Supplementary Material
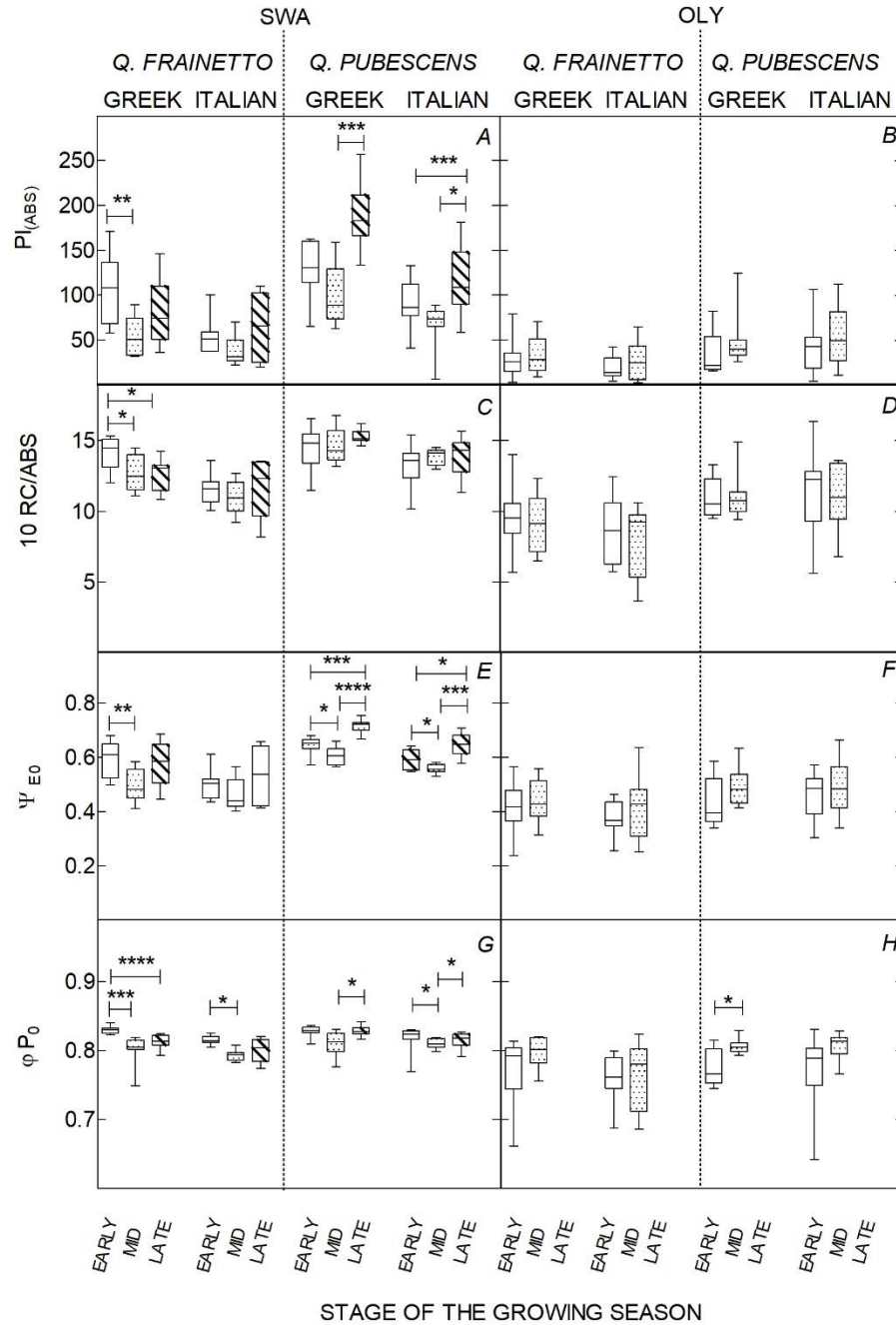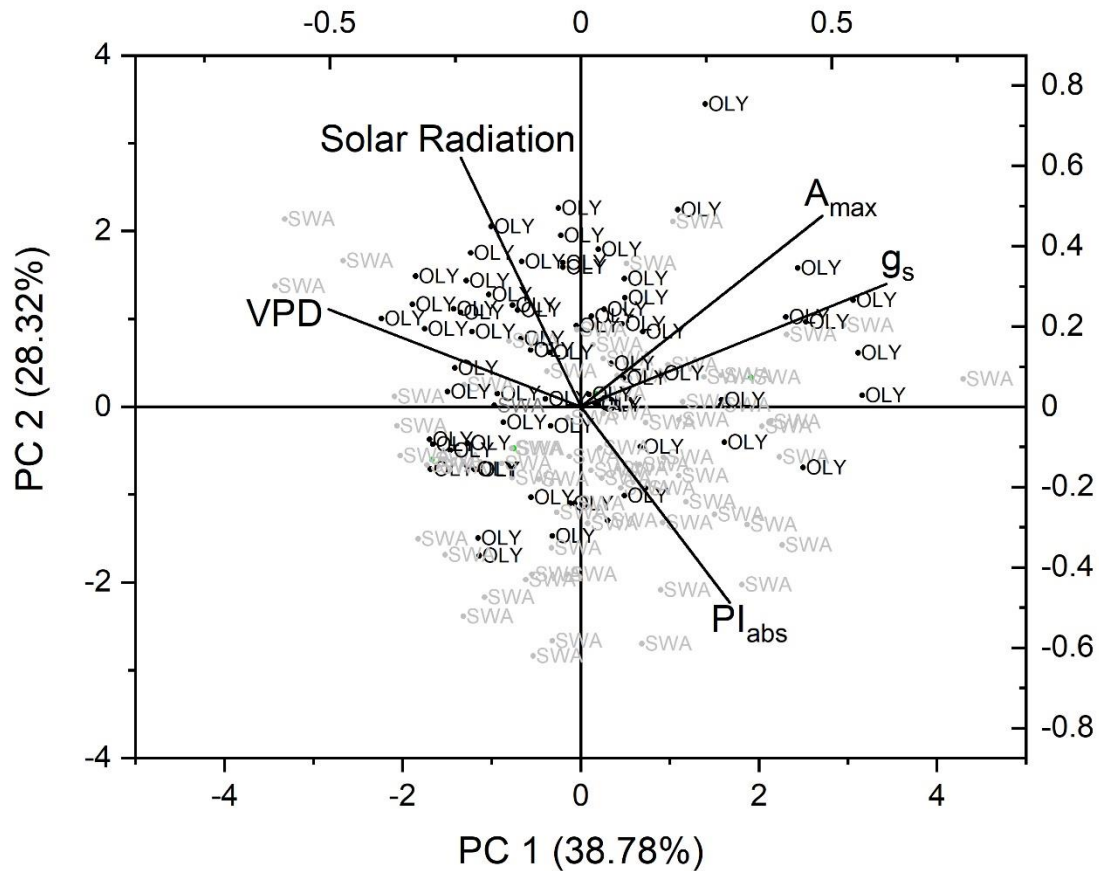
Supplementary Figure 1. The performance index on absorption basis (PI_{abs}) and its components 10 RC/ABS, φP_0 and ΨE_0 shown by box plots (with 10–90 percentile whiskers) for both sites, species and provenances and seasons. Statistically significant differences between different seasons are shown by brackets and asterisks with significance levels at 5 (*), 1 (**), 0.1 (***), and 0.01% (****), respectively (n = 8-9). No data were available for OLY in autumn.

Supplementary Figure 2. Principal components analyses (first two axes, based on eigenvalues > 1) on the dataset of light-saturated net photosynthesis (PN_{max}), stomatal conductance (g_s), performance index on absorption basis (PI_{abs}), solar radiation and vapor pressure deficit (VPD) of all studied plants. Black color (OLY) indicates plants of the common garden in Olympiada, Greece and grey color (SWA) indicates the plants of the common garden in Schwanheim, Germany.

Supplementary Figure 3: Diurnal course of the maximum quantum efficiency of reduction of Q_A (φP_0; *A, B, C*) and the performance index on absorption basis (PI$_{abs}$; *D, E, F*), measured at three dates per site (early; mid and late stage of the growing season) shown as mean values $\pm$ SE ($n = 2$–21). Statistically significant differences between the sites are shown by asterisks with significance levels at 5% (*), 1% (**), 0.1% (***) and 0.01% (****), or n.a. when not applicable, respectively.
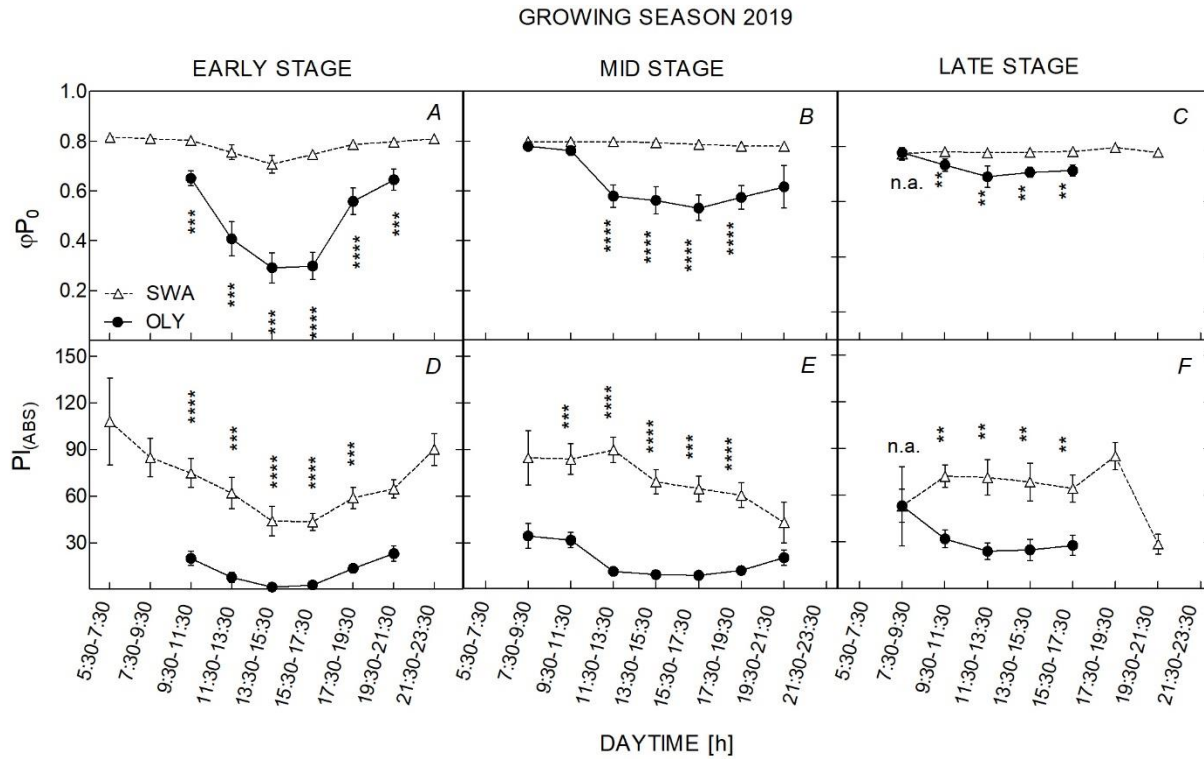
Supplementary Figure 4: Diurnal course of PN_{max} (*A, B, C*), g_s (*D, E, F*) and WUE (*G, H ,I*) , measured at three dates per site (early; mid and late stage of the growing season) shown as mean values $\pm$ SE ($n = 1\text{--}17$). Statistically significant differences between the sites are shown by asterisks with significance levels at 5% (*), 1% (**), 0.1% (***) and 0.01% (****) or n.a. when not applicable, respectively.