

Table 2S. Variable loadings of principal component analysis (PCA) for well-watered (WW), serious water stressed (WS₃), and re-watering (RW) conditions in 120 genotypes of *Populus*. P_N – net photosynthetic rate; g_s – stomatal conductance; C_i – intercellular carbon dioxide concentration; E – transpiration rate; WUE – water use efficiency; CCI – chlorophyll content index; F_v/F_m – maximal quantum yield of PSII photochemistry; F_v/F_0 – potential photochemical efficiency of PSII; RWC – relative water content; RMP – relative membrane permeability; MDA – malondialdehyde; Pro – free proline; SOD – superoxide dismutase; POD – peroxidase; CAT – catalase.

Variable	Axis 1	Axis 2	Axis 3	Axis 4	Axis 5	Axis 6	Axis 7	Axis 8	Axis 9	Axis 10	Axis 11	Axis 12	Axis 13	Axis 14	Axis 15	Axis 16
Well-watered (WW) condition																
P_N	0.526	0.031	0.031	0.010	-0.035	-0.031	0.010	-0.046	0.018	-0.172	-0.131	-0.115	0.066	-0.186	-0.520	0.590
g_s	0.496	-0.006	-0.004	0.107	0.010	-0.002	0.021	-0.115	-0.147	0.015	-0.035	-0.002	0.595	-0.025	0.592	-0.005
C_i	0.349	-0.133	0.075	-0.048	0.199	0.163	-0.137	-0.063	-0.130	0.712	0.280	0.319	-0.214	0.001	-0.114	-0.029
E	0.258	0.322	0.445	0.175	-0.266	-0.184	-0.170	-0.058	0.079	-0.040	-0.056	-0.016	0.010	-0.170	-0.247	-0.602
WUE	0.189	-0.353	-0.476	-0.177	0.269	0.151	0.140	-0.023	-0.063	-0.153	-0.090	-0.132	0.134	-0.151	-0.310	-0.526
CCI	0.481	0.020	-0.078	-0.009	0.020	0.015	0.072	0.123	0.105	-0.259	-0.145	-0.041	-0.625	0.400	0.287	-0.085
F_v/F_m	0.014	-0.563	0.240	0.099	-0.128	-0.216	-0.025	0.172	0.196	0.025	-0.021	0.080	0.288	0.589	-0.215	-0.026
F_v/F_0	0.011	-0.576	0.266	0.022	-0.121	-0.133	0.081	0.207	0.093	0.012	-0.090	-0.069	-0.241	-0.607	0.256	0.035
RWC	0.026	0.096	-0.079	0.059	-0.257	0.578	-0.255	0.672	0.044	0.115	-0.149	-0.102	0.126	-0.016	-0.015	-0.007
RMP	-0.024	0.141	-0.135	0.192	0.514	-0.356	-0.251	0.154	0.399	0.313	-0.335	-0.270	0.037	-0.038	0.046	0.021
MDA	-0.018	-0.177	-0.255	-0.119	-0.226	0.020	-0.740	-0.349	0.166	-0.150	-0.166	0.279	-0.045	-0.058	0.074	0.035
Pro	0.049	0.007	-0.227	-0.335	-0.353	-0.459	-0.181	0.149	-0.411	0.226	0.120	-0.448	-0.049	0.078	0.009	-0.001
Protein	-0.041	-0.056	0.345	-0.432	-0.028	0.366	0.048	-0.398	0.172	0.208	-0.285	-0.470	0.010	0.127	0.051	-0.001
SOD	0.022	-0.036	0.338	-0.224	0.466	0.059	-0.415	0.172	-0.086	-0.373	0.474	-0.192	0.041	0.003	0.038	0.011
POD	0.124	0.147	-0.159	-0.424	-0.183	-0.102	0.182	0.110	0.680	0.037	0.410	0.101	0.123	-0.095	0.055	-0.007
CAT	-0.011	0.134	0.186	-0.576	0.166	-0.178	0.059	0.265	-0.191	-0.038	-0.460	0.474	0.090	-0.016	-0.002	-0.009
Serious water stressed (WS₃) condition																
P_N	0.299	0.133	-0.279	0.161	-0.171	-0.002	-0.097	-0.048	0.015	0.042	-0.250	0.306	0.071	0.150	0.379	0.647

g_s	0.267	0.110	-0.357	0.203	-0.124	0.208	0.176	0.174	-0.082	-0.119	-0.388	-0.223	-0.263	-0.130	-0.566	0.012
C_i	0.283	0.127	-0.055	0.354	-0.024	0.183	0.082	0.294	-0.225	0.350	0.331	-0.175	0.561	-0.016	0.049	-0.135
E	0.111	-0.603	-0.431	0.147	0.022	0.138	-0.103	-0.115	-0.012	0.001	-0.125	0.233	-0.007	0.205	0.180	-0.478
WUE	0.187	0.631	0.142	0.043	-0.167	-0.053	-0.004	-0.011	0.054	-0.028	-0.212	0.265	-0.134	0.151	0.205	-0.559
CCI	0.153	0.214	-0.592	-0.217	-0.058	-0.301	0.011	-0.217	0.367	0.025	0.472	-0.108	-0.034	-0.125	-0.047	-0.063
F_v/F_m	0.297	-0.065	0.055	-0.153	0.316	0.096	0.076	0.186	0.252	0.057	-0.203	-0.560	-0.205	-0.085	0.510	-0.033
F_v/F_0	0.250	0.034	0.227	0.175	0.399	0.388	-0.143	-0.191	0.573	-0.008	0.091	0.224	0.084	0.074	-0.291	0.063
RWC	0.267	-0.103	0.131	-0.347	-0.401	0.086	-0.241	0.159	0.071	-0.399	0.098	-0.231	0.202	0.497	-0.117	0.013
RMP	-0.272	0.199	-0.197	0.079	0.410	-0.140	0.225	-0.143	-0.067	0.038	-0.135	-0.227	0.124	0.694	-0.086	0.042
MDA	-0.235	0.146	-0.109	0.466	0.100	-0.074	-0.708	0.101	-0.022	-0.285	0.075	-0.241	-0.103	-0.062	0.084	-0.017
Pro	0.278	0.070	-0.031	-0.154	0.374	-0.098	0.015	-0.298	-0.358	-0.524	-0.125	0.035	0.385	-0.291	0.024	-0.051
Protein	0.220	-0.160	0.279	0.521	-0.225	-0.209	0.338	-0.410	-0.010	-0.217	0.226	-0.200	-0.214	0.085	0.086	0.032
SOD	0.291	0.024	0.003	-0.109	0.328	0.053	-0.049	0.225	-0.427	-0.014	0.436	0.225	-0.518	0.202	-0.024	0.081
POD	0.267	-0.031	0.138	-0.134	-0.035	-0.156	-0.433	-0.458	-0.236	0.541	-0.176	-0.212	-0.058	0.035	-0.197	-0.015
CAT	0.233	-0.195	0.123	0.121	0.161	-0.734	-0.029	0.420	0.193	0.039	-0.157	0.161	0.100	0.020	-0.192	-0.025
Re-watering (RW) condition																
RWC	0.527	-0.104	0.067	-0.127	0.168	-0.250	-0.721	-0.283								
RMP	-0.500	0.277	-0.170	-0.081	0.154	0.086	-0.597	0.500								
MDA	-0.379	-0.193	0.316	-0.596	-0.327	0.300	-0.144	-0.384								
Pro	-0.073	-0.590	0.247	-0.194	0.680	0.022	0.139	0.259								
Protein	0.386	-0.414	-0.248	-0.182	-0.480	0.255	-0.060	0.535								
SOD	-0.101	-0.037	-0.703	-0.509	0.100	-0.414	0.180	-0.147								
POD	-0.344	-0.412	0.170	0.277	-0.365	-0.674	-0.110	0.084								
CAT	-0.213	-0.430	-0.470	0.465	0.076	0.386	-0.188	-0.376								