SUPPLEMENTARY DATA

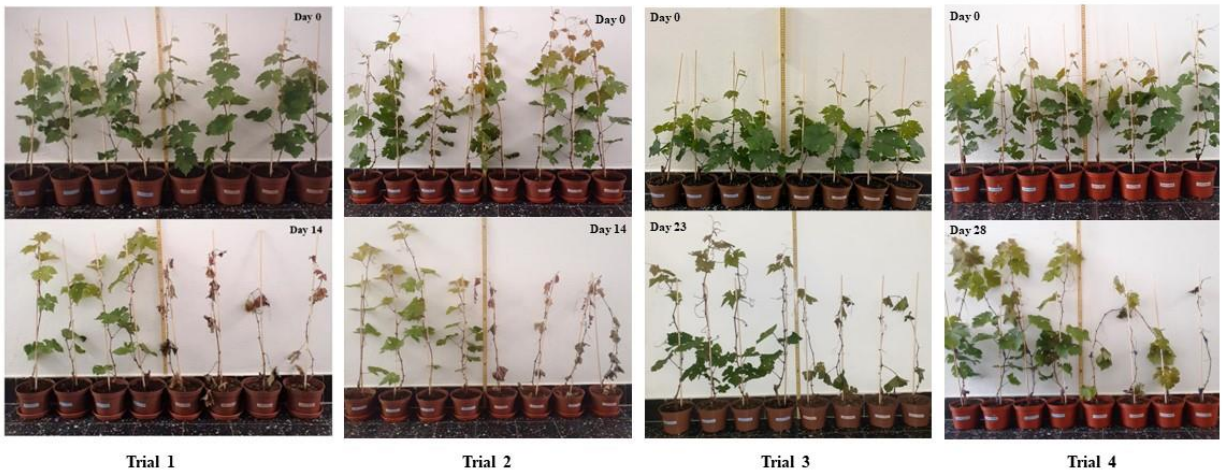


Figure S1. Grapevines development under water stress. The four first plants of each picture (left to right) represent the well-watered (WW) group while the other four are part of water deficit treatment (WD).

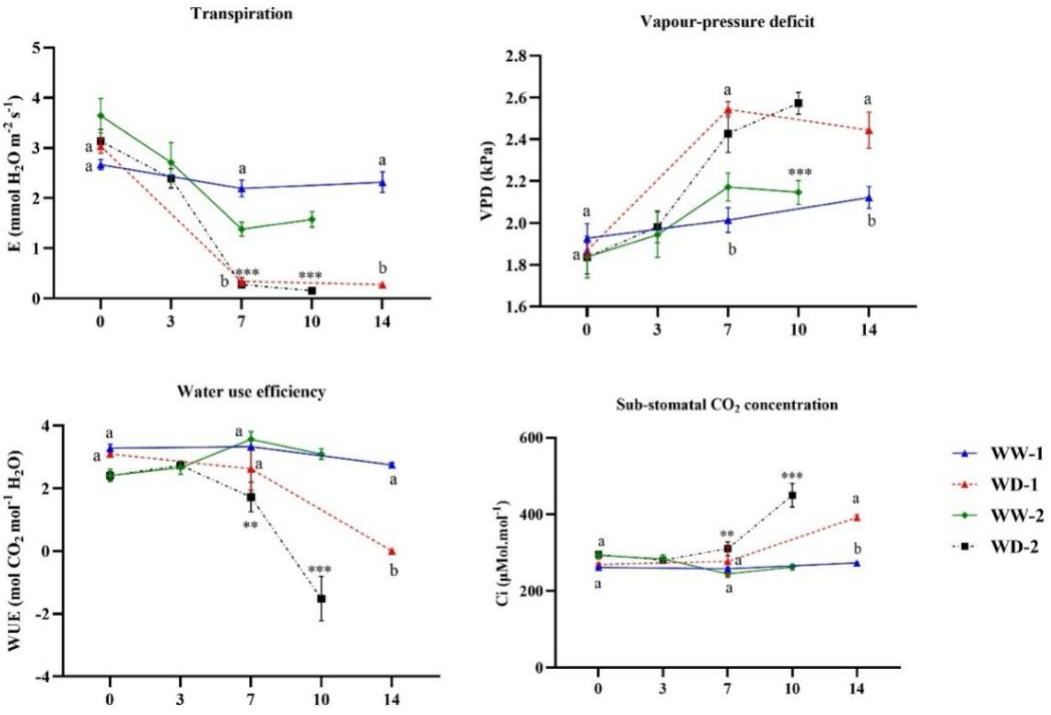


Figure S2. Photosynthetic activity of plants from trial 1 and 2. Transpiration, vapour-pressure deficit, water use efficiency and sub-stomatal CO_2 concentration were determined using a portable photosynthesis system. WW: well-watered; WD: water-deficit. Letters represent statistics differences between treatments in the same trial 1. Asterisks were used for trials 2 ($p < 0.05$).

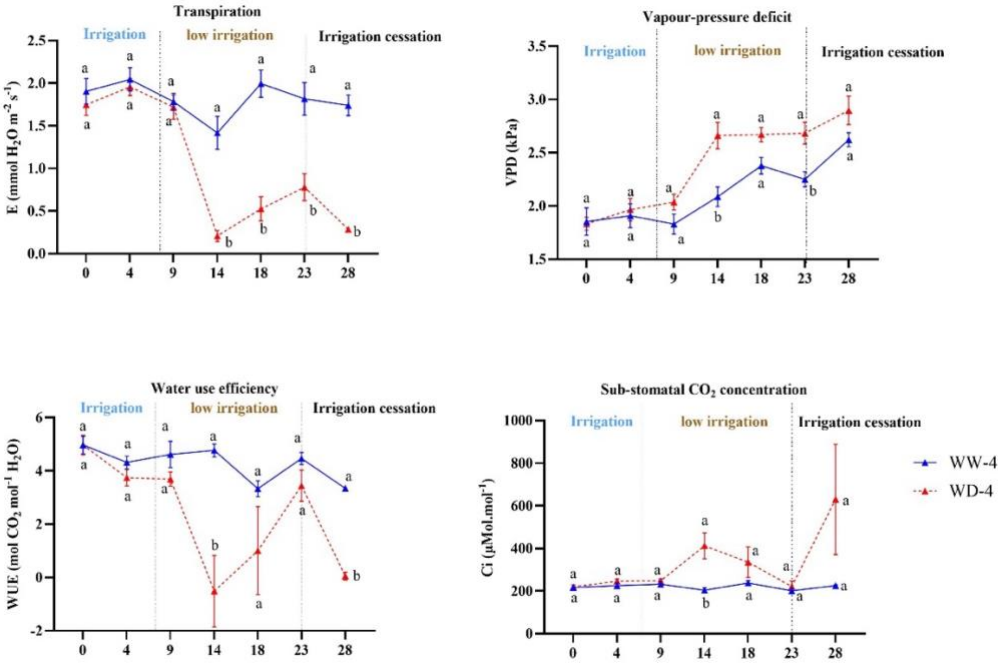


Figure S3. Photosynthetic activity of plants from trial 4. Transpiration, vapour-pressure deficit, water use efficiency and sub-stomatal CO_2 concentration were determined using a portable photosynthesis system. WW: well-watered; WD: water-deficit. Letters represent statistics differences between treatments in the same trial ($p < 0.05$).

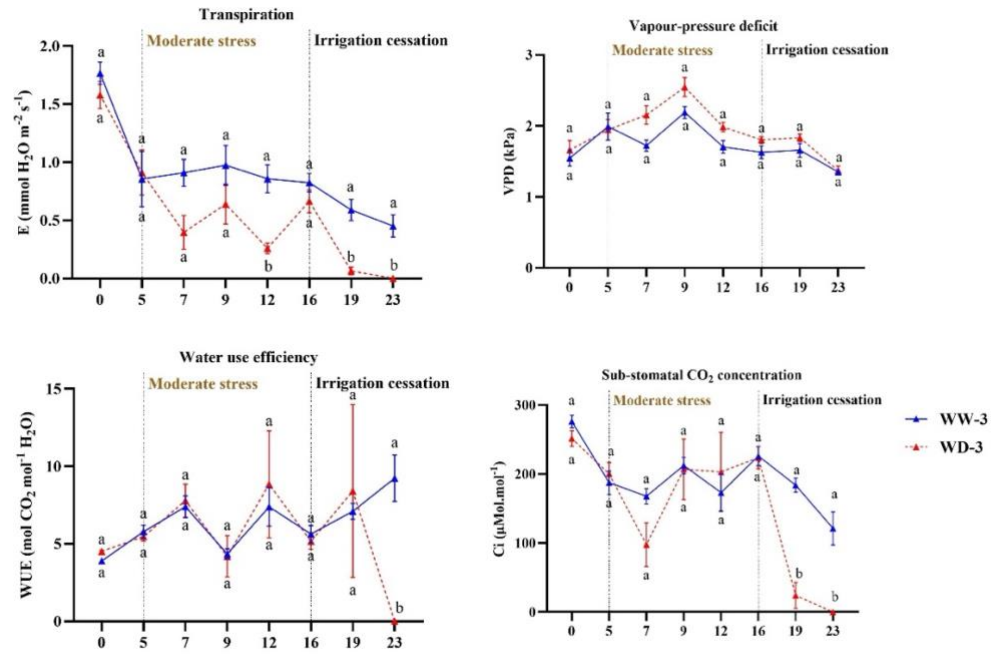


Figure S4. Photosynthetic activity of plants from trial 3. Transpiration, vapour-pressure deficit, water use efficiency and sub-stomatal CO_2 concentration were determined using a portable photosynthesis system. WW: well-watered; WD: water-deficit. Letters represent statistics differences between treatments in the same trial ($p < 0.05$).

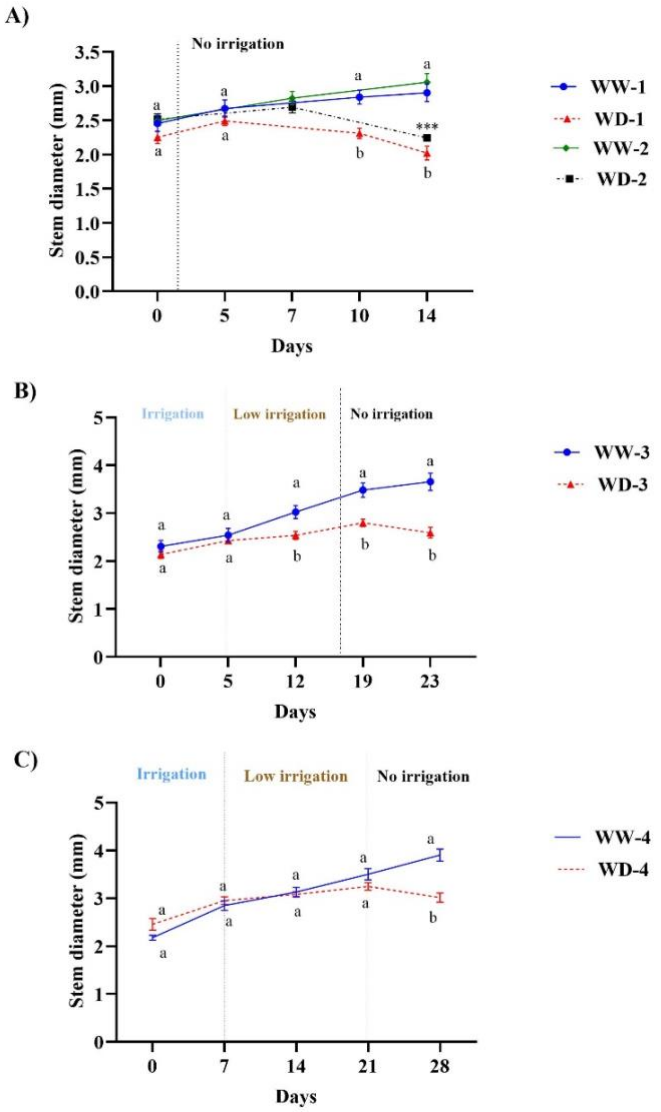


Figure S5. Determination of stem diameter of vines under water stress. The measurements were performed every week using a digital calypter. WW: well-watered; WD: water-deficit; 1, 2, 3 or 4 indicates the trial number. Letters represent statistics differences between treatments in the same trial for trials 1, 3 and 4. Asterisks were used for trial 2 ($p < 0.05$).

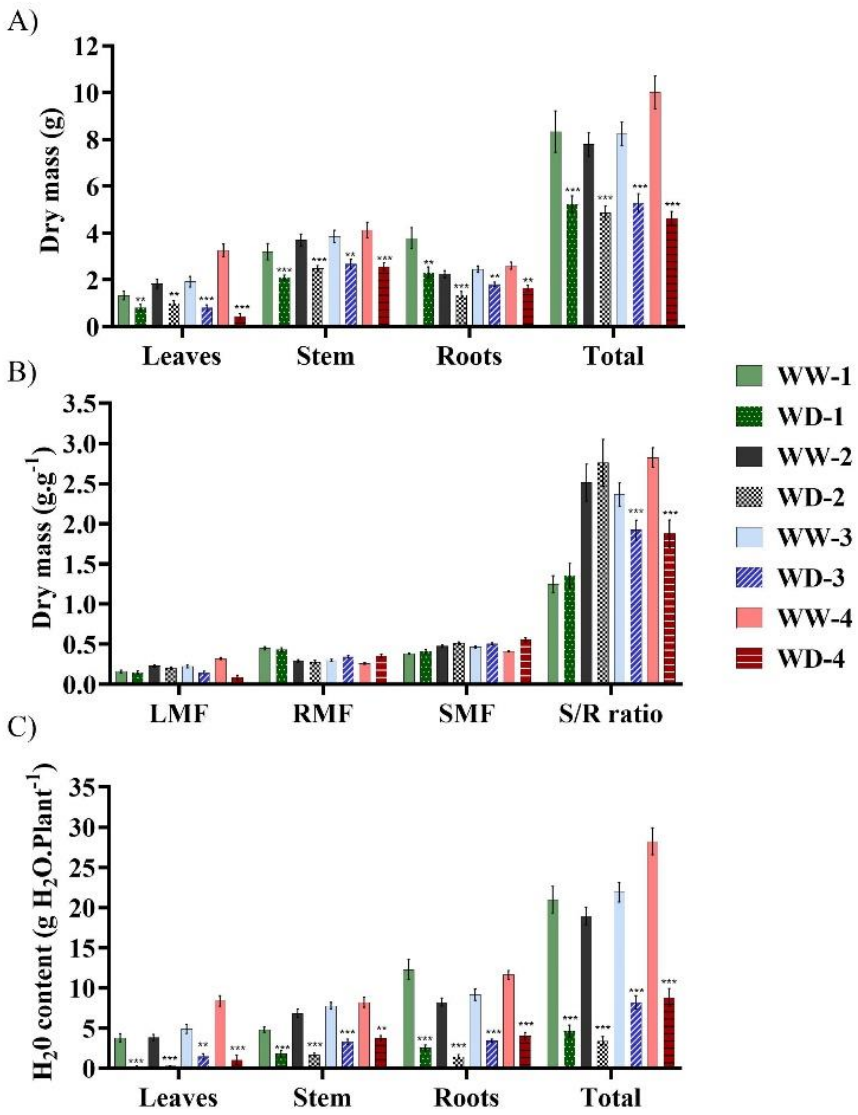


Figure S6. Vegetative growth of grapevines under drought stress. (A) The vines were split on leaves, stem and roots and the dry mass was determined after oven-drying the fresh mass at 65 °C for 48h (A). The dry mass was used to calculate biomass allocation regarding the leaf mass fraction (LMF), root mass fraction (RMF), stem mass fraction (SMF) and shoot (S) to root (R) ratio (B). The plant water content was calculated based on the differences found in the fresh and dry mass (C). Asterisks indicate significant differences between treatments under the same trial and plant organ ($p < 0.05$). Abbreviations for trial descriptions are the same as previously.

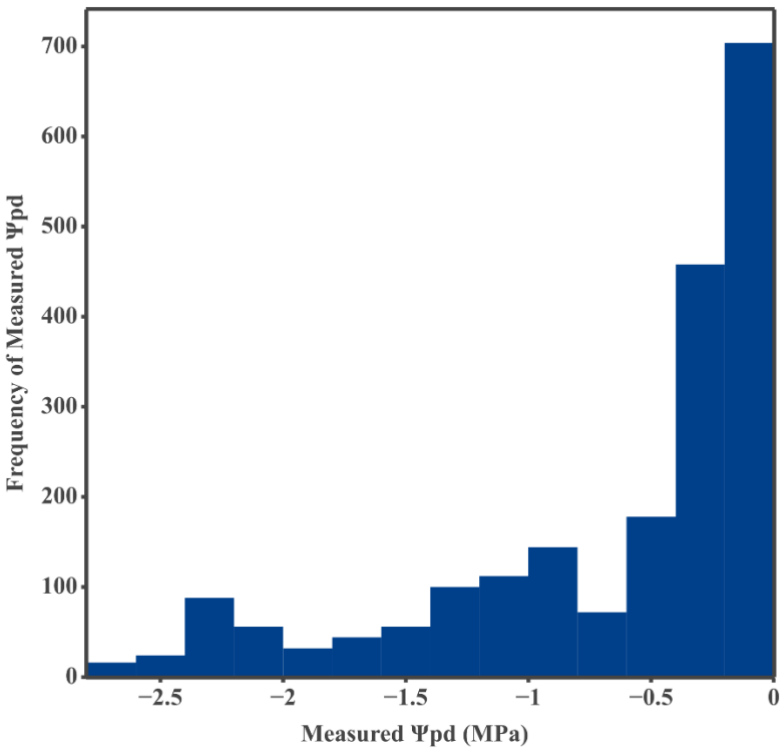


Figure S7: Histogram showing distribution of labels used to train the regression model. More samples of data with labels in the no-stress water status (Ψpd around -0.2) compared to severely stressed Ψpd <1.5) was observed in the dataset.

Table S1. Confusion matrix for the classification and regression model.

	Classification		Regression	
	True Stress	True Control	True Stress	True Control
Predicted Stress	74	0	83	99
Predicted Control	30	22	89	181