Muñoz-Rengifo J, Chirino E, Cerdán V, Martínez J, Fosado O, Vilagrosa A (2020).
Using field and nursery treatments to establish *Quercus suber* seedlings in Mediterranean degraded shrubland
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Supplementary Material

Fig. S1 - Details of the used containers. Shallow container CCS-18 (on the left) and deep container CCL-30 (on the right).

Fig. S2 - Panel of vegetable fiber composed per wicker branch (*Salix purpurea*), 0.50 m wide by 1.00 m long (above). Lateral view of the vegetable fiber tree shelters (VFT; on the left. Top view and detail of the solar light transmission between wicker branches (on the right).

Fig. S3 - View of a cleared shrubland strips (CSs) and undisturbed shrubland strips (USs) on both sides. In each strip, (CSs and USs) were combined with the other experimental treatments. Seedlings grown in the CCS-18 and CCL-30 containers, combined with vegetable fiber tree shelters (VFT) and without VFT (NVFT).

Fig. S4 - Ombroclimatic diagram. Monthly mean rainfall and temperature. Weather Station (Sierra Calderona; Fig. 1A: year 2011; Fig. 1B: year 2012. Data from CEAMET (CEAM); Fig. 1C: Historical series data of the Segorbe HS weather station (years 1961 to 1990; Pérez Cuevas, 1994).

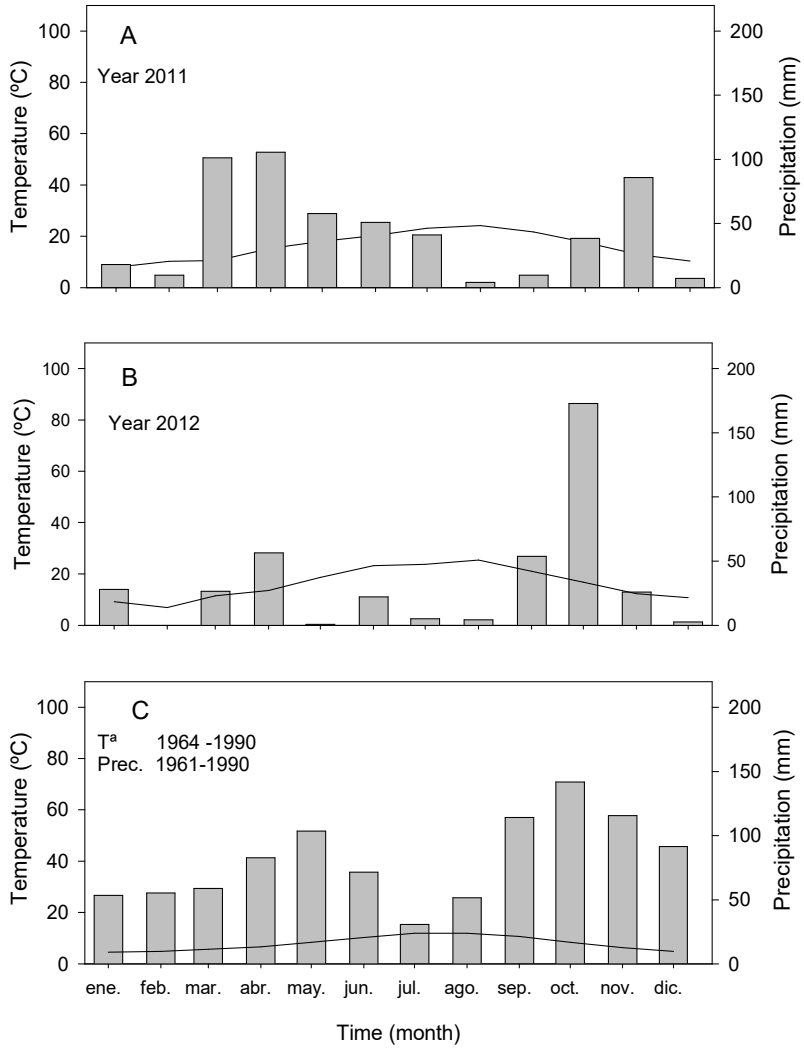
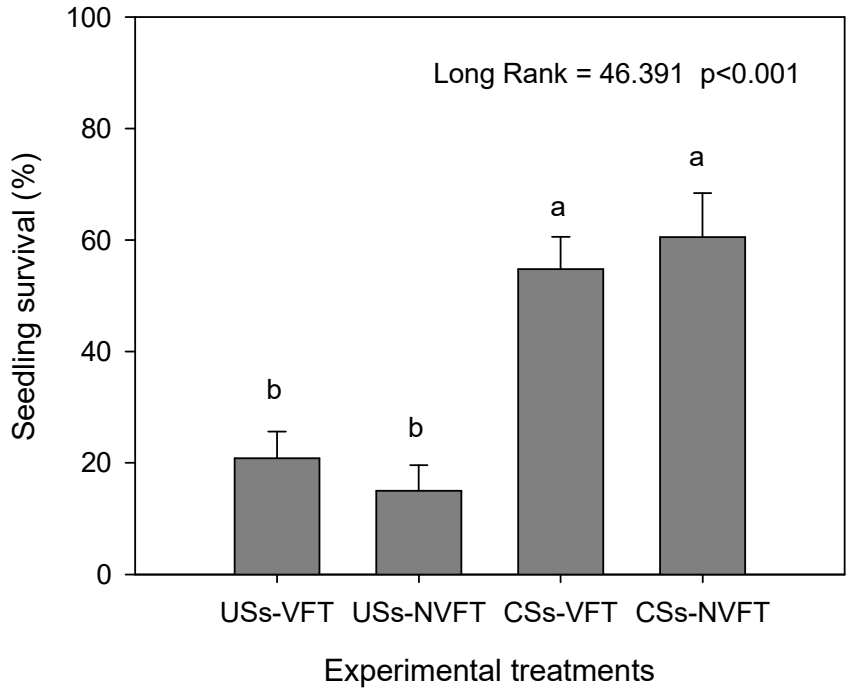


Fig. S5 - Seedling survival by the combined effect of the two experimental treatments. Cleared shrubland strips (CSs); undisturbed shrubland strips (USs); vegetable fiber tree shelters (VFT); without vegetable fiber tree shelters (NVFT).



Tab. S1 - Measures taken in June 2011 of soil water content (*SWC*, %), water potential at midday (Ψ_{md}, -MPa), leaf chlorophyll content (*LCC*, units SPAD), and maximum efficiency of photosystem PSII (*Fv/Fm* at predawn and midday) per experimental site. Results of the GLM univariate, three-way ANOVA; factors: tree shelters (T_f), container type (CT_f) and shrubland management (SM_f); the F value in bold indicates significant difference $p < 0.05$; significance *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ns: not significant; (1) tendency $p < 0.1$.

Site	**Effects of factors and interactions**	***F value***				
		SWC	***Ψ_{md}***	***LCC***	***Fv/Fm $_{pd}$***	***Fv/Fm $_{md}$***
Puntal de la Bella	SM_f	2.482 ns	0.719 ns	2.717 ns	1.232 ns	1.926 ns
	T_f	0.449 ns	**6.696 ***	0.018 ns	**4.744 ***	0.390 ns
	CT_f	0.030 ns	2.122 ns	**4.645 ***	0.854 ns	0.406 ns
	$SM_f * T_f$	0.862 ns	1.230 ns	1.860 ns	0.020 ns	0.056 ns
	$SM_f * CT_f$	0.148 ns	0.057 ns	**8.638 ****	0.587 ns	0.008 ns
	$T_f * CT_f$	0.261 ns	0.398 ns	2.010 ns	0.000 ns	0.620 ns
	$SM_f * T_f * CT_f$	1.205 ns	0.957 ns	0.133 ns	1.618 ns	0.208 ns
El Sapo	SM_f	3.863 ns (1)	0.868 ns	1.030 ns	1.205 ns	0.167 ns
	T_f	0.442 ns	2.450 ns	1.279 ns	**10.519 ****	0.228 ns
	CT_f	**5.297 ***	0.272 ns	0.865 ns	0.100 ns	1.379 ns
	$SM_f * T_f$	0.227 ns	0.012 ns	3.005 ns	0.332 ns	0.216 ns
	$SM_f * CT_f$	0.079 ns	0.312 ns	0.019 ns	0.246 ns	0.003 ns
	$T_f * CT_f$	0.402 ns	0.450 ns	0.004 ns	0.344 ns	0.240 ns
	$SM_f * T_f * CT_f$	0.058 ns	0.612 ns	2.968 ns	0.002 ns	3.643 ns
Tristán	SM_f	**4.920 ***	**6.919 ***	2.250 ns	0.237 ns	0.926 ns
	T_f	0.080 ns	**7.074 ***	2.527 ns	**6.487 ***	0.023 ns
	CT_f	0.292 ns	2.258 ns	2.263 ns	0.219 ns	2.062 ns
	$SM_f * T_f$	1.552 ns	0.061 ns	0.040 ns	0.464 ns	0.003 ns
	$SM_f * CT_f$	0.111 ns	0.330 ns	3.025 ns	1.456 ns	0.031 ns
	$T_f * CT_f$	0.365 ns	**4.282 ***	0.922 ns	3.092 ns	0.405 ns
	$SM_f * T_f * CT_f$	0.031 ns	2.270 ns	0.318 ns	0.758 ns	0.007 ns

Tab. S2 - Measures taken in August 2011 of soil water content (*SWC*, %), water potential at midday (Ψ_{md}, -MPa), leaf chlorophyll content (*LCC*, units SPAD), and maximum efficiency of photosystem PSII (*Fv/Fm* at predawn and midday) per experimental site. Results of the GLM univariate, three-way ANOVA; factors: tree shelters (T_f), container type (CT_f) and shrubland management (SM_f); the F value in bold indicates significant difference $p < 0.05$; significance *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ns: not significant; (1) tendency $p < 0.1$.

Site	Effects of factors and interactions	*F value*				
		SWC	Ψ_{md}	***LCC***	Fv/Fm_{pd}	Fv/Fm_{md}
Puntal de la Bella	SM_f	**8.436 ***	**47.007 *****	0.522 ns	0.067 ns	**7.067 ***
	T_f	0.021 ns	0.438 ns	2.097 ns	0.053 ns	0.377 ns
	CT_f	0.20 ns	0.457 ns	3.578 ns (1)	0.394 ns	0.031 ns
	$SM_f * T_f$	0.325 ns	2.236 ns	0.032 ns	0.133 ns	0.332 ns
	$SM_f * CT_f$	0.036 ns	2.416 ns	0.012 ns	0.088 ns	0.156 ns
	$T_f * CT_f$	0.049 ns	0.318 ns	2.539 ns	0.122 ns	0.279 ns
	$SM_f * T_f * CT_f$	0.648 ns	1.474 ns	1.945 ns	0.665 ns	0.026 ns
El Sapo	SM_f	**8.480 ****	**26.667 *****	0.112 ns	**11.151 ****	2.455 ns
	T_f	0.138 ns	0.972 ns	1.537 ns	0.022 ns	3.216 ns
	CT_f	0.141 ns	0.067 ns	0.191 ns	0.014 ns	0.167 ns
	$SM_f * T_f$	0.137 ns	0.432 ns	**8.447 ***	0.215 ns	1.269 ns
	$SM_f * CT_f$	0.009 ns	0.124 ns	0.972 ns	0.512 ns	2.697 ns
	$T_f * CT_f$	1.562 ns	0.675 ns	0.450 ns	1.532 ns	0.017 ns
	$SM_f * T_f * CT_f$	0.105 ns	0.124 ns	3.421 ns	0.00 ns	0.856 ns
Tristán	SM_f	**19.742 *****	**63.960 *****	0.000 ns	**18.500 *****	**19.993 *****
	T_f	0.007 ns	0.004 ns	0.985 ns	0.005 ns	0.024 ns
	CT_f	0.049 ns	0.064 ns	3.019 ns	0.002 ns	0.015 ns
	$SM_f * T_f$	0.250 ns	2.490 ns	**5.429 ***	0.019 ns	0.000 ns
	$SM_f * CT_f$	0.002ns	1.512 ns	0.813 ns	0.016 ns	0.009 ns
	$T_f * CT_f$	0.000 ns	0.048 ns	0.134 ns	0.010 ns	0.001 ns
	$SM_f * T_f * CT_f$	0.124 ns	0.025 ns	0.134 ns	0.049 ns	0.019 ns