
This is the **accepted version** of the article:

Sardans i Galobart, Jordi; Urbina Barreto, Ifigenia; Grau Fernández, Oriol; [et al.]. «Long-term drought decreases ecosystem C and nutrient storage in a Mediterranean holm oak forest». *Environmental and Experimental Botany*, Vol. 177 (Sep. 2020), art. 104135. DOI 10.1016/j.envexpbot.2020.104135

This version is available at <https://ddd.uab.cat/record/232202>

under the terms of the  license

SUPPLEMENTARY MATERIAL

Table S1. Leaf and leaf litter biomasses (mean \pm S.E.) in the three studies species in control and drought treatment stands before treatment application (1999) and during treatment application (in 2004 and 2014). The letters between brackets indicate marginally significant statistical differences between control and treatment plots ($P < 0.1$).

Biomass fraction	Species	Treatment	Year		
			1999	2004	2014
Leaf	<i>Quercus ilex</i>	Control	85880 \pm 20771	86208 \pm 22326	86677 \pm 23443
		Drought	90648 \pm 23109	88014 \pm 24748	85742 \pm 25671
	<i>Phillyrea latifolia</i>	Control	13364 \pm 6481	14086 \pm 6876	15719 \pm 7735
		Drought	12088 \pm 4847	13022 \pm 5321	14479 \pm 6029
	<i>Arbutus unedo</i>	Control	10605 \pm 4657	12046 \pm 5198	13727\pm2803 (a)
		Drought	5598 \pm 3204	6049 \pm 3291	6142\pm2745 (b)
	All	Control	109850 \pm 15864	112340 \pm 16953	118980 \pm 17394
		Drought	108334 \pm 20561	107085 \pm 21936	110306 \pm 23025
Leaf-litter	<i>Quercus ilex</i>	Control	694.5 \pm 231.3	995.9 \pm 280.0	1147 \pm 405.8
		Drought	702.7 \pm 247.2	955.4 \pm 280.0	1070 \pm 284.7
	<i>Phillyrea latifolia</i>	Control	211.4 \pm 117.0	584.8 \pm 310.1	339.7 \pm 185.1
		Drought	327.2 \pm 113.4	838.1 \pm 429.2	346.4 \pm 180.6
	<i>Arbutus unedo</i>	Control	258.2 \pm 100.4	478.7 \pm 212.2	320.8 \pm 155.7
		Drought	206.5 \pm 95.2	353.3 \pm 201.2	103.2 \pm 22.9
	All	Control	1164 \pm 202.7	2059 \pm 111.4	1808 \pm 272.0
		Drought	1236 \pm 224.5	2147 \pm 78.2	1519 \pm 96.0

Table S2. Best linear mixed models with season and treatment as independent fixed factors, plot as random factor and the different leaf studied variables. When the interaction between season x treatment was not significant, it was not taken into account in the model. The means \pm S.E. of drought and control plots of different seasons along the studied period and the mean \pm S.E. of control and drought plots in each season are provided with the statistical data. Bold font means statistically significant differences ($P < 0.05$).

Species	Foliar variable	Best Model					R ² m R ² c
<i>Arbutus unedo</i>	d ¹³ C	model <- lme(d13c ~ season + treatment, random=~1 plot, data=dades, method="REML")					0.0487 0.316
		Treatment	Season	Treatment in each season			
				Spring	Summer	Autumn	
		Control=-26.8±0.2 Drought=-26.9±0.19 F=0.14 P=0.71	Autumn=-27.3±0.28 Spring=-26.7±0.21 Summer=-26.6±0.21 F=2.31 P=0.11	Control=-26.55±0.30 Drought=-26.8±0.30 F=0.66 P=0.42	Control=-26.6±0.3 Drought=-26.6±0.3 F=0.03 P=0.87	Control=-27.3±0.42 Drought=-27.3±0.4 F=0.01 P=0.92	
	d ¹⁵ N	model <- lme(d15n ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.309 0.569
		Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn		
	Control=-4.07±0.13 Drought=-2.49±0.20 F=65.5 P<0.0001	Autumn=-3.05±0.24 Spring=-3.42±0.21 Summer=-3.37±0.29 F=1.36 P=0.26	Control=-4.11±0.24 Drought=-2.73±0.26 F=11.6 P=0.0019	Control=-4.44±0.19 Drought=-2.29±0.39 F=24.4 P<0.0001	Control=-3.68±0.21 Drought=-2.43±0.38 F=8.18 P=0.0076		
[C]	model <- lme(c ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.194 0.194	
	Treatment	Season	Treatment in each season				
			Spring	Summer	Autumn		
	Control=49.7±0.3 Drought=49.7±0.16 F=0.004 P=0.95	Autumn=50.7±0.4a Spring=49.7±0.15ab Summer=48.7±0.34b F=11.4 P<0.0001	Control=49.7±0.29 Drought=40.7±0.8 F=0.18 P=0.67	Control=48.5±0.1 Drought=48.8±0.02 F=0.11 P=0.74	Control=50.7±0.7 Drought=50.6±0.3 F=0.06 P=0.81		
[N]	model <- lme(n ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.463 0.540	
	Treatment	Season	Treatment in each season				
			Spring	Summer	Autumn		
	Control=1.51±0.05 Drought=1.46±0.06	Autumn=1.41±0.04b Spring=1.84±0.07a	Control=1.81±0.10 Drought=1.88±0.10	Control=1.28±0.05 Drought=1.12±0.04	Control=1.44±0.05 Drought=1.38±0.06		

	F=3.22 P=0.076	Summer=1.20±0.04c F=40.8 P<0.0001	F=1.11 P=0.30	F=7.56 P=0.025	F=0.614 P=0.44	
[P]	model <- lme(p ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.678 0.785
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=0.145±0.008 Drought=0.155±0.009 F=3.12 P=0.081	Autumn=0.124±0.006b Spring=0.217±0.008a Summer=0.108±0.003c F=149 P<0.0001	Control=0.205±0.013 Drought=0.230±0.008 F=2.57 P=0.12	Control=0.105±0.002 Drought=0.111±0.005 F=1.38 P=0.25	Control=0.125±0.009 Drought=0.124±0.007 F=0.0085 P=0.93	
[K]	model <- lme(k ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.389 0.591
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=1.22±0.046 Drought=1.16±0.056 F=1.46 P=0.23	Autumn=0.924±0.054b Spring=1.477±0.039a Summer=1.176±0.051ab F=44.5 P<0.0001	Control=1.45±0.06 Drought=1.50±0.05 F=0.21 P=0.65	Control=1.268±0.048 Drought=1.084±0.067 F=4.47 P=0.042	Control=0.944±0.070 Drought=0.903±0.086 F=2.62 P=0.12	
[C:N]	model <- lme(cn ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.447 0.545
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=34.5±1.0 Drought=36.6±1.4 F=0.76 P=0.39	Autumn=36.8±1.01b Spring=28.3±1.15c Summer=41.6±1.27a F=47.4 P<0.0001	Control=28.7±1.5 Drought=27.8±1.8 F=0.88 P=0.36	Control=38.7±1.3 Drought=44.5±1.9 F=6.03 P=0.020	Control=36.0±1.4 Drought=37.6±1.5 F=0.66 P=0.42	
[C:P]	model <- lme(cp ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.596 0.729
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=387±18 Drought=368±19 F=1.86 P=0.18	Autumn=432±19a Spring=239±9b Summer=461±12a F=104 P<0.0001	Control=258±16 Drought=220±7.8 F=3.22 P=0.083	Control=468±13 Drought=454±22 F=0.29 P=0.59	Control=435±28 Drought=430±26 F=0.021 P=0.89	

	[C:K]	model <- lme(ck ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.368 0.554
		Treatment	Season	Treatment in each season			
				Spring	Summer	Autumn	
		Control=44.4±2.3 Drought=48.6±2.8 F=2.89 P=0.093	Autumn=60.8±3.6a Spring=34.4±0.9c Summer=44.4±2.34b F=37.8 P<0.0001	Control=35.2±1.4 Drought=33.6±1.07 F=0.44 P=0.51	Control=39.1±1.5 Drought=49.6±4.0 F=5.73 P=0.023	Control=58.8±5.0 Drought=62.8±5.2 F=0.030 P=0.59	
	[N:P]	model <- lme(np ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.368 0.515
		Treatment	Season	Treatment in each season			
				Spring	Summer	Autumn	
		Control=11.2±0.4 Drought=9.95±0.3 F=0.556 P=0.46	Autumn=11.8±0.46a Spring=8.57±0.24b Summer=11.3±0.37a F=78.4 P<0.0001	Control=9.01±0.38 Drought=8.13±0.27 F=2.10 P=0.157	Control=12.37±0.58 Drought=10.26±0.32 F=10.2 P=0.0033	Control=12.21±0.74 Drought=11.47±0.56 F=0.43 P=0.43	
	[N:K]	model <- lme(nk ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.302 0.484
		Treatment	Season	Treatment in each season			
				Spring	Summer	Autumn	
		Control=1.31±0.06 Drought=1.36±0.06 F=1.7 P=0.20	Autumn=1.66±0.09a Spring=1.26±0.04b Summer=1.08±0.05c F=11.6 P<0.0001	Control=1.25±0.05 Drought=1.26±0.07 F=0.054 P=0.82	Control=1.035±0.055 Drought=1.130±0.081 F=0.93 P=0.34	Control=1.647±0.132 Drought=1.677±0.128 F=0.026 P=0.87	
	[P:K]	model <- lme(pk ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.477 0.517
		Treatment	Season	Treatment in each season			
				Spring	Summer	Autumn	
		Control=0.120±0.005 Drought=0.136±0.005 F=9.60 P=0.0026	Autumn=0.141±0.006a Spring=0.147±0.005a Summer=0.096±0.004b F=42.2 P<0.0001	Control=0.140±0.005 Drought=0.153±0.005 F=3.18 P=0.085	Control=0.083±0.002 Drought=0.109±0.006 F=14.4 P=0.00067	Control=0.138±0.010 Drought=0.145±0.007 F=0.33 P=0.57	
<i>Phillyrea latifolia</i>	d ¹³ C	model <- lme(d13c ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.0438 0.277
		Treatment	Season	Treatment in each season			
				Spring	Summer	Autumn	

	Control=-28.3±0.22 Drought=-27.9±0.17 F=0.715 P=0.40	Autumn=-28.16±0.21b Spring=-27.81±0.23a Summer=-28.35±0.27b F=3.43 P=0.037	Control=-27.7±0.4 Drought=-27.9±0.3 F=0.12 P=0.73	Control=-28.84±0.39 Drought=27.86±0.350 F=3.46 P=0.73	Control=-28.34±0.34 Drought=-27.99±0.25 F=0.70 P=0.41	
d ¹⁵ N	model <- lme(d15n ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.270 0.448
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=-5.41±0.13 Drought=-4.34±0.19 F=21.5 P<0.0001	Autumn=-5.06±0.18 Spring=-4.86±0.23 Summer=-4.71±0.24 F=1.56 P=0.22	Control=-5.61±0.30 Drought=-4.12±0.25 F=15.0 P=0.00050	Control=-5.55±0.18 Drought=-3.87±0.33 F=20.1 P=0.00010	Control=-5.065±0.183 Drought=-5.048±0.33 F=0.0022 P=0.96	
[C]	model <- lme(c ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.180 0.180
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=50.0±0.3 Drought=49.9±0.18 F=0.048 P=0.82	Autumn=50.8±0.2a Spring=49.8±0.4ab Summer=49.2±0.06b F=10.4 P<0.0001	Control=50.1±0.7 Drought=49.6±0.3 F=0.27 P=0.61	Control=49.3±0.10 Drought=49.1±0.10 F=2.4 P=0.13	Control=50.6±0.3 Drought=51.0±0.3 F=0.88 P=0.36	
[N]	model <- lme(n ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.525 0.584
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=1.654±0.069 Drought=1.662±0.074 F=0.43 P=0.51	Autumn=1.503±0.046b Spring=2.12±0.08a Summer=1.35±0.02c F=27.8 P<0.0001	Control=2.139±0.118 Drought=2.109±0.117 F=0.032 P=0.86	Control=1.357±0.034 Drought=1.337±0.031 F=0.20 P=0.66	Control=1.465±0.077 Drought=1.540±0.051 F=0.664 P=0.42	
[P]	model <- lme(p ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.623 0.649
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=0.134±0.009 Drought=0.123±0.008 F=2.07 P=0.15	Autumn=0.098±0.004b Spring=0.194±0.010a Summer=0.093±0.003b F=83.3	Control=0.196±0.016 Drought=0.192±0.013 F=0.030 P=0.86	Control=0.101±0.004 Drought=0.085±0.002 F=13.2 P=0.0010	Control=0.104±0.006 Drought=0.093±0.002 F=2.94 P=0.097	

			P<0.0001				
[K]	model <- lme(k ~ treatment + season, random=~1 plot, data=dades, method="REML")						0.511
	Treatment	Season	Treatment in each season			0.524	
			Spring	Summer	Autumn		
	Control=1.276±0.057 Drought=1.161±0.051 F=4.58 P=0.035	Autumn=0.893±0.031c Spring=1.540±0.057a Summer=1.223±0.051b F=48.7 P<0.0001	Control=1.566±0.098 Drought=1.514±0.064 F=0.19 P=0.66	Control=1.364±0.054 Drought=1.083±0.071 F=9.94 P=0.0037	Control=0.899±0.051 Drought=0.887±0.037 F=0.035 P=0.85		
[C:N]	model <- lme(cn ~ treatment + season, random=~1 plot, data=dades, method="REML")						0.359
	Treatment	Season	Treatment in each season			0.391	
			Spring	Summer	Autumn		
	Control=32.8±1.6 Drought=31.8±1.0 F=0.018 P=0.89	Autumn=35.5±1.99a Spring=24.4±0.87b Summer=36.9±0.72a F=59.9 P<0.0001	Control=24.2±1.1 Drought=24.6±1.4 F=0.048 P=0.83	Control=37.7±1.1 Drought=37.1±1.0 F=0.062 P=0.80	Control=37.4±3.8 Drought=33.7±1.1 F=0.863 P=0.36		
[C:P]	model <- lme(cp ~ treatment + season, random=~1 plot, data=dades, method="REML")						0.632
	Treatment	Season	Treatment in each season			0.637	
			Spring	Summer	Autumn		
	Control=433±21 Drought=475±23 F=4.80 P=0.031	Autumn=535±17a Spring=284±19b Summer=543±15a F=80.2 P<0.0001	Control=290±34 Drought=277±19 F=0.12 P=0.73	Control=449±17 Drought=587±19 F=12.0 P=0.0016	Control=510±29 Drought=560±15 F=2.40 P=0.12		
[C:K]	model <- lme(ck ~ treatment + season, random=~1 plot, data=dades, method="REML")						0.273
	Treatment	Season	Treatment in each season			0.273	
			Spring	Summer	Autumn		
	Control=44.8±3.2 Drought=47.1±2.1 F=0.0066 P=0.94	Autumn=59.2±2.2a Spring=36.0±4.0b Summer=42.6±2.0b F=9.55 P=0.0002	Control=38.4±4.4 Drought=38.1±7.9 F=0.34 P=0.56	Control=37.04±1.51 Drought=48.2±3.1 F=10.7 P=0.0026	Control=59.0±3.1 Drought=59.4±3.0 F=0.011 P=0.92		
[N:P]	model <- lme(np ~ treatment + season, random=~1 plot, data=dades, method="REML")						0.238
	Treatment	Season	Treatment in each season			0.238	

		Control=13.56±0.63 Drought=14.6±0.43 F=2.68 P=0.11	Autumn=15.81±0.59a Spring=11.65±0.75b Summer=14.76±0.36a F=94.2 P<0.0001	Spring Control=12.11±1.48 Drought=11.19±0.35 F=0.37 P=0.55	Summer Control=13.65±0.44 Drought=15.87±0.43 F=13.1 P=0.0011	Autumn Control=14.90±1.03 Drought=16.71±0.51 F=2.47 P=0.126	
	[N:K]	model <- lme(nk ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.111 0.124
		Treatment	Season	Treatment in each season			
				Spring	Summer	Autumn	
		Control=1.46±0.14 Drought=1.50±0.58 F=1.17 P=0.28	Autumn=1.746±0.077a Spring=1.529±0.187ab Summer=1.163±0.052c F=21.7 P<0.0001	Control=1.655±0.373 Drought=1.403±0.063 F=0.44 P=0.51	Control=1.022±0.051 Drought=1.303±0.078 F=9.07 P=0.0052	Control=1.696±0.109 Drought=1.795±0.111 F=0.41 P=0.53	
	[P:K]	model <- lme(pk ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.375 0.442
		Treatment	Season	Treatment in each season			
				Spring	Summer	Autumn	
		Control=0.108±0.005 Drought=0.106±0.004 F=1.62 P=0.21	Autumn=0.113±0.005a Spring=0.128±0.006a Summer=0.079±0.003c F=20.5 P<0.0001	Control=0.129±0.010 Drought=0.127±0.008 F=0.028 P=0.87	Control=0.075±0.003 Drought=0.083±0.005 F=1.52 P=0.23	Control=0.119±0.007 Drought=0.108±0.006 F=1.52 P=0.23	
<i>Quercus ilex</i>	d ¹³ C	model <- lme(d13c ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.0368 0.316
		Treatment	Season	Treatment in each season			
				Spring	Summer	Autumn	
		Control=-27.8±0.22 Drought=-28.4±0.20 F=4.67 P=0.033	Autumn=-28.22±0.23 Spring=-28.08±0.31 Summer=-28.01±0.24 F=0.221 P=0.80	Control=-27.82±0.42 Drought=-28.33±0.47 F=0.66 P=0.42	Control=-27.55±0.29 Drought=-28.48±0.35 F=4.27 P=0.048	Control=-28.0±0.41 Drought=-28.3±0.2 F=0.28 P=0.60	
	d ¹⁵ N	model <- lme(d15n ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.292 0.562
		Treatment	Season	Treatment in each season			
				Spring	Summer	Autumn	
		Control=-3.45±0.16 Drought=-2.00±0.156 F=62.1	Autumn=-2.611±0.216 Spring=-2.712±0.216 Summer=-2.863±0.263	Control=-3.35±0.26 Drought=-2.08±0.27 F=11.6	Control=-3.74±0.28 Drought=-1.99±0.32 F=16.7	Control=-3.28±0.29 Drought=-1.95±0.23 F=13.2	

	P<0.0001	F=0.63 P=0.53	P=0.0019	P=0.00030	P=0.0010	
[C]	model <- lme(c ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.108 0.108
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=48.6±0.2 Drought=49.7±1.0 F=2.92 P=0.09	Autumn=51.3±1.5 Spring=47.7±0.2 Summer=48.3±0.1 F=0.87 P=0.42	Control=47.8±0.1 Drought=47.6±0.3 F=0.18 P=0.67	Control=48.0±0.1 Drought=48.6±0.2 F=4.7 P=0.038	Control=49.9±0.2 Drought=52.8±2.9 F=0.993 P=0.33	
[N]	model <- lme(n ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.363 0.480
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=1.27±0.03 Drought=1.44±0.05 F=15.9 P<0.0001	Autumn=1.54±0.06 Spring=1.39±0.04 Summer=1.14±0.03 F=41.7 P<0.0001	Control=1.343±0.054 Drought=1.428±0.06 F=1.11 P=0.30	Control=1.056±0.028 Drought=1.217±0.051 F=7.55 P=0.010	Control=1.411±0.051 Drought=1.669±0.099 F=5.40 P=0.027	
[P]	model <- lme(p ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.185 0.241
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=0.120±0.009 Drought=0.126±0.005 F=0.30 P=0.58	Autumn=0.116±0.013 Spring=0.153±0.006 Summer=0.099±0.003 F=11.4 P<0.0001	Control=0.144±0.009 Drought=0.164±0.009 F=2.57 P=0.12	Control=0.095±0.003 Drought=0.103±0.005 F=1.85 P=0.18	Control=0.122±0.026 Drought=0.109±0.004 F=0.25 P=0.62	
[K]	model <- lme(k ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.480 0.565
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=0.879±0.039 Drought=0.777±0.047 F=6.39 P=0.013	Autumn=0.599±0.034 Spring=1.088±0.038 Summer=0.796±0.043 F=49.1 P<0.0001	Control=1.071±0.060 Drought=1.106±0.050 F=0.21 P=0.65	Control=0.914±0.045 Drought=0.678±0.061 F=9.64 P=0.0041	Control=0.635±0.049 Drought=0.546±0.045 F=2.62 P=0.12	
[C:N]	model <- lme(cn ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.352 0.664

	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=39.5±1.0 Drought=38.8±1.1 F=10.6 P=0.0016	Autumn=34.1±1.0 Spring=35.4±1.1 Summer=43.6±1.2 F=11.4 P<0.0001	Control=36.35±1.34 Drought=34.37±1.65 F=0.87 P=0.36	Control=46.0±1.3 Drought=41.1±1.9 F=4.49 P=0.043	Control=36.1±1.5 Drought=32.0±1.0 F=5.00 P=0.033	
[C:P]	model <- lme(cp ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.357 0.365
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=456±18 Drought=428±22 F=0.039 P=0.85	Autumn=496±26 Spring=327±14 Summer=503±17 F=10.7 P<0.0001	Control=351±21 Drought=303±16 F=3.22 P=0.083	Control=515±19 Drought=490±28 F=0.58 P=0.45	Control=500±33 Drought=492±42 F=0.021 P=0.89	
[C:K]	model <- lme(ck ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.553 0.623
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=61.2±3.1 Drought=75.9±4.7 F=11.6 P=0.0010	Autumn=92.7±4.6 Spring=45.7±1.8 Summer=67.3±4.1 F=17.1 P<0.0001	Control=47.0±3.0 Drought=44.5±2.2 F=0.44 P=0.51	Control=54.7±2.9 Drought=79.8±6.4 F=12.8 P=0.0012	Control=82.0±5.3 Drought=103±6.7 F=6.27 P=0.018	
[N:P]	model <- lme(np ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.310 0.323
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=11.66±0.48 Drought=12.3±0.70 F=6.28 P=0.014	Autumn=14.86±0.82 Spring=9.23±0.27 Summer=11.9±0.6 F=29.6 P<0.0001	Control=9.62±0.45 Drought=8.84±0.30 F=2.10 P=0.16	Control=11.4±0.7 Drought=12.4±1.1 F=0.64 P=0.43	Control=13.95±0.95 Drought=15.77±1.33 F=1.24 P=0.27	
[N:K]	model <- lme(nk ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.545 0.669
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=1.617±0.102 Drought=2.24±0.17	Autumn=2.827±0.179 Spring=1.312±0.053	Control=1.299±0.076 Drought=1.325±0.077	Control=1.207±0.075 Drought=2.078±0.222	Control=2.34±0.18 Drought=3.31±0.26	

		F=0.925 P=0.34	Summer=1.642±0.139 F=12.2 P=0.056	F=0.054 P=0.82	F=13.9 P=0.00082	F=9.13 P=0.0051	
	[P:K]	model <- lme(pk ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.140 0.207
		Treatment	Season	Treatment in each season			
				Spring	Summer	Autumn	
		Control=0.150±0.018 Drought=0.179±0.009 F=2.56 P=0.11	Autumn=0.213±0.027 Spring=0.142±0.004 Summer=0.138±0.010 F=7.08 P=0.0014	Control=0.135±0.004 Drought=0.150±0.007 F=3.18 P=0.085	Control=0.107±0.005 Drought=0.169±0.016 F=13.9 P=0.00080	Control=0.208±0.051 Drought=0.219±0.018 F=0.045 P=0.83	

Table S3. Best linear mixed models with season and treatment as independent fixed factors, plot as random factor and the different leaf –litter studied variables. When the interaction between season x treatment was not significant, it was not taken into account in the model. The means \pm S.E. of drought and control plots of different seasons along the studied period and the mean \pm S.E. of control and drought plots in each season are provided with the statistical data. Bold font means statistically significant differences ($P < 0.05$).

Species	Litter variable	Best Model					R ² m R ² c
<i>Arbutus unedo</i>	d ¹³ C	model <- lme(d13c ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.0559 0.207
		Treatment	Season	Treatment in each season			
				Spring	Summer	Autumn	
		Control=-27.2 \pm 0.16 Drought=-27.4 \pm 0.13 F=0.96 P=0.33	Autumn=-27.6 \pm 0.2 Spring=-27.0 \pm 0.1 Summer=-27.4 \pm 0.2 F=2.87 P=0.062	Control=-27.15 \pm 0.23 Drought=-26.9 \pm 0.18 F=0.82 P=0.37	Control=-27.28 \pm 0.39 Drought=-27.43 \pm 0.13 F=0.13 P=0.72	Control=-27.23 \pm 0.19 Drought=-27.89 \pm 0.26 F=2.18 P=0.15	
	d ¹⁵ N	model <- lme(d15n ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.193 0.537
		Treatment	Season	Treatment in each season			
				Spring	Summer	Autumn	
		Control=-3.16\pm0.18 Drought=-2.04\pm0.11 F=32.2 P<0.0001	Autumn=-2.77\pm0.28b Spring=-2.83\pm0.21b Summer=-2.22\pm0.22a F=3.73 P=0.028	Control=-3.60\pm0.22 Drought=-2.06\pm0.25 F=21.3 P<0.0001	Control=-2.61\pm0.36 Drought=-1.83\pm0.23 F=3.35 P=0.077	Control=-3.32\pm0.28 Drought=-2.22\pm0.46 F=4.25 P=0.048	
	[C]	model <- lme(c ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.137 0.137
		Treatment	Season	Treatment in each season			
				Spring	Summer	Autumn	
		Control=51.3 \pm 1.1 Drought=53.9 \pm 2.0 F=1.48 P=0.23	Autumn=58.0\pm3.1a Spring=49.7\pm0.2b Summer=50.0\pm0.2ab F=6.80 P=0.0018	Control=50.1\pm0.2 Drought=49.2\pm0.2 F=9.0 P=0.0054	Control=49.8 \pm 0.2 Drought=50.3 \pm 0.3 F=1.79 P=0.191	Control=54.0 \pm 3.0 Drought=62.1 \pm 5.4 F=1.66 P=0.21	
[N]	model <- lme(n ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.307 0.331	
	Treatment	Season	Treatment in each season				
			Spring	Summer	Autumn		

	Control=0.47±0.02 Drought=0.53±0.029 F=3.74 P=0.056	Autumn=0.629±0.040b Spring=0.474±0.021a Summer=0.400±0.012b F=19.9 P<0.0001	Control=0.429±0.020 Drought=0.519±0.034 F=5.13 P=0.031	Control=0.389±0.016 Drought=0.411±0.018 F=0.794 P=0.38	Control=0.597±0.045 Drought=0.661±0.066 F=0.64 P=0.43	
[P]	model <- lme(p ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.00996 0.261
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=0.066±0.007 Drought=0.072±0.005 F=0.42 P=0.52	Autumn=0.074±0.008 Spring=0.066±0.007 Summer=0.067±0.009 F=0.43 P=0.65	Control=0.059±0.010 Drought=0.072±0.009 F=0.86 P=0.36	Control=0.072±0.016 Drought=0.063±0.007 F=0.31 P=0.58	Control=0.068±0.011 Drought=0.081±0.011 F=0.65 P=0.43	
[K]	model <- lme(k ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.0196 0.199
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=0.420±0.020 Drought=0.443±0.023 F=0.69 P=0.41	Autumn=0.424±0.022 Spring=0.414±0.025 Summer=0.456±0.030 F=0.82 P=0.44	Control=0.405±0.039 Drought=0.423±0.034 F=0.11 P=0.74	Control=0.467±0.032 Drought=0.444±0.052 F=0.14 P=0.72	Control=0.387±0.031 Drought=0.461±0.029 F=3.04 P=0.092	
[C:N]	model <- lme(cn ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.367 0.405
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=115±3.5 Drought=107±3.2 F=0.061 P=0.81	Autumn=95.8±3.2b Spring=110±4b Summer=128±3a F=15.7 P<0.0001	Control=120±5 Drought=100±6 F=6.90 P=0.013	Control=130±4 Drought=125±4 F=0.814 P=0.37	Control=95.0±5.2 Drought=96.6±3.7 F=0.062 P=0.81	
[C:P]	model <- lme(cp ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.0401 0.371
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=1311±126 Drought=1036±129 F=3.28 P=0.073	Autumn=1272±204 Spring=995±87 Summer=1254±159 F=1.39	Control=1166±143 Drought=823±82 F=4.32 P=0.046	Control=1569±287 Drought=93992± F=4.37 P=0.045	Control=1199±200 Drought=1345±363 F=0.125 P=0.73	

			$P=0.25$					
	[C:K]	model <- lme(ck ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.0312	0.211
		Treatment	Season	Treatment in each season				
				Spring	Summer	Autumn		
		Control=138±9 Drought=138±9 F=0.0016 P=0.97	Autumn=150±12 Spring=139±11 Summer=124±8 F=1.88 P=0.16	Control=145±16 Drought=133±15 F=0.26 P=0.62	Control=112±6 Drought=136±14 F=2.38 P=0.13	Control=156±18 Drought=145±17 F=0.189 P=0.67		
	[N:P]	model <- lme(np ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.0574	0.413
		Treatment	Season	Treatment in each season				
				Spring	Summer	Autumn		
		Control=11.4±1 Drought=9.78±1.2 F=1.63 P=0.20	Autumn=13.1±1.9a Spring=9.11±0.72b Summer=9.59±1.11b F=3.83 P=0.025	Control=10.0±1.23 Drought=8.18±0.71 F=1.70 P=0.20	Control=11.52±2.0 Drought=7.65±0.78 F=3.25 P=0.082	Control=12.7±1.9 Drought=13.5±3.4 F=0.041 P=0.84		
	[N:K]	model <- lme(nk ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.123	0.239
		Treatment	Season	Treatment in each season				
				Spring	Summer	Autumn		
		Control=1.27±0.10 Drought=1.37±0.10 F=0.62 P=0.43	Autumn=1.62±0.14a Spring=1.31±0.11ab Summer=1.02±0.09b F=7.37 P=0.0011	Control=1.20±0.12 Drought=1.43±0.19 F=1.10 P=0.30	Control=0.898±0.088 Drought=1.14±0.15 F=1.91 P=0.18	Control=1.71±0.22 Drought=1.53±0.19 F=0.36 P=0.55		
	[P:K]	model <- lme(pk ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.00620	0.178
		Treatment	Season	Treatment in each season				
				Spring	Summer	Autumn		
		Control=0.163±0.017 Drought=0.170±0.012 F=0.11 P=0.74	Autumn=0.175±0.017 Spring=0.168±0.016 Summer=0.157±0.020 F=0.30 P=0.74	Control=0.152±0.021 Drought=0.183±0.023 F=1.0 P=0.33	Control=0.161±0.038 Drought=0.153±0.014 F=0.034 P=0.85	Control=0.177±0.026 Drought=0.173±0.024 F=0.016 P=0.90		
<i>Phillyrea latifolia</i>	d ¹³ C	model <- lme(d13c ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.169	0.533
		Treatment	Season	Treatment in each season				

		Control=-28.5±0.15 Drought=-28.2±0.1 F=5.67 P=0.019	Autumn=-27.9±0.1a Spring=-28.7±0.2b Summer=-28.5±0.1b F=14.4 P<0.0001	Spring Control=-28.9±0.3 Drought=-28.5±0.2 F=1.42 P=0.24	Summer Control=-28.7±0.2 Drought=-28.3±0.1 F=1.59 P=0.22	Autumn Control=-28.0±0.1 Drought=-27.8±0.2 F=0.58 P=0.45	
d ¹⁵ N	model <- lme(d15n ~ treatment + season, random=~1 plot, data=dades, method="REML")						0.318 0.494
	Treatment	Season	Treatment in each season				
			Spring	Summer	Autumn		
	Control=-4.58±0.16 Drought=-3.73±0.15 F=23.3 P<0.0001	Autumn=-3.42±0.15a Spring=-4.64±0.22b Summer=-4.39±0.19b F=18.0 P<0.0001	Control=-5.22±0.25 Drought=-4.05±0.29 F=9.24 P=0.0049	Control=-4.89±0.17 Drought=-3.90±0.29 F=9.03 P=0.0052	Control=-3.62±0.25 Drought=-3.22±0.16 F=1.70 P=0.20		
[C]	model <- lme(c ~ treatment*season, random=~1 plot, data=dades, method="REML")						0.157 0.157
	Treatment	Season	Treatment in each season				
			Spring	Summer	Autumn		
	Control=49.0±0.21 Drought=49.1±0.12 F=0.08 P=0.78	Autumn=49.6±0.2a Spring=48.7±0.3b Summer=48.8±0.1b F=5.92 P=0.0039	Control=48.3±0.5 Drought=49.1±0.2 F=2.35 P=0.14	Control=48.9±0.2 Drought=48.7±0.2 F=0.9 P=0.35	Control=49.8±0.3 Drought=49.4±0.2 F=1.07 P=0.31		
[N]	model <- lme(n ~ treatment + season, random=~1 plot, data=dades, method="REML")						0.733 0.735
	Treatment	Season	Treatment in each season				
			Spring	Summer	Autumn		
	Control=0.745±0.025 Drought=0.752±0.026 F=0.12 P=0.73	Autumn=0.958±0.022a Spring=0.667±0.013b Summer=0.620±0.011b F=131 P<0.0001	Control=0.685±0.020 Drought=0.648±0.015 F=2.16 P=0.15	Control=0.612±0.012 Drought=0.627±0.017 F=0.49 P=0.49	Control=0.938±0.038 Drought=0.979±0.024 F=0.84 P=0.37		
[P]	model <- lme(p ~ treatment + season, random=~1 plot, data=dades, method="REML")						0.528 0.598
	Treatment	Season	Treatment in each season				
			Spring	Summer	Autumn		
	Control=0.038±0.002 Drought=0.038±0.02 F=0.0022	Autumn=0.056±0.003a Spring=0.030±0.0008b Summer=0.029±0.0007b	Control=0.030±0.001 Drought=0.030±0.001 F=0.075	Control=0.028±0.0009 Drought=0.029±0.001 F=0.20	Control=0.056±0.005 Drought=0.056±0.005 F=0.0003		

	$P=0.96$	F=62.4 P<0.0001	$P=0.79$	$P=0.66$	$P=0.99$	
[K]	model <- lme(k ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.473 0.625
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=0.504±0.026 Drought=0.443±0.025 F=0.49 P=0.49	Autumn=0.324±0.013b Spring=0.592±0.033a Summer=0.506±0.025a F=35.0 P<0.0001	Control=0.592±0.046 Drought=0.592±0.049 F=0.001 P=0.99	Control=0.609±0.018 Drought=0.402±0.029 F=35.7 P<0.0001	Control=0.310±0.017 Drought=0.338±0.020 F=1.12 P=0.30	
[C:N]	model <- lme(cn ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.736 0.753
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=68.6±1.8 Drought=68.6±2.1 F=1.76 P=0.19	Autumn=52.6±1.2b Spring=73.8±1.4a Summer=79.4±1.3a F=60.8 P<0.0001	Control=71.2±1.7 Drought=76.4±2.0 F=3.94 P=0.057	Control=80.4±1.4 Drought=78.5±2.1 F=0.53 P=0.47	Control=54.2±1.9 Drought=51.0±1.3 F=1.93 P=0.17	
[C:P]	model <- lme(cp ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.573 0.622
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=1465±62 Drought=1458±62 F=0.015 P=0.90	Autumn=1003±63b Spring=1656±42a Summer=1726±39a F=72.1 P<0.0001	Control=1637±65 Drought=1674±56 F=0.18 P=0.67	Control=1752±55 Drought=1700±56 F=0.45 P=0.51	Control=1005±85 Drought=1001±95 F=0.001 P=0.98	
[C:K]	model <- lme(ck ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.416 0.529
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=114±7 Drought=126±6 F=2.33 P=0.13	Autumn=161±7a Spring=90.3±4.9b Summer=107±7b F=42.1 P<0.0001	Control=89.8±7.3 Drought=90.9±6.8 F=0.014 P=0.87	Control=81.9±3.5 Drought=133±11.1 F=19.2 P=0.00013	Control=169±11 Drought=153±8 F=1.43 P=0.24	
[N:P]	model <- lme(np ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.0936 0.259

		Treatment	Season	Treatment in each season			
		Control=21.3±0.8 Drought=21.0±0.6 F=0.13 P=0.72	Autumn=19.1±1.2b Spring=22.5±0.5a Summer=21.8±0.4ab F=5.94 P=0.0038	Control=23.0±0.9 Drought=22.0±0.6 F=0.96 P=0.33	Control=21.8±0.6 Drought=21.7±0.4 F=0.058 P=0.81	Control=18.9±2.0 Drought=19.3±1.4 F=0.02 P=0.89	
	[N:K]	model <- lme(nk ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.643 0.689
		Treatment	Season	Treatment in each season			
		Control=1.84±0.18 Drought=1.97±0.13 F=1.02 P=0.32	Autumn=3.12±0.2a Spring=1.24±0.07b Summer=1.37±0.10b F=61.1 P<0.0001	Control=1.28±0.12 Drought=1.19±0.09 F=0.31 P=0.58	Control=1.02±0.04 Drought=1.72±0.16 F=17.9 P=0.00020	Control=3.23±0.30 Drought=3.01±0.1 F=0.44 P=0.51	
	[P:K]	model <- lme(pk ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.648 0.648
		Treatment	Season	Treatment in each season			
		Control=0.086±0.011 Drought=0.101±0.009 F=0.30 P=0.58	Autumn=0.178±0.012a Spring=0.055±0.003b Summer=0.063±0.005b F=81.4 P<0.0001	Control=0.055±0.004 Drought=0.055±0.004 F=0.001 P=0.99	Control=0.047±0.002 Drought=0.079±0.007 F=17.0 P=0.00027	Control=0.187±0.019 Drought=0.170±0.015 F=0.52 P=0.47	
<i>Quercus ilex</i>	d ¹³ C	model <- lme(d13c ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.0949 0.338
		Treatment	Season	Treatment in each season			
		Control=-28.0±0.1 Drought=-28.2±0.1 F=0.08 P=0.88	Autumn=-28.5±0.2b Spring=-28.0±0.1ab Summer=-27.9±0.1a F=14.4 P<0.0001	Control=-27.8±0.1 Drought=-28.3±0.2 F=3.55 P=0.069	Control=-27.8±0.1 Drought=-28.0±0.2 F=1.78 P=0.19	Control=-28.5±0.3 Drought=-28.4±0.3 F=0.09 P=0.76	
	d ¹⁵ N	model <- lme(d15n ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.319 0.480
		Treatment	Season	Treatment in each season			
		Control=-3.48±0.10 Drought=-2.40±0.12	Autumn=-2.86±0.19a Spring=-3.12±0.14b	Control=-3.67±0.12 Drought=-2.57±0.15	Control=-3.56±0.17 Drought=-2.13±0.17	Control=-3.21±0.23 Drought=-2.50±0.20	

	F=23.7 P<0.0001	Summer=-2.84±0.18a F=18.0 P<0.0001	F=32.2 P<0.0001	F=34.9 P=0.018	F=3.99 P=0.044	
[C]	model <- lme(c ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.153
	Treatment	Season	Treatment in each season			0.153
			Spring	Summer	Autumn	
	Control=49.4±0.9 Drought=51.8±1.8 F=0.09 P=0.78	Autumn=54.4±2.6a Spring=49.4±1.4ab Summer=48.1±0.2b F=5.92 P=0.0039	Control=50.4±2.8 Drought=48.3±0.4 F=0.56 P=0.46	Control=48.5±0.1 Drought=47.7±0.3 F=6.22 P=0.018	Control=49.3±0.2 Drought=59.4±5.06 F=3.96 P=0.056	
[N]	model <- lme(n ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.402
	Treatment	Season	Treatment in each season			0.496
			Spring	Summer	Autumn	
	Control=0.908±0.026 Drought=1.032±0.037 F=0.12 P=0.73	Autumn=1.11±0.04a Spring=1.01±0.04a Summer=0.791±0.016b F=131 P<0.0001	Control=0.965±0.049 Drought=1.06±0.05 F=1.74 P=0.20	Control=0.757±0.023 Drought=0.825±0.021 F=4.66 P=0.039	Control=1.00±0.03 Drought=1.21±0.07 F=7.89 P=0.0087	
[P]	model <- lme(p ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.128
	Treatment	Season	Treatment in each season			0.128
			Spring	Summer	Autumn	
	Control=0.057±0.004 Drought=0.066±0.002 F=0.0021 P=0.96	Autumn=0.059±0.002b Spring=0.070±0.005a Summer=0.055±0.003b F=64.4 P<0.0001	Control=0.069±0.009 Drought=0.070±0.004 F=0.014 P=0.91	Control=0.046±0.003 Drought=0.065±0.003 F=21.7 P<0.0001	Control=0.057±0.003 Drought=0.061±0.003 F=0.80 P=0.38	
[K]	model <- lme(k ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.165
	Treatment	Season	Treatment in each season			0.177
			Spring	Summer	Autumn	
	Control=0.382±0.030 Drought=0.294±0.012 F=0.49 P=0.49	Autumn=0.268±0.014b Spring=0.378±0.043a Summer=0.369±0.017ab F=35.0 P<0.0001	Control=0.429±0.082 Drought=0.328±0.023 F=1.42 P=0.24	Control=0.441±0.015 Drought=0.299±0.014 F=47.3 P<0.0001	Control=0.278±0.019 Drought=0.258±0.020 F=0.50 P=0.48	
[C:N]	model <- lme(cn ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.344

						0.426
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=56.0±1.5 Drought=51.5±1.4 F=1.76 P=0.19	Autumn=49.4±1.4b Spring=50.3±1.8b Summer=61.6±1.3a F=60.8 P<0.0001	Control=53.2±2.4 Drought=47.4±2.5 F=2.90 P=0.099	Control=64.9±1.8 Drought=58.3±1.3 F=8.37 P=0.0070	Control=50.0±1.6 Drought=48.7±2.4 F=0.18 P=0.67	
[C:P]	model <- lme(cp ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.241 0.268
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=947±40 Drought=835±42 F=0.015 P=0.90	Autumn=958±55a Spring=770±40b Summer=944±52a F=72.1 P<0.0001	Control=812±64 Drought=727±49 F=1.13 P=0.30	Control=1131±73 Drought=758±32 F=22.0 P<0.0001	Control=897±45 Drought=1019±99 F=1.26 P=0.27	
[C:K]	model <- lme(ck ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.303 0.303
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=152±9 Drought=188±10 F=2.33 P=0.13	Autumn=216±12a Spring=156±11b Summer=139±6b F=10.8 P=0.0001	Control=153±19 Drought=159±11 F=0.077 P=0.78	Control=112±4 Drought=166±8 F=36.9 P<0.0001	Control=192±14 Drought=240±21 F=3.53 P=0.070	
[N:P]	model <- lme(np ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.295 0.379
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=16.9±0.5 Drought=16.3±0.7 F=0.13 P=0.72	Autumn=19.2±0.7a Spring=15.4±0.6b Summer=15.2±0.6b F=5.94 P=0.0038	Control=15.5±1.1 Drought=15.3±0.7 F=0.014 P=0.91	Control=17.3±0.8 Drought=13.0±0.5 F=18.6 P=0.00016	Control=18.0±0.8 Drought=20.4±1.2 F=2.73 P=0.11	
[N:K]	model <- lme(nk ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.397 0.446
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=2.91±0.22	Autumn=4.43±0.26a	Control=3.04±0.42	Control=1.75±0.09	Control=3.92±0.34	

		Drought=3.76±0.2 F=1.02 P=0.32	Spring=3.28±0.26b Summer=2.30±0.13c F=61.1 P<0.0001	Drought=3.51±0.32 F=0.78 P=0.38	Drought=2.84±0.12 F=50.8 P<0.0001	Drought=4.94±0.35 F=4.39 P=0.045		
	[P:K]	model <- lme(pk ~ treatment + season, random=~1 plot, data=dades, method="REML")						0.274 0.300
		Treatment	Season	Treatment in each season				
				Spring	Summer	Autumn		
		Control=0.171±0.011 Drought=0.236±0.011 F=1.35 P=0.25	Autumn=0.239±0.016a Spring=0.208±0.013ab Summer=0.164±0.014c F=54.9 P<0.0001	Control=0.187±0.017 Drought=0.229±0.019 F=2.72 P=0.11	Control=0.105±0.007 Drought=0.224±0.014 F=56.3 P<0.0001	Control=0.223±0.020 Drought=0.256±0.024 F=1.16 P=0.29		

Table S4. Best linear mixed models with season and treatment as independent fixed factors, plot as random factor and the different soil studied variables. When the interaction between season x treatment was not significant, it was not taken into account in the model. The means \pm S.E. of drought and control plots of different seasons along the studied period and the mean \pm S.E. of control and drought plots in each season are provided with the statistical data. Bold font means statistically significant differences ($P < 0.05$).

Soil variable	Best Model					R ² m R ² c
d ¹³ C	model <- lme(d13c ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.0448 0.531
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=-26.2±0.07 Drought=-25.9±0.06 F=9.48 P=0.0027	Autumn=-26.1±0.08 Spring=-26.1±0.07 Summer=-26.0±0.08 F=0.95 P=0.39	Control=-26.1±0.1 Drought=-26.1±0.1 F=0.0001 P=0.99	Control=-26.2±0.1 Drought=-25.7±0.1 F=5.32 P=0.028	Control=-26.3±0.1 Drought=-26.0±0.1 F=3.5 P=0.073	
d ¹⁵ N	model <- lme(d15n ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.239 0.274
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=-0.206±0.134 Drought=0.925±0.136 F=38.5 P<0.0001	Autumn=0.194±0.193 Spring=0.326±0.189 Summer=0.559±0.181 F=1.37 P=0.26	Control=0.019±0.260 Drought=1.20±0.26 F=9.59 P=0.0042	Control=-0.419±0.227 Drought=1.32±0.19 F=27.5 P<0.0001	Control=-0.313±0.226 Drought=0.543±0.269 F=5.91 P=0.021	

[C]	model <- lme(c ~ treatment + season, random=~1 plot, data=dades, method="REML")				0.157	
	Treatment	Season	Treatment in each season			0.235
			Spring	Summer	Autumn	
	Control=7.65±0.37 Drought=5.50±0.28 F=23.7 P<0.0001	Autumn=6.95±0.42 Spring=6.25±0.46 Summer=6.54±0.43 F=0.849 P=0.43	Control=7.56±0.50 Drought=5.55±0.44 F=4.20 P=0.045	Control=8.18±0.55 Drought=5.05±0.50 F=15.1 P=0.00053	Control=7.53±0.76 Drought=6.09±0.61 F=2.17 P=0.15	
[N]	model <- lme(n ~ treatment + season, random=~1 plot, data=dades, method="REML")				0.112	
	Treatment	Season	Treatment in each season			0.291
			Spring	Summer	Autumn	
	Control=0.482±0.022 Drought=0.378±0.018 F=41.7 P<0.0001	Spring=0.443±0.027 Summer=0.445±0.024 Autumn=0.401±0.026 F=0.981 P=0.38	Control=0.492±0.047 Drought=0.376±0.028 F=3.26 P=0.081	Control=0.508±0.029 Drought=0.372±0.038 F=8.04 P=0.0081	Control=0.456±0.042 Drought=0.411±0.039 F=0.63 P=0.43	
[P]	model <- lme(p ~ treatment + season, random=~1 plot, data=dades, method="REML")				0.0611	
	Treatment	Season	Treatment in each season			0.0792
			Spring	Summer	Autumn	
	Control=0.058±0.001 Drought=0.056±0.001 F=1.51 P=0.22	Autumn=0.059±0.001 Spring=0.057±0.002 Summer=0.054±0.002 F=0.16 P=0.85	Control=0.058±0.003 Drought=0.049±0.002 F=1.64 P=0.24	Control=0.057±0.002 Drought=0.052±0.002 F=2.92 P=0.098	Control=0.059±0.003 Drought=0.063±0.002 F=0.98 P=0.33	
[K]	model <- lme(k ~ treatment + season, random=~1 plot, data=dades, method="REML")				0.0337	
	Treatment	Season	Treatment in each season			0.1618
			Spring	Summer	Autumn	
	Control=1.21±0.02 Drought=1.26±0.02 F=3.25 P=0.07	Spring=1.24±0.02 Summer=1.25±0.02 Autumn=1.22±0.02 F=0.84 P=0.43	Control=1.22±0.034 Drought=1.31±0.038 F=3.15 P=0.086	Control=1.21±0.03 Drought=1.25±0.04 F=0.47 P=0.50	Control=1.22±0.04 Drought=1.23±0.04 F=0.015 P=0.90	
[C:N]	model <- lme(cn ~ treatment + season, random=~1 plot, data=dades, method="REML")				0.178	
	Treatment	Season	Treatment in each season			0.599
			Spring	Summer	Autumn	

	Control=15.8±0.2 Drought=14.5±0.2 F=17.0 P=0.0001	Spring=14.7±0.27 Summer=15.5±0.23 Autumn=15.3±0.3 F=1.31 P=0.28	Control=14.5±0.4 Drought=14.7±0.3 F=1.88 P=0.18	Control=16.1±0.4 Drought=13.7±0.5 F=15.7 P=0.00043	Control=16.3±0.40 Drought=14.8±0.25 F=10.4 P=0.0031	
[C:P]	model <- lme(cp ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.218 0.299
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=129±5 Drought=98.1±4.0 F=27.0 P<0.0001	Spring=117±5 Summer=118±7 Autumn=106±6 F=1.62 P=0.20	Control=125±9 Drought=111±6 F=1.16 P=0.29	Control=143±8 Drought=96.3±0.5 F=14.5 P=0.00065	Control=124±8 Drought=96.7±8.6 F=5.42 P=0.027	
[C:K]	model <- lme(ck ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.201 0.254
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=6.38±0.31 Drought=4.38±0.21 F=31.1 P<0.0001	Spring=5.29±0.35 Summer=5.75±0.34 Autumn=5.10±0.38 F=1.14 P=0.32	Control=6.29±0.58 Drought=4.32±0.40 F=5.90 P=0.021	Control=6.85±0.46 Drought=4.02±0.32 F=19.2 P=0.00014	Control=6.28±0.66 Drought=4.92±0.43 F=2.98 P=0.095	
[N:P]	model <- lme(np ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.18284 62 0.377 3881
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=8.14±0.28 Drought=6.75±0.26 F=1.80 P=0.18	Spring=7.98±0.33 Summer=7.53±0.38 Autumn=6.83±0.31 F=0.76 P=0.47	Control=8.12±0.58 Drought=7.55±0.33 F=0.52 P=0.48	Control=8.88±0.44 Drought=7.13±0.69 F=5.02 P=0.033	Control=7.57±0.42 Drought=6.50±0.54 F=2.41 P=0.13	
[N:K]	model <- lme(nk ~ treatment + season, random=~1 plot, data=dades, method="REML")					0.15146 69 0.308 5485
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=0.403±0.019 Drought=0.301±0.013 F=23.6 P<0.0001	Spring=0.359±0.023ab Summer=0.369±0.020a Autumn=0.328±0.021b F=1.33	Control=0.411±0.039 Drought=0.291±0.023 F=5.08 P=0.032	Control=0.427±0.027 Drought=0.297±0.026 F=10.6 P=0.0028	Control=0.381±0.037 Drought=0.332±0.028 F=1.13 P=0.30	

		$P=0.40$				
[P:K]	model <- lme(pk ~ treatment*season, random=~1 plot, data=dades, method="REML")					0.16 0.21
	Treatment	Season	Treatment in each season			
			Spring	Summer	Autumn	
	Control=0.049±0.001 Drought=0.045±0.001 F=2.86 P=0.094	Spring=0.313±0.404 Summer=0.328±0.410 Autumn=0.284±0.371 F=0.13 P=0.88	Control=0.049±0.003 Drought=0.038±0.002 F=7.87 P=0.0087	Control=0.048±0.002 Drought=0.042±0.002 F=5.10 P=0.031	Control=0.049±0.003 Drought=0.053±0.002 F=0.60 P=0.44	

Table S4. Statistical contribution and significance of the foliar variables used as independent variables in the general discriminant analysis with the different leaf samples of different treatments and years as categorical groups (Figure 3).

Variable	Wilk's Lambda	F	P-value
C%	0.823	3.43	<0.0001
N%	0.765	4.93	<0.0001
K	0.824	3.42	<0.0001
P	0.901	1.76	0.033
Ca	0.905	1.68	0.046
Mg	0.871	2.38	0.0019
C:N	0.785	4.37	<0.0001
N:P	0.849	2.85	0.00019
C:K	0.716	6.35	<0.0001
C:P	0.851	2.81	0.00023
N:K	0.697	6.96	<0.0001
N:Mg	0.789	4.29	<0.0001
N:Ca	0.905	1.68	0.046
P:Mg	0.850	2.82	0.00021
P:Ca	0.897	1.84	0.024
Mg:Ca	0.884	2.09	0.0076

Table S5. Squared Mahalanobis distances among all groups in the GDA analysis of the leaf concentrations of the three dominant species and pairwise ratios as variables and the samples of each species in the control and drought plots collected in 1999, 2004 and 2014 as grouping factors. The unique grouping factors without significant squared Mahalanobis distances are highlighted in red.

Species	Year																
	1999					2004						2014					
	<i>Arbutus unedo</i> Drought	<i>Phillyrea latifolia</i> Control	<i>Phillyrea latifolia</i> Drought	<i>Quercus ilex</i> Control	<i>Quercus ilex</i> Drought	<i>Arbutus unedo</i> Control	<i>Arbutus unedo</i> Drought	<i>Phillyrea latifolia</i> Control	<i>Phillyrea latifolia</i> Drought	<i>Quercus ilex</i> Control	<i>Quercus ilex</i> Drought	<i>Arbutus unedo</i> Control	<i>Arbutus unedo</i> Drought	<i>Phillyrea latifolia</i> Control	<i>Phillyrea latifolia</i> Drought	<i>Quercus ilex</i> Control	<i>Quercus ilex</i> Drought
<i>Arbutus unedo</i> Control 1999	M=7.19 F=1.14 P=0.32	M=11.3 F=2.68 P=0.0006	M=16.7 F=3.95 P<0.0001	M=22.9 F=5.42 P<0.0001	M=35.3 F=8.00 P<0.0001	M=21.1 F=7.04 P<0.0001	M=29.5 F=9.97 P<0.0001	M=12.8 F=4.86 P<0.0001	M=9.22 F=3.49 P=0.0001	M=12.3 F=4.68 P<0.0001	M=12.8 F=4.82 P<0.0001	M=13.1 F=4.12 P<0.0001	M=8.25 F=2.61 P=0.00084	M=22.0 F=6.95 P<0.0001	M=21.4 F=6.75 P<0.0001	M=7.77 F=2.45 P=0.0017	M=14.0 F=4.43 P<0.0001
<i>Arbutus unedo</i> Drought 1999		M=18.4 F=2.91 P=0.0002	M=25.3 F=3.99 P<0.0001	M=34.9 F=5.51 P<0.0001	M=43.3 F=6.53 P<0.0001	M=26.5 F=5.19 P<0.0001	M=32.0 F=6.31 P<0.0001	M=19.5 F=4.11 P<0.0001	M=16.8 F=3.49 P<0.0001	M=20.6 F=4.34 P<0.0001	M=19.6 F=4.10 P<0.0001	M=22.3 F=4.23 P<0.0001	M=19.1 F=3.61 P<0.0001	M=261 F=4.83 P<0.0001	M=279 F=6.28 P<0.0001	M=19.6 F=3.71 P<0.0001	M=29.3 F=5.55 P<0.0001
<i>Phillyrea latifolia</i> Control 1999			M=1.62 F=0.383 P=0.98	M=7.10 F=1.68 P=0.049	M=16.6 F=3.68 P<0.0001	M=20.0 F=6.69 P<0.0001	M=31.5 F=10.7 P<0.0001	M=8.59 F=3.26 P=0.0003	M=6.59 F=2.50 P=0.004	M=4.82 F=1.84 P=0.028	M=10.3 F=3.90 P<0.0001	M=12.9 F=4.07 P<0.0001	M=12.2 F=3.84 P<0.0001	M=11.6 F=3.66 P<0.0001	M=10.9 F=3.43 P=0.0001	M=7.26 F=2.29 P=0.0036	M=12.7 F=4.02 P<0.0001
<i>Phillyrea latifolia</i> Drought 1999			M=4.38 F=0.490 P=0.22	M=15.2 F=3.36 P<0.0001	M=22.9 F=7.60 P<0.0001	M=34.7 F=11.8 P<0.0001	M=10.1 F=3.82 P<0.0001	M=9.09 F=3.45 P<0.0001	M=5.12 F=1.94 P=0.017	M=12.3 F=4.63 P<0.0001	M=16.9 F=5.33 P<0.0001	M=16.2 F=5.12 P<0.0001	M=14.2 F=4.48 P<0.0001	M=12.4 F=3.93 P<0.0001	M=9.91 F=3.13 P<0.0001	M=14.2 F=4.48 P<0.0001	
<i>Quercus ilex</i> Control 1999				M=11.9 F=2.64 P=0.00073	M=30.9 F=10.3 P<0.0001	M=43.1 F=14.6 P<0.0001	M=18.0 F=6.81 P<0.0001	M=16.7 F=6.31 P<0.0001	M=9.58 F=3.63 P<0.0001	M=15.8 F=5.95 P<0.0001	M=26.3 F=8.32 P<0.0001	M=23.2 F=7.34 P<0.0001	M=26.4 F=8.35 P<0.0001	M=21.0 F=6.64 P<0.0001	M=11.0 F=3.48 P<0.0001	11.9 F=3.76 P<0.0001	
<i>Quercus ilex</i> Drought 1999					M=40.6 F=12.3 P<0.0001	M=51.0 F=15.7 P<0.0001	M=27.6 F=9.35 P<0.0001	M=26.4 F=8.93 P<0.0001	M=17.1 F=5.81 P<0.0001	M=23.1 F=7.82 P<0.0001	M=37.5 F=10.8 P<0.0001	M=35.9 F=10.3 P<0.0001	M=34.0 F=9.81 P<0.0001	M=31.7 F=9.14 P<0.0001	M=27.9 F=6.04 P<0.0001	M=27.4 F=7.90 P<0.0001	
<i>Arbutus unedo</i> Control 2004							M=3.61 F=2.08 P=0.0094	M=27.4 F=7.90 P<0.0001	M=27.4 F=7.90 P<0.0001	M=27.4 F=7.90 P<0.0001	M=27.4 F=7.90 P<0.0001	M=27.4 F=7.90 P<0.0001	M=27.4 F=7.90 P<0.0001	M=27.4 F=7.90 P<0.0001	M=27.4 F=7.90 P<0.0001	M=27.4 F=7.90 P<0.0001	
<i>Arbutus unedo</i> Drought 2004								M=15.5 F=11.6 P<0.0001	M=14.9 F=10.9 P<0.0001	M=25.9 F=18.9 P<0.0001	M=21.8 F=15.7 P<0.0001	M=22.3 F=11.7 P<0.0001	M=22.6 F=11.9 P<0.0001	M=34.4 F=18.0 P<0.0001	M=35.5 F=18.7 P<0.0001	M=30.5 F=16.1 P<0.0001	M=37.8 F=19.9 P<0.0001
<i>Phillyrea latifolia</i> Control 2004									M=1.21 F=1.15 P=0.31	M=5.50 F=5.21 P<0.0001	M=8.31 F=7.75 P<0.0001	M=10.4 F=6.56 P<0.0001	M=10.04 F=6.34 P<0.0001	M=17.7 F=11.2 P<0.0001	M=16.7 F=10.5 P<0.0001	M=9.88 F=6.24 P<0.0001	M=16.3 F=10.3 P<0.0001
<i>Phillyrea latifolia</i> Drought 2004										M=5.31 F=5.03 P<0.0001	M=6.38 F=5.95 P<0.0001	M=6.65 F=4.20 P<0.0001	M=5.97 F=3.77 P<0.0001	M=14.9 F=9.39 P<0.0001	M=14.1 F=8.93 P<0.0001	M=6.91 F=4.37 P<0.0001	M=13.4 F=8.47 P<0.0001

<i>Quercus ilex</i> Control 2004		M=4.75 F=4.43 P<0.0001	M=115.0 F=9.39 P<0.0001	M=13.6 F=8.56 P<0.0001	M=17.6 F=11.1 P<0.0001	M=17.1 F=10.8 P<0.0001	M=10.7 F=6.79 P<0.0001	M=14.5 F=9.17 P<0.0001
<i>Quercus ilex</i> Drought 2004			M=14.1 F=8.82 P<0.0001	M=12.2 F=7.62 P<0.0001	M=24.4 F=15.3 P<0.0001	M=22.5 F=14.1 P<0.0001	M=10.5 F=6.63 P<0.0001	M=13.2 F=8.27 P<0.0001
<i>Arbutus unedo</i> Control 2014				M=1.53 F=0.725 P=0.77	M=7.29 F=3.45 P<0.0001	M=6.86 F=3.25 P<0.0001	M=9.45 F=4.48 P<0.0001	M=13.8 F=6.56 P<0.0001
<i>Arbutus unedo</i> Drought					M=11.8 F=5.59 P<0.0001	M=10.7 F=5.09 P<0.0001	M=6.25 F=2.96 P<0.0001	M=9.75 F=4.62 P<0.0001
<i>Phillyrea latifolia</i> Control 2014						M=2.22 F=1.05 P=0.40	M=20.0 F=9.47 P<0.0001	M=25.4 F=12.1 P<0.0001
<i>Phillyrea latifolia</i> Drought 2014							M=14.6 F=6.92 P<0.0001	M=17.1 F=8.12 P<0.0001
<i>Quercus ilex</i> Control 2014								M=3.03 F=1.44 P=0.12

Table S6. Increases in leaf litter carbon, nitrogen, phosphorus and potassium stocks (Mean \pm S.E., kg ha⁻¹) after 5 and 15 years of experiment beginning.

Species	Treatments	Increases of stocks in leaf litter (kg ha ⁻¹)							
		1999-2004				1999-2014			
		Carbon	Nitrogen	Phosphorus	Potassium	Carbon	Nitrogen	Phosphorus	Potassium
<i>Quercus ilex</i>	Control	121 \pm 41	-0.922 \pm 1.255	0.115 \pm 0.097	-0.191 \pm 0.380	826 \pm 315	10.9 \pm 4.9	0.681 \pm 0.448	6.30 \pm 3.31
	Drought	132 \pm 86.7	1.66 \pm 1.99	0.237 \pm 0.205	0.0083 \pm 0.947	1739 \pm 648	30.1 \pm 9.7	1.91 \pm 0.63	9.45 \pm 3.59
	Statistics	F=0.012 P=0.92	F=1.21 P=0.314	F=0.292 P=0.61	F=0.038 P=0.85	F=1.61 P=0.25	F=3.09 P=0.13	F=2.54 P=0.16	F=0.415 P=0.54
<i>Phillyrea latifolia</i>	Control	145 \pm 81.2	2.06 \pm 1.25	-0.807 \pm 0.441	0.683 \pm 0.503	-100 \pm 54.9	4.03 \pm 2.31	-0.916 \pm 0.421	-0.916 \pm 0.421
	Drought	288 \pm 167	4.61 \pm 2.92	-0.810 \pm 0.123	1.98 \pm 1.40	-158 \pm 54.9	5.77 \pm 4.60	-1.08 \pm 0.21	-1.08 \pm 0.21
	Statistics	F=0.599 P=0.468	F=0.645 P=0.452	F=0.00005 P=0.995	F=0.754 P=0.418	F=0.566 P=0.480	F=0.114 P=0.747	F=0.119 P=0.742	F=0.119 P=0.742
<i>Arbutus unedo</i>	Control	165 \pm 70.1	2.86 \pm 1.14	-0.045 \pm 0.157	7.64 \pm 0.85	552 \pm 476	4.99 \pm 4.13	0.727 \pm 0.899	-0.157 \pm 0.291
	Drought	68.7 \pm 55.3	2.24 \pm 1.46	-0.042 \pm 0.12	2.21 \pm 0.95	112 \pm 83	0.9870.817	-0.054 \pm 0.125	0.0249 \pm 0.075
	Statistics	F=1.20 P=0.32	F=0.097 P=0.77	F=0.00036 P=0.98	F=16.8 P=0.0094	F=1.15 P=0.33	F=1.25 P=0.32	F=1.04 P=0.35	F=0.49 P=0.51

Table S. Leaf and leaf litter biomasses (mean S.E.) in the three studies species in control and drought treatment stands before treatment application (1999) and during treatment application (in 2004 and 2014). The letters between brackets means marginal statistical differences between control and treatment plots (P<0.1).

Biomass fraction	Species	Treatment	Year		
			1999	2004	2014
Leaf	<i>Quercus ilex</i>	Control	85880±20771	86208±22326	86677±23443
		Drought	90648±23109	88014±24748	85742±25671
	<i>Phillyrea latifolia</i>	Control	13364±6481	14086±6876	15719±7735
		Drought	12088±4847	13022±5321	14479±6029
	<i>Arbutus unedo</i>	Control	10605±4657	12046±5198	13727±2803 (a)
		Drought	5598±3204	6049±3291	6142±2745 (b)
	All	Control	109850±15864	112340±16953	118980±17394
		Drought	108334±20561	107085±21936	110306±23025
Leaf-litter	<i>Quercus ilex</i>	Control	694.5±231.3	995.9±280.0	1147±405.8
		Drought	702.7± 247.2	955.4±280.0	1070±284.7
	<i>Phillyrea latifolia</i>	Control	211.4±117.0	584.8±310.1	339.7±185.1
		Drought	327.2±113.4	838.1±429.2	346.4±180.6
	<i>Arbutus unedo</i>	Control	258.2±100.4	478.7±212.2	320.8±155.7
		Drought	206.5±95.2	353.3±201.2	103.2±22.9
	All	Control	1164±202.7	2059±111.4	1808±272.0
		Drought	1236±224.5	2147±78.2	1519±96.0