

Supplementary Table 1. Location, climate, and soil characteristics of study olive orchards (Boumia and Ain Touta) in northeastern Algeria.

Site features	Study sites	
	Boumia	Ain Touta
Location		
Latitude (North)	35°42'40.6"	35°24'46.3"
Longitude (East)	06°25'01.8	05°56'41.1"
Elevation (m)	833	909
Climate characteristics		
Emberger index (Q ₂)	32	25
Emberger classification	Semiarid	Arid
Koepfen class	BSk	BSk
	B = arid climate	B = arid climate
	S = steppe	S = steppe
	k = cold	k = cold
Budyko climate	Desert	Desert
Radiation index of dryness	3.482	4.940
Budyko evaporation (mm/year)	344	267
Budyko runoff (mm/year)	9	2
Budyko evaporation (%)	97.5	99.4
Budyko runoff (%)	2.5	0.6
Aridity	Semiarid	Semiarid
Aridity index	0.34	0.23
Moisture index (%)	-66	-77
De Martonne index	15	12
Precipitation deficit (mm/year)	696	921
Climatic NPP *	627	491
NPP (temperature)	1725	1604
NPP (precipitation)	627	491
	NPP is precipitation limited	
Gorczynski continentality index	28.2	19.2
Olive orchard features		
Orchard surface area (ha)	1	1
Number of trees	200	81
Spacing between trees (m)	7 × 7	10 × 10
Tree height (m)	2–3	4–5
Vegetation cover (%)	50–60	30–40
Understorey	Adventive herbaceous plants	
Soil variables		
Electrical conductivity (ds/m)	0.32	0.20
pH	7.68	8.40
Total carbon content (%)	1.67	0.98
Organic matter (%)	2.87	1.70
Total calcium carbonate (%)	21.92	42.30
Clay separate (%)	22.72	30.02
Fine silt (%)	21.81	23.83
Coarse silt (%)	7.78	3.91
Fine sand (%)	31.84	16.32
Coarse sand (%)	15.85	25.92
Soil texture	Silty	Silty-clay

*NPP, net primary production in g of dry matter/m²/year is precipitation limited.