
Supplementary Materials: The following are available online at www.mdpi.com/xxx/s1, **Table S1.** (A) List of total metabolites obtained in three biological replicates of *Q. ilex* leaf seedlings under drought conditions at two sampling times (days 17 and 24), showing the mass-to-charge ratio (m/z), retention time, and abundance. (B) List of annotated variable metabolites (p -value < 0.05 in Kruskal-Wallis's test) showing the ID, neutral mass (Da), retention time (min) and description.

Excel document attached.

Table S2. List of enzymes involved in the phenolics metabolism identified at the transcriptomic, proteomic and metabolomic levels in *Q. ilex*. The presence of the enzyme is shown with a “x”.

	EC	Transcript		Protein		Substrate	
		Day 17	Day 24	Day 17	Day 24	Day 17	Day 24
Phenylpropanoids and derivatives							
Phenylalanine ammonia-lyase	4.3.1.24	x	x	x	x		
4-coumarate CoA ligase	6.2.1.12	x	x	x	x		
Caffeic acid 3-O-methyltransferase	2.1.1.68	x	x	x	x		
Ferulate 5-hydroxylase	1.14.-.-	x	x				
Caffeoyl-CoA O-methyltransferase	2.1.1.104	x	x				
Cinnamate 4-hydroxylase	1.14.14.91	x	x	x	x		
Coumarate 3-hydroxylase	1.14.13.-	x	x	x			
Shikimate O-hydroxycinnamoyltransferase	2.3.1.133	x	x				
p-coumaroyl ester 3'-hydroxylase	1.14.14.96	x	x			x	x
Caffeoylshikimate esterase	3.1.1.-	x	x				
Eugenol synthase	1.1.1.318	x	x			x	x
Isoeugenol synthase	1.1.1.139	x	x				
Cinnamate beta-D-glucosyltransferase	2.4.1.177	x	x				
Lignins							
Cinnamoyl-CoA reductase	1.2.1.44	x	x	x	x	x	
Cinnamyl alcohol dehydrogenase	1.1.1.195	x	x	x	x		
Coumarins							
Scopoletin glucosyltransferase	2.4.1.128	x	x	x	x		
Feruloyl CoA ortho-hydroxylase	1.14.11.61	x	x				
Stilbenoids							
Trans-resveratrol di-O-methyltransferase	2.1.1.240	x	x			x	x
Flavonoids							
Chalcone synthase	2.3.1.74	x	x	x	x	x	
NAD(P)H-dependent 6'-deoxychalcone synthase	2.3.1.170	x	x				
Chalcone isomerase	5.5.1.6	x	x	x	x		
Flavonoid 3'-hydroxylase	1.14.14.82	x	x	x	x		
Flavonoid 3',5'-hydroxylase	1.14.14.81	x	x				
Flavanone-3-hydroxylase	1.14.11.9	x	x	x	x		
Flavonol synthase	1.14.20.6	x	x				
Dihydroflavonol reductase	1.1.1.219	x	x	x	x		
Leucoanthocyanidin reductase	1.17.1.3	x	x	x	x	x	x
Anthocyanidin synthase	1.14.20.4	x	x	x	x		
Anthocyanidin reductase	1.3.1.77	x	x	x	x		
Flavonoid 3',5'-methyltransferase	2.1.1.267	x	x				
Flavonol 3-O-glucosyltransferase	2.4.1.91	x	x				
Anthocyanidin 3-O-glucosyltransferase	2.4.1.115	x	x	x	x		
Anthocyanin 5-aromatic acyltransferase	2.3.1.153	x	x	x	x		
Anthocyanidin 3-O-glucoside 2''-O-glucosyltransferase	2.4.1.297	x	x				
Isoflavonoids							
2-hydroxyisoflavanone dehydratase	4.2.1.105	x	x				

Isoflavone 2'-hydroxylase	1.14.14.90	x	x		
Isoflavone reductase	1.3.1.45	x	x	x	x
3,9-dihydroxypterocarpan 6A-monooxygenase	1.14.14.93	x	x		

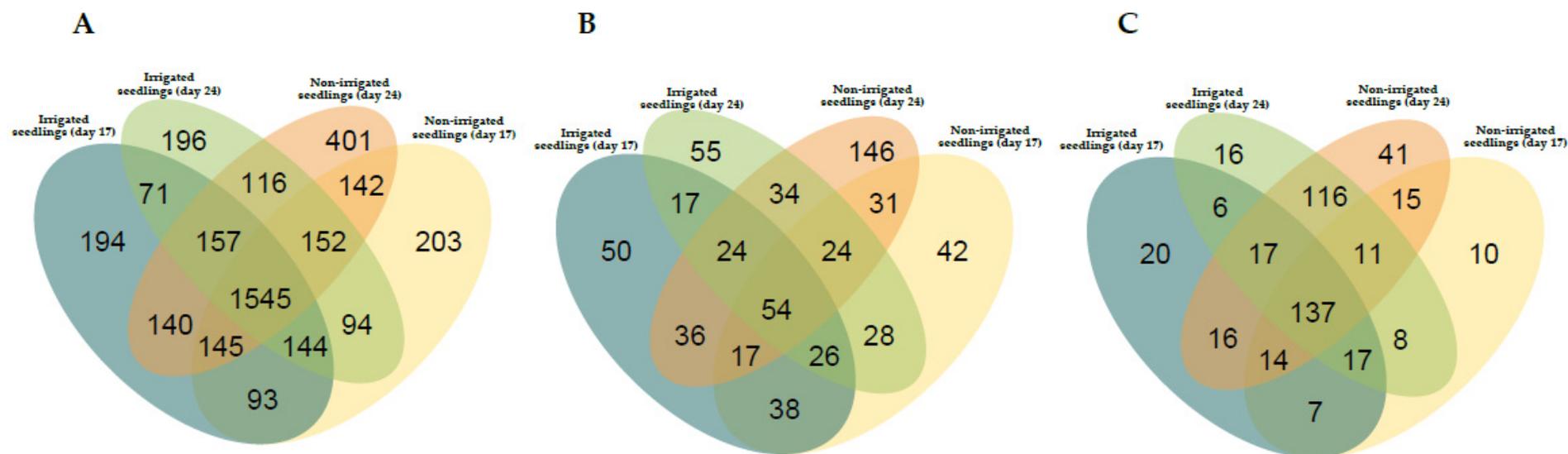


Figure S1. Venn diagrams of the total 3934 (A), and 616 variable (B) features, and 342 annotated compounds (C) in irrigated and non-irrigated *Q. ilex* leaf seedlings at both sampling times (days 17 and 24).

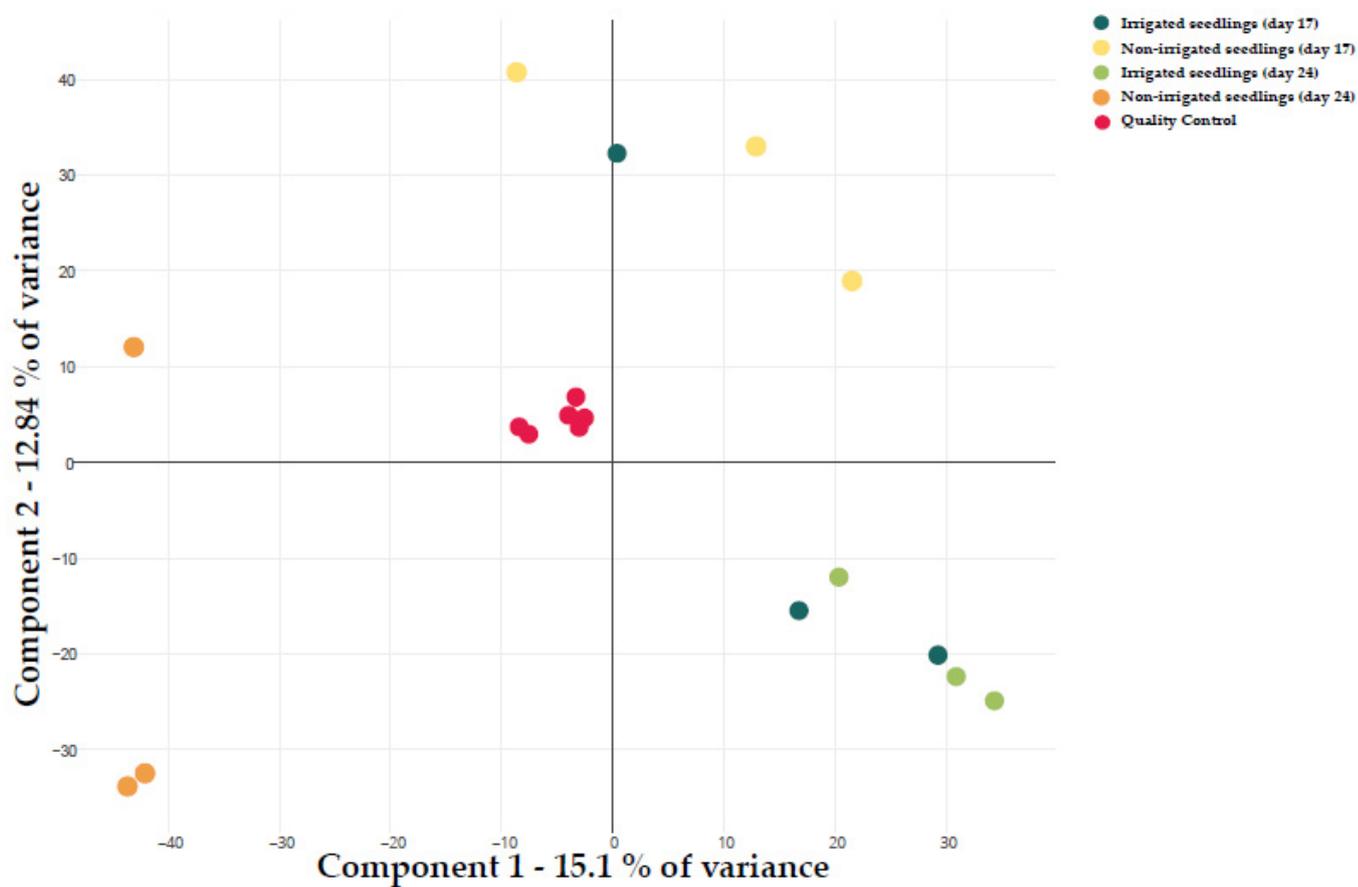


Figure S2. PCA analysis of the total dataset of metabolites including the quality control mix (QC).