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Agricultural use of compost under different irrigation strategies in a hedgerow olive grove under Mediterranean conditions – a comparison with traditional systems

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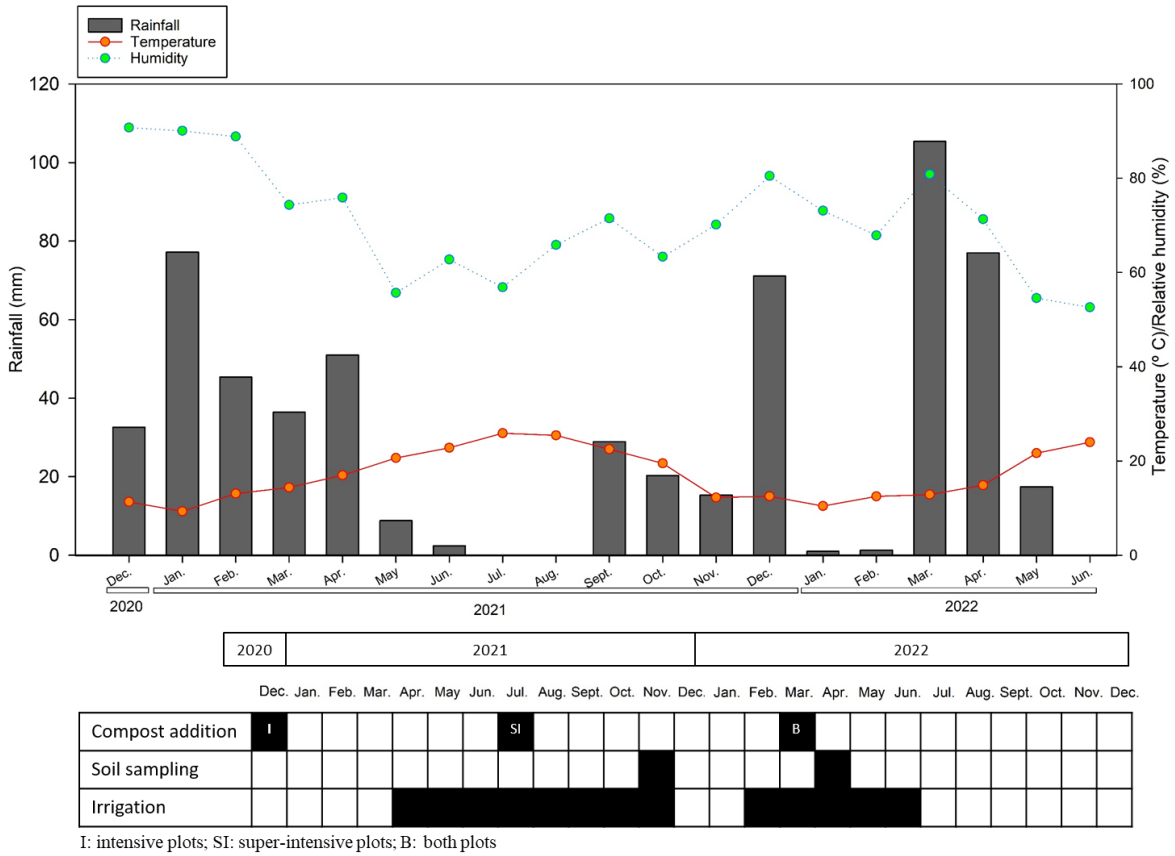
Figure S1. Average precipitations (histograms), temperature, and air humidity (stacked lines) and chronogram of the compost addition, soil sampling and irrigation months performed during the experiment at the super-intensive and intensive traditional plots.



I: intensive plots; SI: super-intensive plots; B: both plots

Table S1. Amount of water (mm) provided monthly under different irrigation management: D: deficit irrigation, F: full irrigation and fertilizer addition: alperujo compost (C) or no letter (Ø) to refer to the inorganic fertilization.

		mm H_2O			
		F	**FC**	**D**	**DC**
2021	April	63.7	59.6	14.7	18.1
	May	51.4	58.3	28.5	28.5
	June	99.4	80.6	49.5	46.9
	July	144	142	27.3	51.6
	Sept.	115	111	49.8	34.6
	Oct.	198	202	90.9	86.4
	Nov.	91.7	74.3	46.2	38.4
2022	Feb.	14.3	17.9	9.1	6.2
	Mar.	50.6	52.3	15.6	6.9
	Apr.	77.4	85.6	17.2	8.5
	May	108	110	29.4	19.0
	June	105	101	26.2	32.1

Table S2. Soil parameters at the hedgerow plots during the two years of the experiments under different irrigation management: NI: no irrigation, D: deficit irrigation, F: full irrigation and fertilization addition: compost (C) or no letter (Ø) to refer to the inorganic fertilization at different sampling times. See Table 3 for the statistical analysis. The irrigation factor refers to pooled values from the two fertilization treatments. Data are mean values ± standard error of the mean (SEM). SWC: soil water content, EC: electrical conductivity, SOM: soil organic matter, WSC: water-soluble carbon, TN: total nitrogen.

		NI	**NIC**	**D**	**DC**	**F**	**FC**
SWC (%)	Nov. 2021	8.79 ± 0.50	8.82 ± 0.67	8.48 ± 0.38	11.3 ± 0.20	10.8 ± 0.72	11.5 ± 1.04
	Apr. 2022	7.16 ± 0.35	8.27 ± 1.04	6.56 ± 0.62	8.32 ± 0.21	10.3 ± 0.76	9.91 ± 0.44
pH	Nov. 2021	8.38 ± 0.23	8.58 ± 0.08	8.49 ± 0.02	8.21 ± 0.06	8.36 ± 0.14	8.41 ± 0.13
	Apr. 2022	8.51 ± 0.20	8.84 ± 0.03	9.00 ± 0.21	8.94 ± 0.12	9.30 ± 0.14	9.15 ± 0.09
EC	Nov. 2021	125 ± 9.96	192 ± 19.2	149 ± 39.2	377 ± 42.2	452 ± 2.50	352 ± 48.0
($\mu S\ cm^{-1}$)	Apr. 2022	107 ± 5.27	116 ± 2.54	129 ± 19.5	135 ± 7.88	174 ± 16.0	159 ± 12.2
SOM	Nov. 2021	1.78 ± 0.26	2.03 ± 0.04	1.78 ± 0.22	2.29 ± 0.42	1.68 ± 0.23	2.67 ± 0.03
(%)	Apr. 2022	1.67 ± 0.13	1.90 ± 0.07	1.70 ± 0.08	1.93 ± 0.16	1.46 ± 0.04	1.64 ± 0.06
WSC	Nov. 2021	245 ± 44.8	410 ± 1.75	298 ± 16.0	391 ± 10.4	284 ± 6.08	631 ± 9.85
($mg\ kg^{-1}$)	Apr. 2022	146 ± 8.71	223 ± 12.6	192 ± 30.9	304 ± 12.1	229 ± 18.2	280 ± 14.5
TN	Nov. 2021	0.90 ± 0.05	1.15 ± 0.01	1.00 ± 0.07	1.13 ± 0.16	0.81 ± 0.04	1.28 ± 0.20
($g\ kg^{-1}$)	Apr. 2022	0.91 ± 0.07	1.04 ± 0.04	0.80 ± 0.03	1.02 ± 0.05	0.77 ± 0.02	1.12 ± 0.28
NO_3^-	Nov. 2021	11.3 ± 4.23	15.3 ± 4.96	5.60 ± 0.79	12.3 ± 4.80	15.8 ± 6.70	4.40 ± 1.88
($mg\ kg^{-1}$)	Apr. 2022	5.50 ± 0.06	5.37 ± 0.17	2.83 ± 0.13	5.13 ± 0.07	3.17 ± 0.09	3.70 ± 0.21
NH_4^+	Nov. 2021	1.73 ± 0.12	1.97 ± 0.07	1.73 ± 0.09	1.90 ± 0.06	1.70 ± 0.15	2.00 ± 0.23
($mg\ kg^{-1}$)	Apr. 2022	1.50 ± 0.82	1.40 ± 0.23	1.07 ± 0.43	1.33 ± 0.62	1.43 ± 0.30	0.90 ± 0.58
Olsen-P	Nov. 2021	7.67 ± 2.26	14.9 ± 0.78	4.73 ± 1.30	8.90 ± 4.50	6.93 ± 3.39	10.3 ± 3.47
($mg\ kg^{-1}$)	Apr. 2022	11.3 ± 2.10	15.7 ± 2.00	5.27 ± 0.32	16.5 ± 2.27	4.87 ± 1.17	9.60 ± 0.53
Available-K	Nov. 2021	275 ± 22.7	394 ± 9.00	297 ± 6.03	390 ± 92.8	284 ± 23.7	631 ± 95.4
($mg\ kg^{-1}$)	Apr. 2022	333 ± 102	389 ± 37.3	312 ± 95.0	538 ± 37.1	202 ± 12.6	393 ± 10.4

Table S3. Soil parameters at the intensive traditional plots during the two years of the experiments under a rainfed management and fertilizer addition: compost (C) or no letter (Ø) to refer to the inorganic fertilization at different sampling times. See Table 5 for the statistical analysis. Data are mean values ± standard error of the mean (SEM). SWC: soil water content, EC: electrical conductivity, SOM: soil organic matter, WSC: water-soluble carbon, TN: total nitrogen.

		NI	**NIC**
SWC (%)	Nov. 2021	8.31 ± 1.53	9.74 ± 0.15
	Apr. 2022	6.46 ± 0.85	8.54 ± 0.53
pH	Nov. 2021	7.76 ± 0.21	8.42 ± 0.02
	Apr. 2022	7.71 ± 0.39	8.54 ± 0.06
EC ($\mu S\ cm^{-1}$)	Nov. 2021	98.7 ± 11.2	135 ± 8.50
	Apr. 2022	99.0 ± 11.1	165 ± 26.2
SOM (%)	Nov. 2021	2.21 ± 0.33	2.23 ± 0.11
	Apr. 2022	2.15 ± 0.20	2.58 ± 0.05
WSC ($mg\ kg^{-1}$)	Nov. 2021	322 ± 176	326 ± 32.3
	Apr. 2022	190 ± 18.6	355 ± 59.2
TN ($g\ kg^{-1}$)	Nov. 2021	1.01 ± 0.11	1.11 ± 0.05
	Apr. 2022	0.94 ± 0.07	1.17 ± 0.07
NO_3^- ($mg\ kg^{-1}$)	Nov. 2021	15.4 ± 5.6	15.4 ± 3.73
	Apr. 2022	2.90 ± 0.40	7.03 ± 0.66
NH_4^+ ($mg\ kg^{-1}$)	Nov. 2021	1.61 ± 0.21	1.93 ± 0.09
	Apr. 2022	1.33 ± 0.12	0.53 ± 0.05
Olsen-P ($mg\ kg^{-1}$)	Nov. 2021	14.5 ± 1.2	13.8 ± 1.71
	Apr. 2022	27.1 ± 5.60	31.4 ± 7.73
Available-K ($mg\ kg^{-1}$)	Nov. 2021	265 ± 20.9	546 ± 79.7
	Apr. 2022	416 ± 58.9	1359 ± 229