

**Supplementary Table 2.** Monthly climatic parameters for the study olive orchards (Boumia and Ain Touta) in northeastern Algeria

Climate parameters	January	February	March	April	May	June	July	August	September	October	November	December	Average
<b>Boumia Station (Semiarid climate)</b>													
Mean temperature (°C)	5.3 ± 1.1	6.3 ± 1.0	8.7 ± 0.9	11.5 ± 1.2	14.8 ± 1.6	19.6 ± 2.0	22.8 ± 2.4	22.7 ± 2.2	19.8 ± 1.7	14.7 ± 1.2	10.1 ± 1.0	6.4 ± 1.0	13.6 ± 1.4
Maximum temperature (°C)	13.2 ± 2.4	14.6 ± 2.2	17.4 ± 2.1	20.4 ± 2.3	24.4 ± 2.8	28.8 ± 3.5	32.8 ± 4.3	32.7 ± 3.7	29.2 ± 2.4	23.7 ± 2.2	18.4 ± 2.3	14.3 ± 2.5	22.5 ± 2.7
Minimum temperature (°C)	5.2 ± 3.0	5.8 ± 2.9	7.7 ± 3.0	9.6 ± 2.9	13.1 ± 2.7	17.3 ± 2.9	20.0 ± 2.9	20.4 ± 2.8	18.3 ± 2.7	13.9 ± 3.2	9.5 ± 3.2	6.1 ± 3.3	12.2 ± 3.0
Precipitation (mm)	51.6 ± 24.7	43.9 ± 18.7	48.8 ± 18.7	38.2 ± 11.9	45.8 ± 11.8	27.3 ± 6.6	9.3 ± 3.1	12.4 ± 4.9	30.0 ± 4.6	35.9 ± 7.9	45.0 ± 11.5	46.0 ± 23.2	36.2 ± 12.3
Potential evapotranspiration (mm)	34.3 ± 9.4	45.0 ± 8.3	72.9 ± 16.3	96.4 ± 19.7	127.8 ± 23.7	151.5 ± 20.7	176.3 ± 23.8	165.6 ± 19.3	121.9 ± 14.9	81.4 ± 15.1	47.6 ± 12.7	33.8 ± 9.1	96.2 ± 16.1
Water vapour pressure (hPa)	9.2 ± 1.7	8.9 ± 1.8	10.1 ± 1.9	11.3 ± 2.6	14.3 ± 2.9	16.9 ± 3.6	19.0 ± 5.2	19.9 ± 5.9	18.7 ± 4.7	15.2 ± 3.2	11.7 ± 1.8	9.7 ± 1.7	13.7 ± 3.1
Wind speed (km/h)	6.9 ± 2.7	7.3 ± 2.7	8.0 ± 3.2	7.5 ± 3.0	7.1 ± 2.9	6.9 ± 2.6	5.6 ± 2.1	5.8 ± 2.1	5.6 ± 1.6	5.6 ± 1.8	5.7 ± 1.9	6.0 ± 2.0	6.5 ± 2.4
Sunshine frequency (%)	46.0 ± 11.1	51.0 ± 10.7	55.1 ± 7.5	55.0 ± 7.0	61.5 ± 5.8	63.8 ± 4.0	74.4 ± 4.5	73.0 ± 3.8	66.6 ± 5.9	57.5 ± 6.2	49.0 ± 10.3	46.3 ± 11.7	58.3 ± 7.4
Day length (hours)	10.0	10.8	11.9	13.1	14.0	14.5	14.3	13.4	12.4	11.2	10.3	9.7	12.1
Sunshine hours (hours)	4.6 ± 1.1	5.5 ± 1.2	6.5 ± 0.9	7.2 ± 0.9	8.6 ± 0.8	9.1 ± 0.6	10.6 ± 0.6	9.8 ± 0.5	8.2 ± 0.7	6.5 ± 0.7	5.0 ± 1.1	4.6 ± 1.1	7.2 ± 0.8
Ground frost frequency (%)	10	7	2	0	0	0	0	0	0	0	0	6	2
Effective rain (mm)	47	41	45	36	42	26	9	12	29	34	42	43	405
Effective rain ratio (%)	92	93	92	94	93	96	99	98	95	94	93	93	93
Rainy days	9	8	8	6	7	4	1	2	4	5	7	8	69
Solid precipitation ratio (%)	11	9	4	2	1	0	0	0	0	1	3	8	4
<b>Ain Touta Station (Arid climate)</b>													
Mean temperature (°C)	6.1 ± 2.4	7.1 ± 2.8	9.9 ± 3.0	13.1 ± 3.5	16.7 ± 4.0	21.7 ± 4.4	24.9 ± 4.7	24.5 ± 4.3	21.1 ± 3.5	15.9 ± 3.1	10.8 ± 2.6	7.0 ± 2.3	14.9 ± 3.4
Maximum temperature (°C)	13.1 ± 2.9	14.7 ± 2.8	17.7 ± 2.9	21.1 ± 3.3	25.1 ± 3.5	29.6 ± 4.1	33.8 ± 4.6	33.5 ± 4.0	29.6 ± 3.1	23.8 ± 2.9	18.1 ± 2.9	14.1 ± 3.0	22.9 ± 3.3
Minimum temperature (°C)	4.5 ± 3.5	5.4 ± 3.4	7.5 ± 3.4	9.7 ± 3.6	13.5 ± 3.5	17.7 ± 3.8	20.5 ± 3.7	20.7 ± 3.5	18.3 ± 3.5	13.6 ± 3.8	9.1 ± 3.8	5.4 ± 3.8	12.2 ± 3.6
Precipitation (mm)	32.3 ± 14.3	27.9 ± 10.6	33.3 ± 12	24.0 ± 9.8	32.7 ± 11.3	21.2 ± 8.4	6.9 ± 3.8	9.7 ± 5.0	26.2 ± 5.8	29.9 ± 7.8	37.2 ± 11.0	30.8 ± 11.9	26.0 ± 9.3
Potential evapotranspiration (mm)	33.1 ± 8.6	45.3 ± 8.2	74.3 ± 16.2	98.6 ± 19.3	131.8 ± 25.3	154.5 ± 24.7	180.2 ± 26	168.5 ± 20.6	124.0 ± 17.1	82.6 ± 15.4	47.5 ± 12.2	33.5 ± 8.5	97.8 ± 16.8
Water vapour pressure (hPa)	8.9 ± 1.6	8.6 ± 1.8	9.7 ± 2.0	10.9 ± 2.5	13.7 ± 3.0	16.1 ± 3.6	18.0 ± 5.1	19.1 ± 5.8	18.1 ± 4.6	14.8 ± 3.1	11.3 ± 1.8	9.4 ± 1.6	13.2 ± 3.0
Wind speed (km/h)	6.5 ± 2.4	7.3 ± 2.9	7.9 ± 3.3	7.5 ± 3.1	7.1 ± 3.0	6.8 ± 2.9	5.6 ± 2.0	5.8 ± 1.9	5.5 ± 1.5	5.6 ± 1.9	5.6 ± 1.8	6.1 ± 2.1	6.4 ± 2.4
Sunshine frequency (%)	48 ± 12.1	54.2 ± 11.7	57.3 ± 7.6	56.5 ± 8.1	63.4 ± 5.8	64.7 ± 4.5	74.9 ± 3.4	73.6 ± 4.5	68.1 ± 6.8	58.5 ± 6.8	51.6 ± 10.1	47.9 ± 13.2	59.9 ± 7.9
Day length (hours)	10.0	10.9	11.9	13.0	14.0	14.4	14.2	13.4	12.4	11.3	10.3	9.8	12.1
Sunshine hours (hours)	4.8 ± 1.2	6.0 ± 1.3	6.7 ± 0.9	7.4 ± 1.1	8.9 ± 0.8	9.4 ± 0.6	10.6 ± 0.5	9.8 ± 0.6	8.4 ± 0.8	6.5 ± 0.8	5.3 ± 1.0	4.6 ± 1.3	7.4 ± 0.9
Ground frost frequency (%)	5	2	0	0	0	0	0	0	0	0	0	4	1
Effective rain (mm)	27	16	21	19	28	21	8	5	25	29	33	27	258
Effective rain ratio (%)	96	97	96	97	95	96	99	99	96	95	94	96	96
Rainy days	5	3	4	4	5	3	1	1	4	5	6	5	46
Solid precipitation ratio (%)	10	10	4	3	1	0	0	0	0	1	3	6	4