.002							
No. seeds silique ⁻¹	r	0.39	0.19	-0.24	0.26	-0.34	-0.16						
	<i>p</i> -value	0.04	0.33	0.22	0.18	0.08	0.40						
1000-seed weight	r	-0.16	0.19	0.42	0.08	0.03	-0.01	-0.26					
	<i>p</i> -value	0.40	0.32	0.02	0.67	0.86	0.94	0.19					
Above-ground biomass	r	-0.51	0.14	0.75	0.58	0.19	0.34	-0.14	0.24				
	<i>p</i> -value	<0.001	0.15	<0.001	<0.001	0.34	0.07	0.47	0.23				
Harvest index	r	0.36	-0.20	0.01	-0.51	-0.24	-0.03	-0.09	0.13	-0.62			
	<i>p</i> -value	0.06	0.31	0.97	<0.001	0.22	0.88	0.66	0.52	<0.001			
Oil content	r	0.71	0.44	-0.24	-0.04	-0.30	0.23	0.20	-0.03	-0.49	0.43		
	<i>p</i> -value	<0.001	0.02	0.22	0.85	0.11	0.23	0.30	0.87	0.008	0.02		
Oil yield	r	-0.34	0.09	0.98	0.28	0.05	0.49	-0.24	0.43	0.71	0.04	-0.1	
	<i>p</i> -value	0.08	0.63	<0.001	0.14	0.78	0.008	0.21	0.02	<0.001	0.83	0.62	
Crude protein	r	-0.75	-0.61	0.11	-0.12	0.45	-0.32	-0.34	-0.10	0.28	-0.25	-0.58	0.06
	<i>p</i> -value	<0.001	<0.001	0.57	0.53	0.01	0.09	0.07	0.59	0.14	0.20	0.001	0.75