

Article

Response of Merlot grapevine to drought is associated to adjustments of growth and nonstructural carbohydrates allocation in above and underground organs

Marco Vuerich ^{1,†}, Riccardo Braidotti ^{1,*}, Paolo Sivilotti¹, Giorgio Alberti¹, Valentino Casolo¹, Enrico Braidot¹, Francesco Boscutti¹, Alberto Calderan^{1,2} and Elisa Petrusa ¹

¹ Department of Agricultural Food, Animal and Environmental Sciences, University of Udine, via delle Scienze 206, 33100 Udine, Italy; vuerich.marco@spes.uniud.it (M.V.); braidotti.riccardo@spes.uniud.it (R.B.); paolo.sivilotti@uniud.it (P.S.); giorgio.alberti@uniud.it (G.A.); valentino.casolo@uniud.it (V.C.); enrico.braidot@uniud.it (E.B.); francesco.boscutti@uniud.it (F.B.); alberto.calderan@uniud.it (A.C.); elisa.petrussa@uniud.it (E.P.)

² Department of Life Sciences, University of Trieste, via Licio Giorgieri, 5, 34127 Trieste, Italy;

* Correspondence: braidotti.riccardo@spes.uniud.it; Tel.: +39 0432 558633

† Co-first author, these authors contributed equally to this work.

SUPPLEMENTARY MATERIALS

Table S1 Outcomes of the analysis of variance (two-way ANOVA) applied to shoot and root DW, in relation to drought stress (treatment), time and their interactions.

Factor	Df	F value	p-Value
Shoot DW			
Time	1, 24	3.07	0.093
Treatment	1, 24	24.21	< 0.001 ***
Time x Treatment	1, 24	0.07	0.796
Root DW			
Time	1, 24	47.89	< 0.001 ***
Treatment	1, 24	13.68	< 0.011 **
Time x Treatment	1, 24	0.42	0.522

** and *** significance at the $p < 0.01$ and 0.001 levels, respectively.

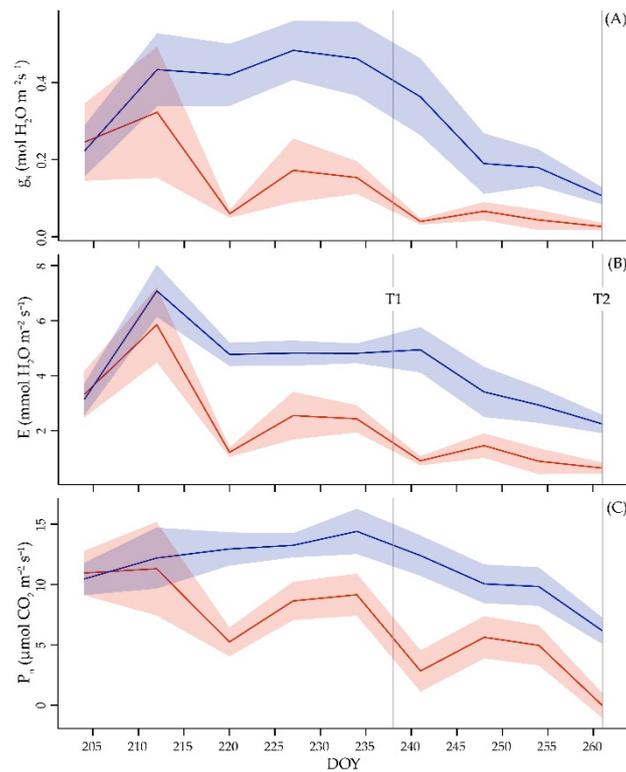


Figure S1. Split lines interpolating mean value (full color line) \pm standard deviation (shaded area) of leaf gas exchanges parameters: stomatal conductance (g_s) (panel A), transpiration rate (E) (panel B) and net photosynthesis (P_n) (panel C), measured in Merlot vines under well-watered (WW – blue line) and water stress (WS – red line) conditions. Data are referred to the whole experimental period.

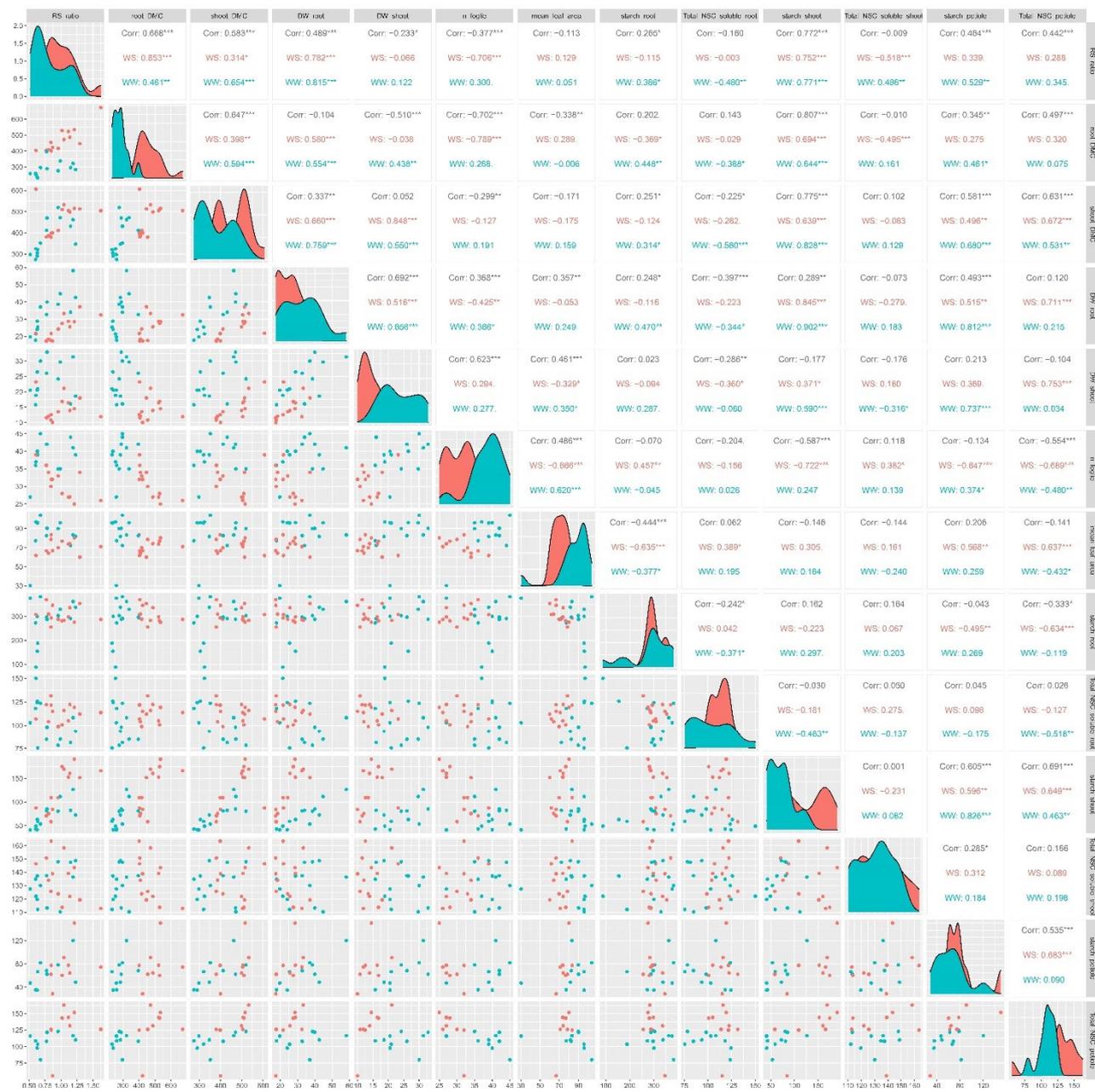


Figure S2. Correlation matrix showing the correlation coefficients between the considered variables divided by treatment. The Pearson correlation is shown on the left, the distribution of the variables is shown along the diagonal, scatter plots with the relationships between each variable are shown on the right.

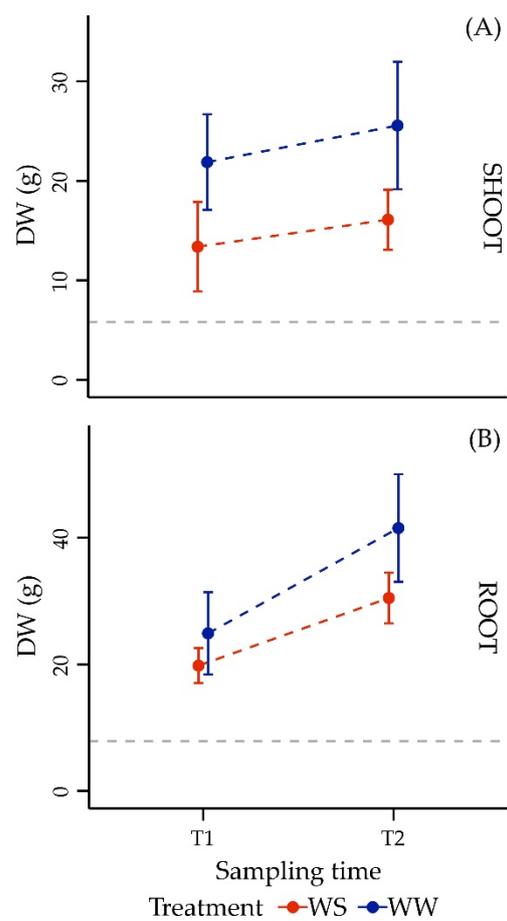


Figure S3. Mean values \pm standard deviation of dry weight (DW) of shoot and root (panel A and B, respectively) in Merlot vines under well-watered (WW) and water stress (WS) conditions at sampling times T1 and T2 (237 and 260 DOY). The horizontal dotted line indicates the value of the variables at T0 (205 DOY).