Table S1. Values for the degree of agreement $\mu_{C_k,C_l}$ between the leaf anatomical and physiological parameters determined in Italian (IT) and Bulgarian (BG) populations of *P. orientalis* plants under control (FTSW = 95%) and drought (FTSW = 28%) conditions. LT – leaf thickness, PP – palisade parenchyma, SP – spongy parenchyma, AdE – adaxial epidermis, AbE – abaxial epidermis, InS – intercellular space, $A_{\text{sat}}$ – CO$_2$ saturated photosynthetic rate, $V_{\text{cmax}}$ – maximum carboxylation rate of Rubisco, $J_{\text{max}}$ – maximum rate of photosynthetic electron transport, TPU – triose phosphate utilization, $v_c$ – carboxylation rate, $v_o$ – oxygenation rate, $R_p$ – photorespiration, $g_m$ - mesophyll conductance. The IT population data are shown in upper triangle of the table, while those for BG population – in the lower triangle. The degrees of agreement showing positive correlations are presented in blue color, those showing the negative correlations – in red color.

| $\mu_{C_k,C_l}$ | LT | PP | SP | AdE | AbE | InS | $A_{\text{sat}}$ | $V_{\text{cmax}}$ | $J_{\text{max}}$ | TPU | $v_c$ | $v_o$ | $R_p$ | $g_m$ |
|-----------------|----|----|----|-----|-----|-----|----------------|----------------|----------------|-----|-----|-----|------|------|
| LT              |    |    |    |     |     |     | 0.82           | 0.7            | 0.61           | 0.52 | 0.35 | 0.68 | 0.85 | 0.76 | 0.71 | 0.86 | 0.20 | 0.17 | 0.71 |
| PP              | 0.71           | 0.7 | 0.52 | 0.48 | 0.44 | 0.65 | 0.7            | 0.67           | 0.65           | 0.74 | 0.14 | 0.17 | 0.71 |
| SP              | 0.59           | 0.55 | 0.47 | 0.45 | 0.35 | 0.80 | 0.82           | 0.79           | 0.77           | 0.62 | 0.20 | 0.2  | 0.80 |
| AdE             | 0.71           | 0.73 | 0.48 | 0.42 | 0.45 | 0.47 | 0.58           | 0.58           | 0.52           | 0.65 | 0.45 | 0.45 | 0.45 |
| AbE             | 0.55           | 0.38 | 0.62 | 0.44 | 0.59 | 0.5  | 0.45           | 0.42           | 0.44           | 0.47 | 0.56 | 0.5  | 0.55 |
| InS             | 0.55           | 0.65 | 0.5  | 0.44 | 0.52 | 0.15 | 0.29           | 0.17           | 0.21           | 0.27 | 0.61 | 0.58 | 0.33 |
| $A_{\text{sat}}$| 0.79           | 0.89 | 0.56 | 0.65 | 0.42 | 0.67 | 0.80           | 0.86           | 0.83           | 0.7  | 0.3  | 0.33 | 0.77 |
| $V_{\text{cmax}}$| 0.76           | 0.71 | 0.5  | 0.80 | 0.39 | 0.45 | 0.76           | 0.85           | 0.83           | 0.80 | 0.23 | 0.23 | 0.80 |
| $J_{\text{max}}$| 0.77           | 0.85 | 0.58 | 0.76 | 0.35 | 0.56 | 0.83           | 0.74           | 0.92           | 0.77 | 0.32 | 0.35 | 0.74 |
| TPU             | 0.77           | 0.80 | 0.55 | 0.76 | 0.35 | 0.55 | 0.82           | 0.76           | 0.95           | 0.74 | 0.32 | 0.35 | 0.76 |
| $v_c$           | 0.82           | 0.74 | 0.53 | 0.77 | 0.48 | 0.52 | 0.76           | 0.73           | 0.83           | 0.86 | 0.27 | 0.24 | 0.71 |
| $v_o$           | 0.41           | 0.55 | 0.58 | 0.42 | 0.5  | 0.59 | 0.53           | 0.47           | 0.42           | 0.38 | 0.32 | 0.94 | 0.32 |
| $R_p$           | 0.41           | 0.55 | 0.58 | 0.42 | 0.5  | 0.59 | 0.53           | 0.47           | 0.42           | 0.38 | 0.32 | 1.00 | 0.26 |
| $g_m$           | 0.73           | 0.7  | 0.41 | 0.76 | 0.35 | 0.5  | 0.7            | 0.74           | 0.76           | 0.77 | 0.76 | 0.32 | 0.32 |
Table S2. Values for the degree of disagreement $\nu_{c_{k,c_l}}$ between the leaf anatomical and physiological parameters determined in Italian (IT) and Bulgarian (BG) populations of *P. orientalis* plants under control (FTSW = 95%) and drought (FTSW = 28%) conditions. LT – leaf thickness, PP – palisade parenchyma, SP – spongy parenchyma, AdE – adaxial epidermis, AbE – abaxial epidermis, InS – intercellular space, $A_{sat}$ – CO$_2$ saturated photosynthetic rate, $V_{cmax}$ – maximum carboxylation rate of Rubisco, $J_{max}$ – maximum rate of photosynthetic electron transport, TPU – triose phosphate utilization, $v_c$ – carboxylation rate, $v_o$ – oxygenation rate, $R_p$ – photorespiration, $g_{m}$ - mesophyll conductance. The IT population data are shown in upper triangle of the table, while those for BG population – in the lower triangle. The degrees of disagreement are presented in the same colours as the corresponding values of the degree of agreement.

| $\nu_{c_{k,c_l}}$ | LT   | PP   | SP   | AdE  | AbE  | InS  | $A_{sat}$ | $V_{cmax}$ | $J_{max}$ | TPU  | $v_c$ | $v_o$ | $R_p$ | $g_{m}$ |
|-------------------|------|------|------|------|------|------|----------|-----------|-----------|------|------|------|------|--------|
| LT               | 0.18 | 0.3  | 0.38 | 0.48 | 0.65 |      | 0.32     | 0.15      | 0.24      | 0.27 | 0.14 | 0.80 | 0.83 | 0.27   |
| PP               | 0.29 | 0.3  | 0.47 | 0.52 | 0.56 |      | 0.35     | 0.3       | 0.33      | 0.33 | 0.26 | 0.86 | 0.83 | 0.27   |
| SP               | 0.41 | 0.45 | 0.52 | 0.55 | 0.65 |      | 0.20     | 0.18      | 0.21      | 0.21 | 0.38 | 0.80 | 0.80 | 0.18   |
| AdE              | 0.29 | 0.21 | 0.52 | 0.56 | 0.53 |      | 0.52     | 0.41      | 0.41      | 0.45 | 0.33 | 0.53 | 0.53 | 0.52   |
| AbE              | 0.45 | 0.62 | 0.38 | 0.56 | 0.48 |      | 0.50     | 0.55      | 0.58      | 0.55 | 0.53 | 0.44 | 0.5  | 0.44   |
| InS              | 0.45 | 0.35 | 0.5  | 0.56 | 0.48 |      | 0.85     | 0.71      | 0.83      | 0.77 | 0.73 | 0.39 | 0.42 | 0.65   |
| $A_{sat}$        | 0.21 | 0.11 | 0.44 | 0.35 | 0.58 | 0.33 | 0.20     | 0.14      | 0.15      | 0.3  | 0.7  | 0.67 | 0.21 |        |
| $V_{cmax}$       | 0.24 | 0.29 | 0.5  | 0.20 | 0.61 | 0.55 | 0.24     | 0.15      | 0.15      | 0.20 | 0.07 | 0.77 | 0.18 |        |
| $J_{max}$        | 0.23 | 0.15 | 0.42 | 0.24 | 0.65 | 0.44 | 0.17     | 0.26      | 0.06      | 0.23 | 0.68 | 0.65 | 0.24 |        |
| TPU              | 0.21 | 0.18 | 0.44 | 0.23 | 0.64 | 0.44 | 0.17     | 0.23      | 0.03      | 0.24 | 0.67 | 0.64 | 0.21 |        |
| $v_c$            | 0.18 | 0.26 | 0.47 | 0.23 | 0.52 | 0.48 | 0.24     | 0.27      | 0.17      | 0.12 | 0.73 | 0.76 | 0.27 |        |
| $v_o$            | 0.59 | 0.45 | 0.42 | 0.58 | 0.5  | 0.41 | 0.47     | 0.53      | 0.58      | 0.61 | 0.68 | 0.06 | 0.67 |        |
| $R_p$            | 0.59 | 0.45 | 0.42 | 0.58 | 0.5  | 0.41 | 0.47     | 0.53      | 0.58      | 0.61 | 0.68 | 0  | 0.73 |        |
| $g_{m}$          | 0.18 | 0.21 | 0.5  | 0.15 | 0.56 | 0.41 | 0.21     | 0.17      | 0.15      | 0.12 | 0.15 | 0.59 | 0.59 |        |
Table S3. Values for the degree of uncertainty $\pi_{C_k, C_l}$ between the leaf anatomical and physiological parameters determined in Italian (IT) and Bulgarian (BG) populations of *P. orientalis* plants under control (FTSW = 95%) and drought (FTSW = 28%) conditions. LT – leaf thickness, PP – palisade parenchyma, SP – spongy parenchyma, AdE – adaxial epidermis, AbE – abaxial epidermis, InS – intercellular space, $A_{\text{sat}}$ – CO$_2$ saturated photosynthetic rate, $V_{c_{\text{max}}}$ – maximum carboxylation rate of Rubisco, $J_{\text{max}}$ – maximum rate of photosynthetic electron transport, TPU – triose phosphate utilization, $v_c$ – carboxylation rate, $v_o$ – oxygenation rate, $R_p$ – photorespiration, $g_m$ - mesophyll conductance. The IT population data are shown in upper triangle of the table, while those for BG population – in the lower triangle. The degrees of uncertainty are presented in the same colours as the corresponding values of the degree of agreement.

| $\pi_{C_k, C_l}$ | LT  | PP  | SP  | AdE | AbE | InS | $A_{\text{sat}}$ | $V_{c_{\text{max}}}$ | $J_{\text{max}}$ | TPU  | $v_c$ | $v_o$ | $R_p$ | $g_m$ |
|------------------|-----|-----|-----|-----|-----|-----|------------------|------------------|------------------|-----|------|------|------|------|
| LT               | 0.09| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09             | 0.09             | 0.09             | 0.09| 0.09| 0.09| 0.09| 0.09|
| PP               | 0.09| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09             | 0.09             | 0.09             | 0.09| 0.09| 0.09| 0.09| 0.09|
| SP               | 0.09| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09             | 0.09             | 0.09             | 0.09| 0.09| 0.09| 0.09| 0.09|
| AdE              | 0.09| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09             | 0.09             | 0.09             | 0.09| 0.09| 0.09| 0.09| 0.09|
| AbE              | 0.09| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09             | 0.09             | 0.09             | 0.09| 0.09| 0.09| 0.09| 0.09|
| InS              | 0.09| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09             | 0.09             | 0.09             | 0.09| 0.09| 0.09| 0.09| 0.09|
| $A_{\text{sat}}$| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09             | 0.09             | 0.09             | 0.09| 0.09| 0.09| 0.09| 0.09|
| $V_{c_{\text{max}}}$| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09             | 0.09             | 0.09             | 0.09| 0.09| 0.09| 0.09| 0.09|
| $J_{\text{max}}$| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09             | 0.09             | 0.09             | 0.09| 0.09| 0.09| 0.09| 0.09|
| TPU              | 0.09| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09             | 0.09             | 0.09             | 0.09| 0.09| 0.09| 0.09| 0.09|
| $v_c$            | 0.09| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09             | 0.09             | 0.09             | 0.09| 0.09| 0.09| 0.09| 0.09|
| $v_o$            | 0.09| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09             | 0.09             | 0.09             | 0.09| 0.09| 0.09| 0.09| 0.09|
| $R_p$            | 0.09| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09             | 0.09             | 0.09             | 0.09| 0.09| 0.09| 0.09| 0.09|
| $g_m$            | 0.09| 0.09| 0.09| 0.09| 0.09| 0.09| 0.09             | 0.09             | 0.09             | 0.09| 0.09| 0.09| 0.09| 0.09|