

Supplementary data

Pivotal metabolic pathways related to water deficit tolerance and growth recovery of whole maize plant

Chang-Bin Sun, Xian-Wei Fan, Hai-Yang Hu, Yu Liang, Zhang-Bao Huang, Jian-Long Pan, Liang Wang, and You-Zhi Li*

Supplementary Table 1 Original response ratios of 142 metabolites detected by MS in maize roots and leaves under water deficit and re-watering conditions.

The icons such as CL1024 mean the experimental treatment, where the first two letters such CL indicate the tissue type, the last two digits such as 24, 48 or 72 following the first words indicate the time duration (hour) of treatment under PEG. All analyses were performed using the SPSS 16.0 software as the default parameters. CL: control-treated leaves. CR: control-treated roots. HC, hierarchical cluster; PC, principal component; RW, re-watering; WD, water deficit; WL, WD-treated leaves; WR, WD-treated roots. Here, the time duration (hour) of treatment is the cumulative time from the beginning of the first treatments by 10% PEG.

Metabolites	Leaves under Control and WD treatments																							
	Leaves from three individual plants grown for 24 h under control condition without addition of PEG						Leaves from three individual plants grown for 24 h by 10% PEG						Leaves from three individual plants grown for 48 h under control condition without addition of PEG						Leaves from three individual plants grown for 48 h by 15% PEG					
	CL102 4	CL102 4	CL102 4	WL102 4	WL102 4	WL102 4	CL154 8	CL154 8	CL154 8	WL154 8	WL154 8	WL154 8	CL207 2	CL207 2	CL207 2	WL207 2	WL207 2	WL207 2						
Lactic acid	0.219	0.2291	0.2862	0.2406	0.2538	0.2274	0.2597	0.2167	0.2662	0.4429	0.5638	0.5058	0.3283	0.4753	0.4725	0.5277	0.6132	0.4421						
Glycolic acid	0.0738	0.0866	0.0708	0.0153	0.0124	0.0195	0.0449	0.0219	0.0628	0.0703	0.1046	0.0698	0.0188	0.0262	0.0164	0.1049	0.1005	0.1094						
Alanine	0.0004	0.0008	0.0004	0.0015	0.0015	0.0033	0.0011	0.0008	0.0004	0.0071	0.0084	0.0059	0.0009	0.0008	0.0009	0.0051	0.0059	0.003						
P1165.9	0.4933	0.3477	0.4156	0.0454	0.0705	0.0403	0.4119	0.4635	0.4188	0.0484	0.0605	0.0443	0.4775	0.4373	0.3757	0.0157	0.0178	0.0136						
P1157.8	0.0869	0.0833	0.0669	0	0	0	0.0593	0.0595	0.0691	0.0295	0.0278	0.0259	0.1246	0.149	0.1025	0.0651	0.042	0.079						
P1172.7	0.0979	0.0923	0.0759	0.063	0.0699	0.0561	0.1005	0.0973	0.0896	0.334	0.267	0.1999	0.0523	0.0718	0.0759	0.1703	0.215	0.1383						
P1182.1	0.0198	0.0371	0.0229	0.0339	0.0232	0.0446	0.0185	0.029	0.0238	0.2444	0.2226	0.2008	0.0039	0.0036	0.0032	0.0258	0.0153	0.0364						
P1190.6	0.0063	0.0092	0.0088	0.0185	0.0185	0.0185	0.0077	0.0073	0.008	0.1163	0.11	0.105	0.0102	0.0076	0.0081	0.052	0.0407	0.033						
P1208.5	0.0119	0.012	0.0118	0.023	0.0198	0.0363	0.0101	0.0115	0.0115	0.0199	0.023	0.0168	0.011	0.0096	0.0136	0.0064	0.0051	0.0079						
Valine	0.1081	0.1081	0.0987	0.0287	0.0322	0.0451	0.1061	0.1043	0.1003	0.0038	0.0054	0.0049	0.0137	0.0144	0.0164	0.0217	0.0123	0.0094						

Proline	0.0589	0.0559	0.0485	0.0805	0.0853	0.0866	0.0337	0.0305	0.0498	0.1058	0.1425	0.1473	0.04	0.0409	0.0333	0.0864	0.061	0.0818
P1540.4	0.095	0.1019	0.1271	0.0189	0.0493	0.0397	0.1538	0.1383	0.1328	0.1728	0.1644	0.1429	0.1225	0.1423	0.1778	0.043	0.0576	0.0208
P1553.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P1559.5	0.0297	0.0285	0.0196	0.0382	0.0296	0.0469	0.0474	0.071	0.0428	0.1454	0.1592	0.1015	0.0719	0.0796	0.0752	0.0469	0.0329	0.0522

Suppl. Table 1 *Continued*

Metabolites	Leaves under Control and WD treatments																							
	Leaves from three individual plants grown for 24 h under control condition without addition of PEG						Leaves from three individual plants treated for 24 h by 10% PEG						Leaves from three individual plants grown for 48 h under control condition without addition of PEG			Leaves from three individual plants treated for 48 h by 15% PEG			Leaves from three individual plants grown for 72 h under control condition without addition of PEG			Leaves from three individual plants treated for 72 h by 20% PEG		
	CL102 4	CL102 4	CL102 4	WL102 4	WL102 4	WL102 4	CL154 8	CL154 8	CL154 8	WL154 8	WL154 8	WL154 8	CL207 2	CL207 2	CL207 2	WL207 2	WL207 2	WL207 2						
P1570.8	0.0131	0.0159	0.0141	0.0171	0.0162	0.0181	0.0281	0.0214	0.0146	0.1628	0.0964	0.1306	0.0334	0.0211	0.0383	0.0138	0.0127	0.0045						
P1583.9	0.0517	0.0665	0.0749	0.0627	0.0685	0.057	0.0767	0.0668	0.0713	0.1225	0.1343	0.1294	0.1502	0.1495	0.1517	0.0321	0.0223	0.0441						
P1606.9	0.0056	0.0052	0.0049	0.025	0.0195	0.0306	0.01	0.0075	0.0043	0.0087	0.0098	0.004	0.0099	0.0065	0.0052	0.0033	0.0017	0.0042						
Glutamine	0.6497	0.6497	0.6497	1.2128	1.2277	1.2292	0.2105	0.235	0.2506	0.8319	0.9672	0.8475	0.0117	0.0084	0.0093	0.0123	0.02	0.0114						
Spermine	0.0575	0.0368	0.0464	0.0408	0.0392	0.0601	0.0523	0.0379	0.0505	0.0382	0.0628	0.0808	0.0575	0.0464	0.0368	0.0082	0.0111	0.0065						
Pentonic acid	0.055	0.0606	0.036	0.0375	0.0306	0.0443	0.0984	0.1104	0.0499	0.2141	0.1535	0.1541	0.0862	0.0483	0.0956	0.0837	0.0894	0.0852						
P1661.9	0.0367	0.0349	0.0418	0.0303	0.0413	0.0516	0.0209	0.031	0.0407	0.0869	0.1054	0.0909	0.013	0.01	0.014	0.0613	0.0513	0.0308						
Asprgine	0.6094	0.5951	0.5423	0.8306	0.8513	0.8806	0.4253	0.5153	0.5626	1.005	1.4009	1.025	0.5002	0.5109	0.4495	0.6094	0.5423	0.5951						
P1689.5	0.0039	0.0048	0.0036	0.0047	0.0045	0.0045	0.0027	0.0043	0.0035	0.1313	0.0994	0.0675	0.007	0.005	0.0026	0.1553	0.1043	0.1031						
P1698.5	0.013	0.0125	0.0111	0.0101	0.0108	0.0113	0.0718	0.0552	0.0355	0.0485	0.0208	0.0531	0.0103	0.013	0.0064	0.0049	0.003	0.0042						
P1734.9	0.0072	0.0046	0.0053	0.0024	0.006	0.0042	0.0075	0.0085	0.0055	0.0155	0.0186	0.0143	0.0115	0.015	0.018	0.0043	0.0126	0.0065						
P1741.0	0.0149	0.0162	0.0251	0.009	0.0148	0.0252	0.0408	0.0604	0.0315	0.0414	0.0255	0.0345	0.0428	0.0406	0.0505	0.0441	0.0439	0.0454						
cis-Conitic acid	2.0237	1.4192	1.6207	1.2517	1.1995	1.3705	2.7068	1.7727	1.6182	1.0627	1.2928	1.1158	2.3981	2.1097	1.6372	1.742	1.0654	1.4312						
P1779.8	0.0146	0.0173	0.024	0.0415	0.0284	0.0389	0.0307	0.0221	0.023	0.4042	0.5035	0.6411	0.0312	0.044	0.0758	0.6618	0.44	0.4111						
P1784.3	0.0211	0.0223	0.0197	0.1022	0.1049	0.1082	0.0142	0.0142	0.0182	0.1735	0.1593	0.1188	0.0454	0.0505	0.0508	0.0573	0.0539	0.0508						
Glucaric acid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0029	0.0017	0.0017						
Citric acid	0.9238	1.2364	0.9675	0.643	0.6842	0.7526	0.954	1.0678	0.9617	0.147	0.1446	0.1535	0.8045	0.9144	0.8615	0.1425	0.189	0.1274						

P1833.7	0.002	0.0035	0.002	0.0027	0.0038	0.0049	0.0043	0.0033	0.0023	0.0043	0.0046	0.0049	0.0036	0.0043	0.0049	0.0043	0.0044	0.0045
P1844.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tetradecanoic acid	0.1821	0.181	0.1548	0.1538	0.1433	0.1459	0.1433	0.1493	0.1543	0.2674	0.2097	0.2585	0.2017	0.1958	0.2546	0.2588	0.3278	0.1205

Suppl. Table 1 *Continued*

Metabolites	Leaves under Control and WD treatments																	
	Leaves from three individual plants grown for 24 h under control condition without addition of PEG						Leaves from three individual plants grown for 48 h under control condition without addition of PEG						Leaves from three individual plants grown for 72 h under control condition without addition of PEG					
	CL102 4	CL102 4	CL102 4	WL102 4	WL102 4	WL102 4	CL154 8	CL154 8	CL154 8	WL154 8	WL154 8	WL154 8	CL207 2	CL207 2	CL207 2	WL207 2	WL207 2	WL207 2
Fructose	1.2705	1.2536	1.3895	2.5813	2.0967	2.3569	0.8555	0.6439	1.6458	4.754	3.3547	3.6395	0.1996	0.3173	0.254	1.7728	3.0896	1.6271
P1877.1	0.8466	0.8929	0.73	2.4606	2.9945	2.5285	0.4298	0.5854	0.7409	2.163	1.9971	2.8829	0.1036	0.1121	0.1509	3.3471	2.9387	2.681
Galactose	4.7347	5.8067	5.2641	10.241	8.803	8.9809	4.3372	6.229	5.1135	7.8516	7.0242	6.6838	4.5416	4.038	5.8762	4.0863	6.7679	4.7972
Glucose	1.0865	1.0912	0.9948	2.6249	1.9309	2.1452	1.1413	1.4303	0.9205	2.4754	2.582	1.8923	1.3039	1.2235	1.4129	1.0365	1.7299	1.1588
Sorbitol	0.5624	0.5581	0.4417	0.6931	0.6723	0.2003	0.1385	0.2766	0.3137	0.1283	0.1223	0.115	0.3224	0.25	0.7663	0.5412	0.5467	0.6359
Tyrosine	0.4226	0.5581	0.4497	0.4264	0.2653	0.2929	0.2151	0.1867	0.3651	0.8163	1.1387	0.587	0.1894	0.1396	0.249	0.1443	0.2475	0.1873
P1946.6	0.215	0.1682	0.2168	0.3146	0.3801	0.4059	0.0886	0.261	0.2001	0.5607	0.6042	0.4063	0.1916	0.0834	0.2534	0.0328	0.0684	0.0432
P1954.3	0.0147	0.0128	0.008	0.0157	0.0164	0.0157	0.0114	0.0114	0.0114	0.0098	0.0086	0.0085	0.0123	0.0167	0.0145	0.021	0.029	0.013
Galactonic acid	0.0507	0.039	0.0299	0.0433	0.0399	0.0451	0.0283	0.0283	0.0293	0.045	0.0628	0.0472	0.1856	0.2019	0.4211	0.1716	0.1364	0.191
P1979.6	0.0916	0.0884	0.0767	0.1499	0.1291	0.0895	0.1435	0.1158	0.0645	0.1697	0.1612	0.1112	0.0393	0.0283	0.0447	0.0444	0.0386	0.0856
Gluconic acid	0.1365	0.1961	0.1024	0.2908	0.2166	0.2539	0.0356	0.0561	0.0894	0.0755	0.0929	0.1041	0.0232	0.014	0.0264	0.0858	0.0448	0.0984
P2015.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P2031.5	0.2063	0.2719	0.2321	0.2099	0.1341	0.3401	0.4423	0.4827	0.2443	0.282	0.6175	0.4567	0.0277	0.022	0.0208	0.0356	0.0309	0.0198
Hexadecanoic acid	0.3866	0.389	0.412	0.4351	0.3234	0.5014	0.6854	0.4795	0.4004	0.3122	0.4857	0.3772	0.3663	0.5316	0.2048	0.3454	0.3115	0.2026
P2056.8	0.2215	0.2449	0.291	0.3267	0.3327	0.3913	0.4005	0.3459	0.2715	0.4416	0.3927	0.3529	0.343	0.3393	0.3732	0.2926	0.6451	0.3339
myo-Inositol	0.4647	0.5219	0.5706	0.6206	0.6132	0.6555	0.8003	0.6022	0.5825	1.1978	1.566	1.6295	0.6159	0.5847	0.6569	1.2189	1.9672	1.8153
P2099.7	0.0398	0.0333	0.0408	0.0369	0.0384	0.0681	0.0603	0.1083	0.0506	0.0542	0.0528	0.0923	0.0609	0.0621	0.1177	0.0396	0.0648	0.0343
P2109.5	0.01	0.0158	0.0129	0.0035	0.0046	0.0056	0.0187	0.0137	0.0127	0.0207	0.0211	0.0214	0.0222	0.0173	0.0332	0.0219	0.0223	0.0263

P2133.4	0.0218	0.034	0.0249	0.0951	0.109	0.1541	0.0269	0.023	0.025	0.3251	0.3384	0.1754	0.0932	0.0617	0.13	0.0444	0.0427	0.05
P2139.1	0.1027	0.0835	0.0991	0.0205	0.0553	0.052	0.086	0.0742	0.0982	0.1742	0.2331	0.1051	0.0759	0.105	0.1466	0.0824	0.085	0.0622

Suppl. Table 1 *Continued*

Metabolites	Leaves under Control and WD treatments																	
	Leaves from three individual plants grown for 24 h under control condition without addition of PEG			Leaves from three individual plants treated for 24 h by 10% PEG			Leaves from three individual plants grown for 48 h under control condition without addition of PEG			Leaves from three individual plants treated for 48 h by 15% PEG			Leaves from three individual plants grown for 72 h under control condition without addition of PEG			Leaves from three individual plants treated for 72 h by 20% PEG		
	CL102 4	CL102 4	CL102 4	WL102 4	WL102 4	WL102 4	CL154 8	CL154 8	CL154 8	WL154 8	WL154 8	WL154 8	CL207 2	CL207 2	CL207 2	WL207 2	WL207 2	WL207 2
P2154.2	0.0381	0.0293	0.027	0.0831	0.0761	0.068	0.0273	0.0238	0.0274	0.0525	0.0406	0.0651	0.0099	0.0142	0.0189	0.0557	0.0735	0.0659
P2179.8	0.1015	0.1266	0.1378	0.901	1.0333	1.1761	0.1712	0.1288	0.1391	0.6711	0.6193	0.3953	0.177	0.1118	0.2472	0.8246	0.9474	0.886
P2190.2	0.5231	0.8662	0.7103	0.5039	0.2536	0.2943	0.1968	0.1852	0.1253	0.3468	0.3043	0.196	0.0906	0.0664	0.1487	0.4047	0.4048	0.3386
P2210.7	0.0811	0.113	0.1142	0.1071	0.0801	0.1506	0.1736	0.1445	0.1144	0.1493	0.2184	0.168	0.1296	0.1768	0.1693	0.0855	0.08	0.0853
Octadecenoic acid	0.2452	0.2187	0.2608	0.2102	0.1881	0.3133	0.2032	0.2736	0.265	0.3979	0.3301	0.2427	0.1668	0.1703	0.2306	0.2472	0.1259	0.1581
Tryptamine	0.0118	0.0126	0.0143	0.0088	0.015	0.0141	0.0646	0.0938	0.0278	0.0471	0.0884	0.0879	0.0531	0.0385	0.0789	0.0124	0.0239	0.0128
P2279.0	0.0099	0.0108	0.0091	0.0258	0.0254	0.0243	0.0193	0.0203	0.0118	0.2173	0.2308	0.2579	0.0576	0.0623	0.0618	0.0633	0.0682	0.079
Fructose-6-phosphate	1.0936	1.1094	1.6517	1.1952	1.0954	1.3546	2.083	1.7285	1.6165	2.6433	2.3411	1.5012	2.0619	1.4299	2.1209	1.0027	0.8105	0.8315
Glucose-6-phosphate	0.0187	0.0195	0.0199	0.026	0.0124	0.0252	0.0494	0.0226	0.0206	0.044	0.0407	0.0829	0.2311	0.2359	0.2468	0.102	0.1098	0.1309
P2331.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P2342.9	0.1398	0.1329	0.165	0.1114	0.1106	0.141	0.1238	0.0623	0.1581	0.15	0.149	0.058	0.0539	0.1205	0.091	0.0809	0.0861	0.0697
P2349.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P2357.7	0.0197	0.0329	0.0342	0.0921	0.0469	0.0561	0.0135	0.0393	0.036	0.0573	0.0605	0.0894	0.0326	0.0313	0.0549	0.0889	0.0302	0.0514
Galacturonic acid	0.0284	0.0345	0.0386	0.034	0.0224	0.0268	0.0501	0.0479	0.0408	0.0521	0.0506	0.0471	0.061	0.0463	0.0552	0.068	0.0401	0.0531
P2378.3	0.0806	0.0609	0.0554	0.0481	0.0507	0.0423	0.0708	0.0465	0.0538	0.0552	0.0369	0.0186	0.0538	0.0278	0.0586	0.0208	0.0095	0.0126
P2398.8	0.0431	0.0398	0.0423	0.0906	0.0622	0.075	0.044	0.0378	0.0431	0.0723	0.0988	0.0479	0.0558	0.0316	0.0455	0.0541	0.0274	0.0354
P2416.9	0.0127	0.0102	0.0193	0.011	0.011	0.013	0.0201	0.0132	0.0193	0.061	0.03	0.046	0.0156	0.0162	0.023	0.026	0.0233	0.0153

Suppl. Table 1 *Continued*

Metabolites	Leaves under Control and WD treatments																				
	Leaves from three individual plants grown for 24 h under control condition without addition of PEG						Leaves from three individual plants treated for 24 h by 10% PEG			Leaves from three individual plants grown for 48 h under control condition without addition of PEG			Leaves from three individual plants treated for 48 h by 15% PEG			Leaves from three individual plants grown for 72 h under control condition without addition of PEG			Leaves from three individual plants treated for 72 h by 20% PEG		
	CL102 4	CL102 4	CL102 4	WL102 4	WL102 4	WL102 4	CL154 8	CL154 8	CL154 8	WL154 8	WL154 8	WL154 8	CL207 2	CL207 2	CL207 2	WL207 2	WL207 2	WL207 2			
P2436.3	0.002	0.0022	0.0021	0.0014	0.0039	0.002	0.0016	0.0021	0.0021	0.0071	0.0078	0.0085	0.0016	0.0016	0.0016	0.0012	0.0011	0.0014			
P2447.6	0.0186	0.0306	0.0407	0.0038	0.0042	0.004	0.08	0.1158	0.0609	0.0136	0.0104	0.008	0.0175	0.0202	0.035	0.0182	0.0167	0.0175			
P2466.7	0.0419	0.0409	0.0386	0.0227	0.0544	0.0664	0.0391	0.0467	0.0331	0.0948	0.0809	0.0811	0.1633	0.15	0.1403	0.0823	0.0566	0.0751			
P2492.9	0.0579	0.047	0.0868	0.0513	0.0424	0.0612	0.0571	0.0773	0.084	0.1278	0.1023	0.0474	0.0859	0.0859	0.1662	0.1063	0.082	0.0619			
Altrose	0.1206	0.1502	0.0909	0.1386	0.1241	0.1305	0.1206	0.1502	0.0909	0.069	0.1518	0.1519	0.0384	0.1183	0.0989	0.045	0.1284	0.0996			
P2531.6	0.0356	0.0522	0.0708	0.0479	0.042	0.0622	0.0616	0.0772	0.071	0.1256	0.0427	0.0861	0.0866	0.0836	0.1665	0.0915	0.1086	0.0932			
P2549.5	0.025	0.0746	0.0544	0.0489	0.0294	0.0367	0.0401	0.0381	0.0499	0.0829	0.1152	0.1121	0.0324	0.0417	0.0666	0.0486	0.05	0.0415			
P2583.1	0.098	0.1713	0.2022	0.1007	0.0851	0.1012	0.1549	0.3179	0.3454	0.3557	0.1487	0.2313	0.0934	0.1013	0.2437	0.1738	0.3584	0.1491			
Sucrose	11.812	11.255	11.515	18.65	18.154	19.756	13.173	17.685	10.515	9.2888	7.1054	7.0711	9.026	7.7752	11.545	6.1297	8.4976	7.5251			
Adenosine	0.0523	0.0582	0.0788	0.0204	0.0162	0.0305	0.1888	0.1439	0.0857	0.1609	0.2236	0.1235	0.0352	0.0587	0.0893	0.0877	0.0507	0.0389			
P2652.6	0.0201	0.0214	0.024	0.0166	0.0135	0.0164	0.0407	0.0523	0.0353	0.0397	0.075	0.0612	0.0304	0.041	0.0456	0.0592	0.0464	0.0671			
Trehalose	0.0428	0.0386	0.0382	0.0169	0.0146	0.0121	0.016	0.0187	0.0222	0.0778	0.0497	0.0712	0.0142	0.0162	0.013	0.2404	0.2242	0.2849			
P2689.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
P2702.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Maltose	0.3264	0.319	0.2266	0.0682	0.047	0.0799	0.194	0.2095	0.212	0.1193	0.1158	0.0867	0.0544	0.1174	0.1352	0.1176	0.1222	0.0984			
P2745.4	0.0184	0.0268	0.0294	0.0315	0.0347	0.0369	0.0497	0.0584	0.0327	0.1907	0.2586	0.3229	0.1371	0.1267	0.2452	0.2827	0.3643	0.4915			
P2741.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
P2761.1	0.0314	0.0347	0.0412	0.0448	0.0369	0.0543	0.0491	0.0595	0.0415	0.1085	0.1388	0.0865	0.0252	0.0484	0.0635	0.0642	0.052	0.0325			
P2775.3	0.0454	0.04	0.0455	0.039	0.0473	0.0628	0.1565	0.1346	0.0932	0.1456	0.2346	0.2567	0.0531	0.1021	0.1523	0.1294	0.0604	0.0619			

Suppl. Table 1 *Continued*

Metabolites	Leaves under Control and WD treatments																							
	Leaves from three individual plants grown for 24 h under control condition without addition of PEG						Leaves from three individual plants treated for 24 h by 10% PEG						Leaves from three individual plants grown for 48 h under control condition without addition of PEG			Leaves from three individual plants treated for 48 h by 15% PEG			Leaves from three individual plants grown for 72 h under control condition without addition of PEG			Leaves from three individual plants treated for 72 h by 20% PEG		
	CL102 4	CL102 4	CL102 4	WL102 4	WL102 4	WL102 4	CL154 8	CL154 8	CL154 8	WL154 8	WL154 8	WL154 8	CL207 2	CL207 2	CL207 2	WL207 2	WL207 2	WL207 2						
P2802.3	0.0157	0.0154	0.0195	0.0377	0.0277	0.0441	0.0439	0.0695	0.0241	0.0906	0.0979	0.0861	0.0439	0.0694	0.1061	0.0708	0.0553	0.0244						
P2821.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
P2825.7	0.0174	0.0203	0.0154	0.0194	0.0149	0.0179	0.0255	0.0141	0.017	0.0145	0.011	0.0147	0.0185	0.0224	0.0285	0.0385	0.0311	0.0316						
P2847.3	0.1457	0.1197	0.1584	0.1221	0.0825	0.1305	0.1285	0.1786	0.1516	0.1607	0.1063	0.1206	0.1234	0.1693	0.1443	0.1936	0.1765	0.1252						
P2863.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
P2879.5	0.0365	0.0273	0.0545	0.0263	0.0263	0.0266	0.0239	0.0339	0.0539	0.2409	0.3371	0.1628	0.036	0.0182	0.0258	0.0612	0.0419	0.0408						
P2887.1	0.044	0.0431	0.0873	0.0411	0.0497	0.0404	0.0693	0.0549	0.073	0.0699	0.0329	0.0841	0.0509	0.065	0.0436	0.0276	0.0233	0.018						
P2917.9	0.0101	0.0103	0.0181	0.0118	0.0104	0.0165	0.0151	0.0382	0.0217	0.0153	0.0165	0.0284	0.0535	0.0211	0.0605	0.0241	0.0198	0.0121						
P2925.7	0.0009	0.0009	0.0012	0.0008	0.0005	0.0013	0.0013	0.0026	0.0018	0.0055	0.0055	0.0055	0.0019	0.0021	0.0013	0.0084	0.0076	0.0088						
P2948.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
P2955.0	0.0242	0.0254	0.0322	0.0129	0.014	0.0157	0.0356	0.0506	0.0308	0.1478	0.1071	0.1371	0.0104	0.0182	0.0156	0.1141	0.1267	0.1253						
P2973.4	0.0025	0.0037	0.0034	0.0078	0.0068	0.0078	0.0028	0.0048	0.004	0.0073	0.0038	0.0055	0.0045	0.0061	0.0111	0.0005	0.0005	0.0005						
P3003.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
P3090.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
P3053.6	0.0022	0.0036	0.0037	0.0042	0.0045	0.0054	0.0027	0.0023	0.0038	0.0084	0.0086	0.011	0.0008	0.0013	0.0018	0.0127	0.0139	0.0067						
P3081.4	0.003	0.0019	0.0033	0.008	0.0064	0.0054	0.0054	0.0025	0.0021	0.0172	0.0153	0.0119	0.0143	0.0103	0.0164	0.0354	0.041	0.0298						
P3099.2	0.0967	0.123	0.1281	0.1106	0.1727	0.1799	0.3423	0.4713	0.2364	0.6228	0.3315	0.3705	0.2305	0.3385	0.5493	0.471	0.2343	0.3207						
P3119.1	0.0332	0.0158	0.0434	0.0725	0.062	0.062	0.0451	0.0509	0.0373	0.0597	0.0697	0.0806	0.1526	0.1046	0.1824	0.1102	0.1265	0.1205						

Suppl. Table 1 *Continued*

Metabolites	Leaves under Control and WD treatments																	
	Leaves from three individual plants grown for 24 h under control condition without addition of PEG			Leaves from three individual plants treated for 24 h by 10% PEG			Leaves from three individual plants grown for 48 h under control condition without addition of PEG			Leaves from three individual plants treated for 48 h by 15% PEG			Leaves from three individual plants grown for 72 h under control condition without addition of PEG			Leaves from three individual plants treated for 72 h by 20% PEG		
	CL102 4	CL102 4	CL102 4	WL102 4	WL102 4	WL102 4	CL154 8	CL154 8	CL154 8	WL154 8	WL154 8	WL154 8	CL207 2	CL207 2	CL207 2	WL207 2	WL207 2	WL207 2
P3138.0	0.0307	0.0311	0.0327	0.004	0.0088	0.0065	0.0565	0.0564	0.0441	0.1305	0.13	0.1604	0.0404	0.0486	0.0303	0.0218	0.0232	0.015
P3182.2	0.0071	0.0089	0.0093	0.013	0.019	0.0185	0.0166	0.0117	0.0113	0.0247	0.0274	0.0366	0.0409	0.0421	0.0823	0.0691	0.0245	0.0479
P3202.6	0.0014	0.0009	0.0014	0.0008	0.0005	0.0013	0.0018	0.0026	0.0013	0.0008	0.0017	0.0025	0.0019	0.0021	0.0013	0.0084	0.0076	0.0058
P3246.4	0.0015	0.0012	0.0019	0.0008	0.0005	0.0013	0.0013	0.0026	0.0018	0.0055	0.0055	0.0055	0.0019	0.0011	0.0013	0.0084	0.0076	0.0088
P3270.7	0.001	0.001	0.0014	0.0007	0.0009	0.0006	0.0038	0.0038	0.0015	0.0034	0.0037	0.0034	0.0012	0.0019	0.0026	0.0019	0.0019	0.0019
P3283.7	0.0008	0.0009	0.001	0.001	0.0009	0.0009	0.0017	0.002	0.0013	0.0043	0.0033	0.0023	0.001	0.001	0.003	0.0023	0.0011	0.0017
P3337.7	0.0253	0.0209	0.0218	0.0123	0.0189	0.0152	0.0169	0.0246	0.0232	0.0421	0.024	0.0163	0.0169	0.0199	0.0116	0.0597	0.057	0.0328
P3377.6	0.0016	0.0016	0.0039	0.0014	0.0037	0.0045	0.0012	0.0014	0.0025	0.0055	0.0056	0.0045	0.004	0.0081	0.0077	0.0044	0.0085	0.0041
P3405.5	0.001	0.0013	0.0025	0.0024	0.0006	0.001	0.0024	0.0018	0.003	0.0109	0.0094	0.008	0.0014	0.0011	0.0014	0.0041	0.0042	0.0026
P3421.2	0.0028	0.0026	0.0021	0.0017	0.0026	0.003	0.0017	0.0012	0.0019	0.0044	0.0037	0.0049	0.002	0.0028	0.004	0.0053	0.005	0.0046
P3471.5	0.0014	0.0027	0.003	0.0015	0.002	0.0033	0.0023	0.0037	0.0032	0.0252	0.0252	0.0252	0.0023	0.003	0.0039	0.0027	0.0029	0.0015
P3482.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P3502.3	0.0009	0.0009	0.0006	0.0012	0.0015	0.0017	0.002	0.0011	0.0008	0.008	0.008	0.008	0.001	0.0034	0.0009	0.002	0.0021	0.0043

Suppl. Table 1 *Continued*

Metabolites	Leaves under RW treatment					
	Leaves from three individual plants grown for 72 h under control condition without addition of PEG			Leaves from three individual plants treated for 72 h under RW treatment following the 24 h treatment in 20% PEG		
	CL0072	CL0072	CL0072	WL0072	WL0072	WL0072
Lactic acid	0.43318	0.30904	0.45952	0.24751	0.2263	0.18957
Glycolic acid	0.11199	0.14892	0.21694	0.09593	0.08	0.07052
Alanine	0.00116	0.00178	0.00126	0.02987	0.02894	0.04035
P1165.9	0.00187	0.00121	0.00154	0.4664	0.49873	0.50348
P1157.8	0.11133	0.12728	0.13255	0.10163	0.13852	0.1969
P1172.7	0.10347	0.09796	0.0858	0.11262	0.10343	0.08022
P1182.1	0.0514	0.02187	0.05132	0.04556	0.02457	0.07345
P1190.6	0.00988	0.00808	0.009	0.00792	0.00675	0.00909
P1208.5	0.00728	0.00668	0.00789	0.00777	0.00507	0.00618
Valine	0.01116	0.01537	0.0189	0.11632	0.04898	0.04785
P1222.0	0.00625	0.01404	0.0089	0.0036	0.00363	0.00457
P1250.9	0.00192	0.00447	0.00219	0.00297	0.00486	0.00566
Benzoic acid	0.01301	0.01326	0.01192	0.0136	0.01395	0.00951
P1267.8	0.07821	0.07821	0.09672	0.20763	0.09094	0.14786
Phosphoric acid	1.27498	1.56056	2.53564	1.88615	1.84183	1.85561
Isoleucine	0.00522	0.00663	0.0048	0.01494	0.01469	0.02043
Glycine	0.22427	0.21252	0.23601	0.27839	0.2423	0.16326
Succinic acid	0.23254	0.22867	0.23641	0.29032	0.26298	0.22786
Glyceric acid	0.33118	0.28278	0.5694	0.38342	0.32477	0.32773
P1342.7	0.00417	0.00431	0.00445	0.00315	0.0011	0.00343
a-Ketoglutarate	0.04049	0.03852	0.03382	0.02766	0.04728	0.03785
Serine	0.05876	0.08084	0.08084	0.06555	0.0593	0.07171
P1375.4	0.00469	0.00349	0.00482	0.02816	0.01024	0.03092
Threonine	0.01658	0.01204	0.01161	0.17606	0.12727	0.11962
Homocysteine	0.10164	0.1507	0.09132	0.10361	0.09759	0.10152
P1425.2	0	0	0	0.11224	0.10595	0.06771
P1459.6	0.01299	0.01349	0.01285	0.05386	0.035	0.0251
P1471.2	0.03074	0.0436	0.03932	0.04895	0.02263	0.05825
Malic acid	1.40134	1.51384	1.93335	2.52304	2.14999	2.12823
P1511.5	0	0	0	0	0	0
Aspartic acid	0	0	0	0	0	0
Proline	0.03908	0.04168	0.03947	0.05816	0.04667	0.03777
P1540.4	0.07179	0.07285	0.07651	0.28365	0.10899	0.17443

Suppl. Table 1 *Continued*

Metabolites	Leaves under RW treatment					
	Leaves from three individual plants grown for 72 h under control condition without addition of PEG			Leaves from three individual plants treated for 72 h under RW treatment following the 24 h treatment in 20% PEG		
	CL0072	CL0072	CL0072	WL0072	WL0072	WL0072
P1553.2	0	0	0	0	0	0
P1559.5	0.00224	0.00662	0.00493	0.11649	0.05275	0.0832
P1570.8	0.03132	0.03607	0.04059	0.02452	0.02247	0.02479
P1583.9	0.03455	0.03425	0.03433	0.10497	0.09649	0.07335
P1606.9	0.01303	0.01897	0.01595	0.01087	0.01626	0.01785
Glutamine	0.0144	0.01029	0.0136	0.39015	0.42693	0.39703
Spermine	0.00838	0.00853	0.01094	0.07066	0.05312	0.05054
Pentonic acid	0.06644	0.0378	0.04576	0.12201	0.14426	0.09299
P1661.9	0.03693	0.04794	0.0336	0.04181	0.04112	0.04082
Asprgine	0.50083	0.45161	0.4024	0.47931	0.48338	0.49303
P1689.5	0.00322	0.00341	0.00494	0.00346	0.00281	0.00314
P1698.5	0.0033	0.00511	0.00407	0.00473	0.00516	0.00414
P1734.9	0.00119	0.0023	0.00174	0.02048	0.02137	0.02846
P1741.0	0.0299	0.06607	0.07944	0.00106	0.00427	0.00201
cis-Conitic acid	5.0201	2.48984	4.79587	5.49828	4.49968	4.33182
P1779.8	0.00862	0.0119	0.01026	0.01019	0.00831	0.00774
P1784.3	0.02157	0.06951	0.04212	0.01201	0.02633	0.01246
Glucaric acid	0.00118	0.00199	0.00164	0.06385	0.04014	0.05163
Citric acid	0.80349	0.91435	0.74435	2.21035	1.35151	1.86848
P1833.7	0.00349	0.0023	0.00338	0.0021	0.00168	0.00338
P1844.6	0	0	0	0	0	0
Tetradecanoic acid	0.12128	0.14949	0.15024	0.21393	0.18799	0.26689
Fructose	0.12269	0.34223	0.31446	4.8473	4.79534	4.61579
P1877.1	0.59275	0.57057	0.20231	2.67591	2.72996	2.48522
Galactose	2.94312	1.98783	2.09079	7.15456	6.7813	7.12186
Glucose	0.41781	0.55876	0.44607	2.13403	1.44754	1.83073
Sorbitol	0.32067	0.32851	0.41488	1.04702	0.54034	0.93119
Tyrosine	0.39799	0.42106	0.38629	0.12112	0.13287	0.17181
P1946.6	0.11626	0.14568	0.19464	0.33889	0.21122	0.35981
P1954.3	0.01168	0.01617	0.01365	0.02098	0.01591	0.02098
Galactonic acid	0.00366	0.00795	0.00956	0.07148	0.08431	0.09064
P1979.6	0.03862	0.04209	0.03237	0.27631	0.26328	0.1257
Gluconic acid	0.11668	0.09494	0.04009	0.06439	0.04869	0.05209
P2015.5	0	0	0	0	0	0

Suppl. Table 1 *Continued*

Metabolites	Leaves under RW treatment					
	Leaves from three individual plants grown for 72 h under control condition without addition of PEG			Leaves from three individual plants treated for 72 h under RW treatment following the 24 h treatment in 20% PEG		
	CL0072	CL0072	CL0072	WL0072	WL0072	WL0072
P2031.5	0.47892	0.45382	0.41972	0.59274	0.62611	0.48894
Hexadecanoic acid	0.35916	0.26033	0.54651	0.54961	0.55433	1.01074
P2056.8	0	0	0	0	0	0
myo-Inositol	0.80792	0.85798	0.88921	1.42753	1.17814	1.20258
P2099.7	0.06593	0.11267	0.12908	0.11908	0.12578	0.10696
P2109.5	0.0753	0.04591	0.04695	0.0555	0.06472	0.03453
P2133.4	0.05122	0.02966	0.04044	0	0	0
P2139.1	0.12223	0.10435	0.14396	0.27703	0.22257	0.21294
P2154.2	0.05105	0.11199	0.06476	0.18371	0.19358	0.21665
P2179.8	0.46099	0.59332	0.65303	0.00155	0.00155	0.00155
P2190.2	0.28017	0.28598	0.32303	0.62809	0.50961	0.45741
P2210.7	0.15153	0.17023	0.24795	0.18297	0.27307	0.21175
Octadecenoic acid	0.45982	0.48692	0.49553	0.2855	0.60073	0.63621
Tryptamine	0.04325	0.04381	0.04438	0.05945	0.04677	0.0552
P2279.0	0.04723	0.06693	0.03802	0.03062	0.03129	0.03004
Fructose-6-phosphate	1.96966	2.35302	2.24082	2.40257	2.05569	1.91169
Glucose-6-phosphate	0.14006	0.2494	0.25041	0.02235	0.02511	0.02925
P2331.2	0	0	0	0	0	0
P2342.9	0.33725	0.26635	0.18276	0.0942	0.07723	0.08253
P2349.7	0	0	0	0	0	0
P2357.7	0	0	0	0	0	0
Galacturonic acid	0.13435	0.09491	0.10943	0.19045	0.14747	0.14107
P2378.3	0.15369	0.12502	0.18237	0.13121	0.11243	0.09848
P2398.8	0.0315	0.04903	0.03948	0.06563	0.08621	0.06416
P2416.9	0.07522	0.16649	0.21162	0.12366	0.0971	0.08709
P2436.3	0.00511	0.00432	0.00694	0.03232	0.03318	0.02714
P2447.6	0.02865	0.0147	0.02521	0.00731	0.00701	0.00672
P2466.7	0.11833	0.07498	0.10319	0.11507	0.15845	0.11158
P2492.9	0.11115	0.25573	0.28816	0.3112	0.27377	0.23041
Altrose	0.14508	0.12442	0.11286	0	0	0
P2531.6	0.16403	0.22195	0.22506	0.27226	0.22551	0.19969
P2549.5	0.08579	0.10907	0.11218	0.06914	0.09677	0.0703
P2583.1	0.1901	0.1472	0.16392	0.21448	0.342	0.24704
Sucrose	11.8335	10.1135	12.8525	15.9802	15.9259	13.0601

Suppl. Table 1 *Continued*

Metabolites	Leaves under RW treatment					
	Leaves from three individual plants grown for 72 h under control condition without addition of PEG			Leaves from three individual plants treated for 72 h under RW treatment following the 24 h treatment in 20% PEG		
	CL0072	CL0072	CL0072	WL0072	WL0072	WL0072
Adenosine	0.08152	0.16771	0.16437	0.21732	0.19064	0.20427
P2652.6	0.12019	0.12019	0.12019	0.06488	0.08562	0.07438
Trehalose	0.10595	0.24014	0.10355	0.02619	0.0432	0.03346
P2689.5	0	0	0	0	0	0
P2702.2	0	0	0	0	0	0
Maltose	0.24054	0.29644	0.23564	0.18616	0.19655	0.17543
P2745.4	0.10599	0.09597	0.15395	0.04288	0.05597	0.05316
P2741.9	0	0	0	0	0	0
P2761.1	0.01373	0.01837	0.02415	0.10927	0.12216	0.10104
P2775.3	0.11053	0.23642	0.13812	0.08947	0.21733	0.1749
P2802.3	0.03764	0.07253	0.0617	0.22838	0.25165	0.21125
P2821.0	0	0	0	0	0	0
P2825.7	0.03929	0.0255	0.02078	0.02312	0.0279	0.02638
P2847.3	0.1216	0.23282	0.18557	0.13514	0.15791	0.14259
P2863.4	0	0	0	0.83062	0.72378	0.78894
P2879.5	0.03342	0.07918	0.07249	0.07119	0.10443	0.09887
P2887.1	0.01807	0.05072	0.05099	0.18849	0.14283	0.14757
P2917.9	0.03489	0.05978	0.02655	0.02284	0.01603	0.01457
P2925.7	0.00121	0.00102	0.00099	0.00072	0.00109	0.00271
P2948.8	0	0	0	0	0	0
P2955.0	0.02135	0.03934	0.03736	0.00806	0.01187	0.01203
P2973.4	0.00135	0.00135	0.00111	0.01165	0.01592	0.01455
P3003.3	0	0	0	0	0	0
P3090.3	0	0	0	0	0	0
P3053.6	0.01289	0.01493	0.01427	0.00119	0.00115	0.00414
P3081.4	0.05094	0.04773	0.07483	0.0033	0.0033	0.0033
P3099.2	0.20771	0.31529	0.51577	0.18557	0.2619	0.25327
P3119.1	0.04164	0.06928	0.04299	0.03197	0.06772	0.04175
P3138.0	0.03048	0.02564	0.02177	0.00367	0.00152	0.00418
P3182.2	0.0293	0.03935	0.06716	0.03563	0.05958	0.05735
P3202.6	0.00221	0.00102	0.00099	0.00072	0.00109	0.00271
P3246.4	0.00121	0.00102	0.00099	0.00072	0.00109	0.00271
P3270.7	0.00364	0.00141	0.00431	0.00083	0.00095	0.00071
P3283.7	0.02028	0.02472	0.02473	0.00177	0.00092	0.00261
P3337.7	0.00954	0.01116	0.01857	0.01642	0.01843	0.02289
P3377.6	0.01195	0.00807	0.00722	0.0033	0.00464	0.0058
P3405.5	0.00375	0.00658	0.00367	0.00148	0.00482	0.00249
P3421.2	0.00311	0.00481	0.00282	0.00623	0.00738	0.00865
P3471.5	0.00766	0.0066	0.00989	0.00168	0.00185	0.00373

P3482.4	0	0	0	0	0	0
P3502.3	0.00441	0.00459	0.00389	0.00069	0.00057	0.00082

Suppl. Table 1 *Continued*

Metabolites	Roots under Control and WD treatments																	
	Roots from three individual plants grown for 24 h under control condition without addition of PEG			Roots from three individual plants treated for 24 h by 10% PEG			Roots from three individual plants grown for 48 h under control condition without addition of PEG			Roots from three individual plants treated for 48 h by 15% PEG			Roots from three individual plants grown for 72 h under control condition without addition of PEG			Roots from three individual plants treated for 72 h by 20% PEG		
	CR1024	CR1024	CR1024	WR1024	WR1024	WR1024	CR1548	CR1548	CR1548	WR1548	WR548	WR1548	CR2072	CR2072	CR2072	WR2072	WR2072	WR2072
Lactic acid	0.14759	0.14653	0.13657	0.28361	0.37476	0.28121	0.12348	0.17391	0.09035	0.25203	0.2212	0.15491	0.22725	0.18016	0.15002	0.25248	0.25613	0.26797
Glycolic acid	0.03879	0.03587	0.02329	0.03313	0.03964	0.03638	0.01457	0.01193	0.01327	0.01509	0.01023	0.01481	0.04951	0.06532	0.04086	0.11354	0.08354	0.09038
Alanine	0.17121	0.18983	0.08739	0.15164	0.17514	0.16339	0.27336	0.25367	0.1635	0.13206	0.28559	0.14139	0.22035	0.26015	0.21177	0.33136	0.3337	0.34151
P1165.9	0.56092	0.57717	0.512	0.39685	0.45109	0.42397	0.58257	0.5986	0.44059	0.40842	0.44852	0.36832	0.47416	0.37283	0.3846	0.58411	0.56761	0.56479
P1157.8	0.06113	0.03433	0.05456	0.05122	0.12881	0.09001	0.04807	0.03805	0.04802	0.07547	0.06277	0.08817	0.03387	0.03025	0.0404	0.01538	0.03237	0.03204
P1172.7	0.04915	0.04976	0.06497	0.04131	0.06668	0.09183	0.06647	0.08834	0.11935	0.04571	0.04445	0.04698	0.05207	0.05001	0.0529	0.12255	0.10033	0.09077
P1182.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P1190.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P1208.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Valine	0.06094	0.05629	0.05609	0.09963	0.129	0.11431	0.13067	0.09615	0.11341	0.10366	0.15821	0.07858	0.06918	0.07812	0.05742	0.00842	0.00512	0.00499
P1222.0	0.00567	0.00531	0.00322	0.00108	0.0014	0.00124	0.02138	0.01507	0.01823	0.0063	0.00869	0.00858	0.00742	0.00792	0.00736	0.00135	0.00249	0.00175
P1250.9	0.00695	0.00701	0.00374	0.00766	0.0086	0.00513	0.00853	0.00718	0.00789	0.00573	0.00508	0.00494	0.00512	0.00455	0.00294	0.01737	0.02497	0.00598
Benzoic acid	0.01262	0.01294	0.01149	0.00877	0.00734	0.00806	0.0113	0.01143	0.00718	0.01236	0.01181	0.00998	0.00877	0.01038	0.01172	0.01282	0.01328	0.01236
P1267.8	0.13553	0.12194	0.12961	0.11063	0.09143	0.10103	0.12062	0.15484	0.10789	0.14867	0.12999	0.16735	0.12053	0.11398	0.20333	0.10666	0.15234	0.11912
Phosphoric acid	2.44421	2.71656	2.74119	2.72921	2.79383	2.76152	3.51928	4.02953	3.07568	4.43097	4.50134	4.05485	3.46706	3.709	4.0089	5.61263	7.24514	5.53997
Isoleucine	0.06279	0.06411	0.03936	0.04916	0.03632	0.04274	0.07158	0.03361	0.04413	0.0718	0.07196	0.07165	0.0397	0.02789	0.01408	0.15058	0.16472	0.14833
Glycine	0.16386	0.15067	0.12137	0.19065	0.18604	0.18835	0.27851	0.18673	0.23262	0.27582	0.32706	0.22457	0.16793	0.1922	0.15904	0.40147	0.4029	0.41421

Succinic acid	0.09596	0.09911	0.07163	0.1236	0.11129	0.11744	0.09357	0.10377	0.05768	0.09596	0.07001	0.064	0.13787	0.16392	0.13681	0.15897	0.15173	0.12875
Glyceric acid	0.02049	0.02643	0.01771	0.01959	0.01795	0.0177	0.02402	0.022	0.0132	0.02254	0.02262	0.02247	0.02313	0.02645	0.02343	0.05729	0.0273	0.03328
P1342.7	0.01399	0.01053	0.00898	0.00327	0.00327	0.00327	0.01306	0.01189	0.01298	0.02286	0.02073	0.02499	0.00471	0.00656	0.00864	0.02984	0.02684	0.0057

Suppl. Table 1 *Continued*

Metabolites	Roots under Control and WD treatments																	
	Roots from three individual plants grown for 24 h under control condition without addition of PEG			Roots from three individual plants treated for 24 h by 10% PEG			Roots from three individual plants grown for 48 h under control condition without addition of PEG			Roots from three individual plants treated for 48 h by 15% PEG			Roots from three individual plants grown for 72 h under control condition without addition of PEG			Roots from three individual plants treated for 72 h by 20% PEG		
	CR1024	CR1024	CR1024	WR1024	WR1024	WR1024	CR1548	CR1548	CR1548	WR1548	WR548	WR1548	CR2072	CR2072	CR2072	WR2072	WR2072	WR2072
a-Ketoglutarate	0.01058	0.01428	0.01199	0.01581	0.01105	0.01228	0.02622	0.03309	0.03484	0.01451	0.01808	0.01094	0.014	0.014	0.02028	0.06108	0.02998	0.07336
Serine	0.44004	0.39338	0.38796	0.47341	0.38438	0.42889	0.69354	0.40674	0.55014	0.73874	0.96145	0.51604	0.48672	0.59654	0.20835	1.03795	1.19658	0.94282
P1375.4	0.02362	0.01319	0.0133	0.03103	0.018	0.0161	0.04631	0.05116	0.04874	0.08833	0.08225	0.04481	0.04143	0.05801	0.0365	0.05213	0.07242	0.07522
Threonine	0.14153	0.11854	0.11371	0.14786	0.12329	0.09747	0.22133	0.18964	0.20518	0.21362	0.32238	0.16927	0.16507	0.19675	0.14342	0.34256	0.36472	0.35713
Homocysteine	0.08475	0.0726	0.08143	0.08611	0.07062	0.07836	0.07138	0.11991	0.09991	0.09092	0.12687	0.21614	0.07149	0.08602	0.08993	0.13786	0.11948	0.26128
P1425.2	0.01226	0.02147	0.01027	0.08266	0.06894	0.0758	0.09772	0.18228	0.14	0.17483	0.16362	0.11802	0.113	0.13282	0.10041	0.15076	0.14933	0.14156
P1459.6	0.05816	0.05238	0.07317	0.05664	0.06112	0.05888	0.06637	0.06471	0.06554	0.05114	0.08261	0.05078	0.05159	0.05609	0.05818	0.08824	0.08316	0.08463
P1471.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Malic acid	0.74932	0.79349	0.90773	0.57558	0.46073	0.51815	0.76492	0.92467	0.84479	0.46563	0.70308	0.52335	0.52308	0.61484	0.68043	0.62843	0.56748	0.56641
P1511.5	0.05281	0.03015	0.06938	0.08372	0.04928	0.0665	0.10613	0.13205	0.11909	0.1027	0.10864	0.08456	0.09888	0.09907	0.06192	0.20632	0.2786	0.22136
Aspartic acid	0.28374	0.22898	0.24567	0.44663	0.39774	0.37219	0.45856	0.36115	0.40986	0.3027	0.63179	0.23165	0.28515	0.2893	0.20473	0.1333	0.1333	0.1333
Proline	0.20785	0.25987	0.31734	0.34267	0.28888	0.31578	0.32489	0.47608	0.40049	0.5027	0.66053	0.49169	0.21449	0.24264	0.29123	0.87631	0.88332	0.8693
P1540.4	0.05531	0.05213	0.08252	0.06112	0.05548	0.05434	0.05507	0.06579	0.06857	0.1027	0.09281	0.1063	0.11576	0.1245	0.13679	0.12621	0.13315	0.12924
P1553.2	0.01798	0.02979	0.01559	0.0197	0.01819	0.01883	0.01352	0.01077	0.02575	0.01642	0.03722	0.01857	0.00802	0.00974	0.01396	0.00262	0.00877	0.0079
P1559.5	0.01206	0.01598	0.01688	0.00771	0.0108	0.00926	0.01032	0.01859	0.02417	0.01562	0.01375	0.01187	0.01699	0.0174	0.02537	0.01328	0.00939	0.0165
P1570.8	0.00803	0.00894	0.0168	0.01285	0.01719	0.01502	0.01841	0.02862	0.01826	0.05216	0.0685	0.03583	0.01465	0.01902	0.02276	0.02649	0.02815	0.0249
P1583.9	0.03512	0.03076	0.0316	0.05003	0.03939	0.04471	0.08849	0.05995	0.07422	0.01766	0.13352	0.04944	0.0437	0.05347	0.02689	0.05173	0.06935	0.06505

Galactose	5.59716	4.91942	5.82993	6.22815	5.94301	8.86676	4.50061	5.81771	4.10607	5.18352	4.62109	4.50522	4.74351	5.47513	5.02556	4.57875	4.78499	4.5909
Glucose	1.17454	1.22843	1.09017	1.24719	1.29525	1.27122	0.98036	1.39805	0.84062	1.22662	0.91261	0.89037	1.04688	1.22534	1.12836	1.04288	0.94077	0.92702
Sorbitol	0.78594	0.75348	0.77563	0.74205	1.10235	0.87353	0.18122	0.35923	0.28525	0.14282	0.32269	0.22327	0.63317	0.78047	0.67766	0.98688	0.81812	0.74263

Suppl. Table 1 *Continued*

Metabolites	Roots under Control and WD treatments																	
	Roots from three individual plants grown for 24 h under control condition without addition of PEG			Roots from three individual plants treated for 24 h by 10% PEG			Roots from three individual plants grown for 48 h under control condition without addition of PEG			Roots from three individual plants treated for 48 h by 15% PEG			Roots from three individual plants grown for 72 h under control condition without addition of PEG			Roots from three individual plants treated for 72 h by 20% PEG		
	CR1024	CR1024	CR1024	WR1024	WR1024	WR1024	CR1548	CR1548	CR1548	WR1548	WR548	WR1548	CR2072	CR2072	CR2072	WR2072	WR2072	WR2072
Tyrosine	0.10092	0.09087	0.05467	0.09991	0.09869	0.10981	0.19642	0.2468	0.10039	0.13613	0.16413	0.15836	0.19396	0.2238	0.177	0.12718	0.22701	0.10463
P1946.6	0.07053	0.0718	0.06494	0.08482	0.17438	0.11452	0.09929	0.13723	0.10387	0.13062	0.12185	0.13635	0.09768	0.08628	0.06481	0.13244	0.11352	0.13086
P1954.3	0.04489	0.02961	0.04243	0.01835	0.01985	0.01583	0.04308	0.06504	0.04698	0.06675	0.00466	0.08049	0.1811	0.12722	0.11074	0.03456	0.02253	0.02598
Galactonic acid	0.06367	0.1231	0.05957	0.07156	0.06351	0.05848	0.04131	0.04508	0.03454	0.00489	0.04972	0.05212	0	0	0	0.03891	0.13298	0.12684
P1979.6	0	0	0	0	0	0	0.00377	0.00424	0.01314	0	0	0	0	0	0	0	0	0
Gluconic acid	0.03497	0.05694	0.04186	0.03211	0.03511	0.03361	0.02585	0.0353	0.04268	0.0375	0.03694	0.03701	0.03903	0.05074	0.04028	0.02546	0.02792	0.03038
P2015.5	0.00889	0.01428	0.01463	0.01406	0.00827	0.01219	0.0053	0.00814	0.00892	0.01928	0.01606	0.01655	0.00716	0.00964	0.00544	0.05801	0.05359	0.06275
P2031.5	0.15506	0.12552	0.20384	0.20698	0.32529	0.11272	0.10334	0.20806	0.15995	0.14347	0.19648	0.22424	0.13694	0.19392	0.20752	0.253	0.22534	0.27723
Hexadecanoic acid	0.3437	0.35377	0.31276	0.1893	0.31343	0.40294	0.31993	0.54063	0.39081	0.83785	0.43432	0.9396	0.46474	0.61657	0.26622	1.29377	0.77319	0.46287
P2056.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
myo-Inositol	0.19584	0.18593	0.18508	0.16978	0.19241	0.23304	0.22515	0.28527	0.2614	0.56782	0.5306	0.53066	0.26273	0.33107	0.26867	0.63181	0.50777	0.48833
P2099.7	0.07374	0.09253	0.09584	0.11754	0.10752	0.13484	0.08322	0.14189	0.07367	0.13841	0.17032	0.1065	0.08297	0.11027	0.04052	0.15003	0.21072	0.1799
P2109.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P2133.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P2139.1	0.03717	0.04135	0.04446	0.03307	0.03537	0.05656	0.03357	0.05572	0.05799	0.03993	0.03526	0.02849	0.0367	0.04674	0.05743	0.03668	0.04317	0.0439
P2154.2	0.03946	0.03087	0.03079	0.04213	0.03179	0.02811	0.01325	0.01499	0.01682	0.03342	0.03498	0.0538	0.01911	0.01445	0.02471	0.05086	0.0609	0.03456
P2179.8	0.00242	0.00399	0.00413	0.00221	0.00204	0.00159	0.00308	0.00353	0.00494	0.00082	0.00292	0.00153	0.02073	0.02313	0.01838	0.00206	0.00462	0.00206

P2190.2	0.01644	0.01709	0.02717	0.05173	0.04577	0.04875	0.01973	0.02584	0.03497	0.04045	0.04859	0.05579	0.02854	0.0331	0.0261	0.04605	0.04146	0.03726
P2210.7	0.14357	0.14412	0.18532	0.16894	0.20091	0.20532	0.14126	0.20094	0.21549	0.27685	0.15016	0.23451	0.20611	0.2852	0.26053	0.1808	0.21011	0.24405
Octadecenoic acid	0.17006	0.14412	0.17985	0.14179	0.21039	0.19737	0.15883	0.27397	0.16039	0.7737	0.71588	0.65806	0.22822	0.33298	0.27451	0.20417	0.41409	0.30468

Suppl. Table 1 *Continued*

Metabolites	Roots under Control and WD treatments																	
	Roots from three individual plants grown for 24 h under control condition without addition of PEG			Roots from three individual plants treated for 24 h by 10% PEG			Roots from three individual plants grown for 48 h under control condition without addition of PEG			Roots from three individual plants treated for 48 h by 15% PEG			Roots from three individual plants grown for 72 h under control condition without addition of PEG			Roots from three individual plants treated for 72 h by 20% PEG		
	CR1024	CR1024	CR1024	WR1024	WR1024	WR1024	CR1548	CR1548	CR1548	WR1548	WR548	WR1548	CR2072	CR2072	CR2072	WR2072	WR2072	WR2072
Tryptamine	0.02366	0.02726	0.01965	0.02545	0.02505	0.02525	0.02591	0.05741	0.03028	0.00638	0.03045	0.0444	0.02696	0.03648	0.03102	0.0312	0.03433	0.03882
P2279.0	0.00885	0.01224	0.02289	0.00973	0.01153	0.01063	0.00699	0.01205	0.01077	0.01119	0.0042	0.0128	0.00983	0.01224	0.01144	0.01374	0.01487	0.01734
Fructose-6-phosphate	0.06172	0.08543	0.12408	0.09827	0.09135	0.09481	0.072	0.071	0.07	0.12917	0.12492	0.1294	0.10586	0.1415	0.09456	0.12439	0.12167	0.1824
Glucose-6-phosphate	0.08474	0.14345	0.16465	0.14043	0.12489	0.13266	0.1152	0.2838	0.31511	0.16815	0.16816	0.16857	0.1506	0.21833	0.14409	0.13241	0.13241	0.13241
P2331.2	0.02192	0.02487	0.03509	0.0333	0.03941	0.03635	0.02634	0.06633	0.05077	0.02763	0.03729	0.05047	0.03661	0.0533	0.0528	0.05466	0.03902	0.04148
P2342.9	0.0028	0.00674	0.00663	0.00378	0.00189	0.00283	0.00291	0.00564	0.00428	0.00365	0.002	0.00283	0.00326	0.00487	0.00407	0.01203	0.00787	0.00995
P2349.7	0.00114	0.00114	0.00114	0.00154	0.00154	0.00154	0.00099	0.00178	0.00139	0.00217	0.00217	0.00217	0.00121	0.00101	0.00059	0.00145	0.00122	0.00134
P2357.7	0.00202	0.004	0.00599	0.0009	0.0011	0.0009	0.00253	0.00344	0.00537	0.01002	0.01062	0.00942	0.00272	0.00294	0.00203	0.00463	0.0045	0.00257
Galacturonic acid	0.09146	0.05457	0.08077	0.1523	0.12914	0.14072	0.06133	0.09424	0.08372	0.08938	0.06897	0.09139	0.13614	0.1721	0.13247	0.16412	0.16309	0.12755
P2378.3	0.08037	0.10157	0.11236	0.19294	0.1635	0.17822	0.01324	0.024	0.03122	0.00689	0.01228	0.02166	0.1871	0.24672	0.18142	0.17638	0.16597	0.14503
P2398.8	0.04485	0.04914	0.03992	0.06793	0.06525	0.06356	0.0679	0.09065	0.07927	0.07374	0.075	0.07141	0.06776	0.1017	0.08579	0.09138	0.098	0.08651
P2416.9	0.14356	0.17295	0.24973	0.1786	0.15494	0.26874	0.01028	0.02125	0.02588	0.00666	0.01344	0.02592	0.16171	0.20376	0.157	0.13294	0.10421	0.10296
P2436.3	0.01563	0.01238	0.01168	0.03045	0.03169	0.03107	0.01742	0.03321	0.01672	0.02096	0.01783	0.04709	0.02607	0.03837	0.03218	0.02464	0.02643	0.0437
P2447.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P2466.7	0.06081	0.05903	0.06139	0.08881	0.1069	0.17032	0.07981	0.15928	0.12248	0.11266	0.08413	0.12759	0.10028	0.1364	0.1021	0.13559	0.1037	0.07974
P2492.9	0.00517	0.00382	0.00614	0.02827	0.01282	0.02054	0.00647	0.01186	0.0144	0.0106	0.00782	0.00935	0.02535	0.01439	0.01931	0.02881	0.02092	0.02978

Altrose	0.0101	0.01375	0.0099	0.01289	0.02461	0.01875	0.01638	0.03038	0.02338	0.09348	0.03793	0.06303	0.02475	0.04083	0.02546	0.04164	0.02668	0.06963
P2531.6	0.00886	0.01168	0.01893	0.01623	0.01556	0.0159	0.0065	0.01003	0.00826	0.02164	0.01379	0.01967	0.00735	0.01073	0.01802	0.01165	0.0205	0.01783
P2549.5	0.05283	0.05213	0.0535	0.13623	0.16651	0.13014	0.03732	0.10055	0.07362	0.15597	0.09043	0.05947	0.05525	0.07867	0.03882	0.07146	0.05591	0.05376
P2583.1	0.19894	0.16112	0.28541	0.19766	0.21172	0.35513	0.10149	0.22776	0.20636	0.44038	0.37345	0.33799	0.23199	0.31658	0.28736	0.27851	0.23032	0.21728

Suppl. Table 1 *Continued*

Metabolites	Roots under Control and WD treatments																	
	Roots from three individual plants grown for 24 h under control condition without addition of PEG			Roots from three individual plants treated for 24 h by 10% PEG			Roots from three individual plants grown for 48 h under control condition without addition of PEG			Roots from three individual plants treated for 48 h by 15% PEG			Roots from three individual plants grown for 72 h under control condition without addition of PEG			Roots from three individual plants treated for 72 h by 20% PEG		
	CR1024	CR1024	CR1024	WR1024	WR1024	WR1024	CR1548	CR1548	CR1548	WR1548	WR548	WR1548	CR2072	CR2072	CR2072	WR2072	WR2072	WR2072
Sucrose	2.07489	2.44198	2.78469	4.37428	3.53776	3.95602	3.21428	5.57904	5.97906	6.41617	3.56044	3.87168	2.88011	3.45063	3.10465	7.43309	4.95165	5.56405
Adenosine	0.03596	0.0165	0.04503	0.02473	0.05671	0.04072	0.02449	0.05204	0.0122	0.05478	0.05609	0.03925	0.03407	0.05256	0.02665	0.10872	0.10672	0.1057
P2652.6	0.01073	0.0165	0.02208	0.01656	0.02722	0.02189	0.01055	0.0316	0.01812	0.02958	0.02031	0.01986	0.01434	0.02243	0.01403	0.0277	0.02426	0.0285
Trehalose	0.01457	0.01684	0.01588	0.0082	0.00971	0.00895	0.01417	0.01287	0.01724	0.02086	0.01111	0.01227	0.00705	0.0105	0.00638	0.01542	0.01372	0.01401
P2689.5	0.01447	0.01299	0.0126	0.02357	0.019	0.02129	0.01182	0.03216	0.02376	0.0208	0.02043	0.0199	0.01364	0.02069	0.01372	0.02062	0.01941	0.0266
P2702.2	0.00468	0.00503	0.00462	0.01129	0.00931	0.0103	0.0055	0.01519	0.0085	0.00809	0.00917	0.01507	0.00749	0.01134	0.00842	0.00972	0.00972	0.00972
Maltose	0.02547	0.02565	0.02876	0.06869	0.05542	0.09041	0.01907	0.0408	0.03325	0.14482	0.12519	0.12005	0.0307	0.04712	0.03122	0.2553	0.16611	0.17545
P2745.4	0.01447	0.01223	0.02068	0.00714	0.01222	0.00968	0.01325	0.01116	0.01481	0.01306	0.01091	0.01274	0.00532	0.00971	0.00882	0.01138	0.01415	0.01463
P2741.9	0.00706	0.01188	0.01605	0.01395	0.01028	0.01211	0.00894	0.02124	0.0373	0.01394	0.01608	0.02614	0.01155	0.02023	0.01491	0.02216	0.02172	0.02611
P2761.1	0.0065	0.0095	0.01516	0.01292	0.00974	0.01133	0.00754	0.01476	0.01595	0.01344	0.00815	0.01164	0.00836	0.01322	0.00773	0.01439	0.01415	0.01463
P2775.3	0.04206	0.04572	0.04168	0.06686	0.0654	0.06613	0.06267	0.1435	0.10309	0.30593	0.3079	0.35615	0.10722	0.16401	0.13532	0.08171	0.14835	0.22918
P2802.3	0.01611	0.01472	0.01925	0.01265	0.01056	0.01567	0.01988	0.01496	0.01202	0.01394	0.02201	0.01564	0.0081	0.00877	0.00989	0.00924	0.02054	0.02062
P2821.0	0.00154	0.0024	0.00279	0.00751	0.00839	0.00903	0.00098	0.00143	0.00278	0.01344	0.01088	0.01493	0.00085	0.00324	0.00139	0.01138	0.01135	0.01337
P2825.7	0.00083	0.00165	0.0015	0.0027	0.00175	0.00125	0.00161	0.00229	0.0023	0.00318	0.00151	0.00486	0.00155	0.00263	0.00175	0.00359	0.00201	0.00309
P2847.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P2863.4	0.05264	0.06914	0.04798	0.11154	0.15951	0.23866	0.16331	0.11744	0.16025	0.02247	0.02767	0.02802	0.05131	0.02741	0.02769	0.0013	0.00577	0.00346

P2879.5	0.04058	0.07516	0.0403	0.04543	0.02442	0.01895	0.02857	0.06727	0.04177	0.03292	0.04099	0.0435	0.01967	0.05529	0.03412	0.03081	0.07717	0.02348
P2887.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P2917.9	0.00418	0.00344	0.00394	0.00286	0.00108	0.00331	0.00027	0.00341	0.00289	0.01135	0.00551	0.01474	0.00099	0.00209	0.00311	0.00087	0.00332	0.00093
P2925.7	0.00839	0.00723	0.00597	0.01272	0.01085	0.01459	0.00581	0.00415	0.00203	0.00234	0.00277	0.00194	0.00456	0.00612	0.00209	0.00492	0.00393	0.00191
P2948.8	0.00268	0.00302	0.0033	0	0	0	0.00341	0.00594	0.00827	0.00224	0.00239	0.00253	0.00251	0.00534	0.00359	0.00408	0.0107	0.00205

Suppl. Table 1 *Continued*

Metabolites	Roots under Control and WD treatments																	
	Roots from three individual plants grown for 24 h under control condition without addition of PEG			Roots from three individual plants treated for 24 h by 10% PEG			Roots from three individual plants grown for 48 h under control condition without addition of PEG			Roots from three individual plants treated for 48 h by 15% PEG			Roots from three individual plants grown for 72 h under control condition without addition of PEG			Roots from three individual plants treated for 72 h by 20% PEG		
	CR1024	CR1024	CR1024	WR1024	WR1024	WR1024	CR1548	CR1548	CR1548	WR1548	WR548	WR1548	CR2072	CR2072	CR2072	WR2072	WR2072	WR2072
P2955.0	0.03145	0.02753	0.02811	0	0	0	0.00189	0.00382	0.00366	0.00507	0.00875	0.02228	0.00113	0.00203	0.00131	0.01269	0.00911	0.02463
P2973.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P3003.3	0.00355	0.0038	0.00502	0.00748	0.0068	0.00715	0.00448	0.00472	0.00408	0.01248	0.0076	0.01269	0.00401	0.00562	0.00535	0.00958	0.01822	0.01666
P3090.3	0.00551	0.00946	0.00455	0.00726	0.00587	0.00765	0.00858	0.02	0.01562	0.00965	0.01024	0.03579	0.01399	0.016	0.00645	0.03208	0.01931	0.02792
P3053.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P3081.4	0.00551	0.00946	0.00455	0.00726	0.00587	0.00765	0.00858	0.02	0.01562	0.00965	0.01024	0.03579	0.01399	0.016	0.00645	0.03208	0.01931	0.01292
P3099.2	0.01511	0.01899	0.01276	0.00296	0.00078	0.00442	0.00542	0.00507	0.01292	0.00513	0.00422	0.00308	0.0088	0.00954	0.0041	0.0074	0.0137	0.01055
P3119.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P3138.0	0.0101	0.01215	0.01494	0.01541	0.01332	0.01542	0.02103	0.02823	0.02463	0.00323	0.00366	0.00483	0.01626	0.02149	0.00829	0.0111	0.01292	0.01529
P3182.2	0.02666	0.03502	0.04131	0.02134	0.03328	0.04454	0.022	0.04907	0.07145	0.02409	0.01933	0.01553	0.01813	0.02305	0.01408	0.01605	0.02673	0.03278
P3202.6	0.00104	0.00071	0.001	0.00128	0.00099	0.00069	9.9E-05	0.00016	0.00057	0.0002	0.00019	0.00025	5.2E-05	0.00014	0.00019	0.00027	0.00013	0.00022
P3246.4	0.00643	0.00686	0.00968	0	0	0	0.00101	0.00159	0.00582	0.00201	0.00195	0.00255	0.0005	0.00135	0.00181	0.00267	0.0013	0.00221
P3270.7	0.00233	0.00234	0.0028	0.00128	0.00244	0.00361	0.00064	0.00158	0.00232	0.00115	0.00169	0.00223	0.00126	0.00206	0.00029	0.00117	0.00108	0.00058
P3283.7	0.00299	0.00536	0.00389	0	0	0	0.00184	0.00139	0.00238	0.00061	0.00096	0.00131	0.00041	0.00102	0.00086	0.00126	0.00235	0.0011
P3337.7	0.00195	0.0015	0.00194	0.00135	0.00134	0.00136	0.00159	0.00155	0.00107	0.00122	0.00246	0.0037	0.00048	0.00056	0.00119	0.00119	0.00099	0.00195
P3377.6	0.00445	0.00389	0.00545	0.00145	0.00125	0.00217	0.00176	0.00179	0.00212	0.00951	0.0107	0.01189	0.00057	0.0008	0.00039	0.00543	0.00311	0.01519

P3405.5	0.00188	0.00473	0.00331	0	0	0	0	0	0	0.00533	0.00335	0.00137	0.00037	0.00075	0.00071	0.00297	0.00178	0.0011
P3421.2	0.00068	0.00072	0.00171	0	0	0	0.00193	0.00186	0.0018	0.00697	0.00663	0.00487	0.00117	0.00107	0.00048	0.00309	0.00196	0.00434
P3471.5	0.001	0.0033	0.00338	0.0397	0.02491	0.05448	0.02532	0.01521	0.01228	0.00267	0.00193	0.00119	0.00343	0.00084	0.00122	0.00461	0.00261	0.00329
P3482.4	0.00144	0.00483	0.00241	0.00153	0.00195	0.00115	0.0029	0.00242	0.00193	0.00153	0.00088	0.00129	0.0007	0.00038	0.00124	0.00319	0.00105	0.00538
P3502.3	0.00159	0.00264	0.00151	0.00105	0.00139	0.00173	0	0	0	0.0041	0.00158	0.00215	0.00025	0.00099	0.00151	0.00125	0.00037	0.0023

Suppl. Table 1 *Continued*

Metabolites	Roots under RW treatment					
	Roots from three individual plants grown for 72 h under control condition without addition of PEG			Roots from three individual plants treated for 72 h under RW treatment following the 24 h treatment in 20% PEG		
	CR0072	CR0072	CR0072	WR0072	WR0072	WR0072
Lactic acid	0.21598	0.19694	0.24359	0.29439	0.33947	0.24931
Glycolic acid	0.0581	0.04912	0.04742	0.15704	0.15304	0.1266
Alanine	0.25996	0.38179	0.13484	0.13642	0.13542	0.13081
P1165.9	0.33304	0.26151	0.29804	0.47298	0.45342	0.42914
P1157.8	0.03826	0.03662	0.02634	0.0289	0.02801	0.02243
P1172.7	0.0656	0.05249	0.04005	0.11547	0.18621	0.12636
P1182.1	0	0	0	0	0	0
P1190.6	0	0	0	0	0	0
P1208.5	0	0	0	0	0	0
Valine	0.09225	0.0957	0.09944	0.04516	0.05117	0.04619
P1222.0	0.00431	0.0038	0.00237	0.00629	0.00645	0.0062
P1250.9	0.00759	0.00774	0.00744	0.00811	0.01449	0.02498
Benzoic acid	0.00674	0.00446	0.00904	0.00873	0.00382	0.00475
P1267.8	0.14533	0.05972	0.14224	0.10967	0.10534	0.06383
Phosphoric acid	2.13137	2.24328	2.30565	2.72533	2.58925	2.30005
Isoleucine	0.02439	0.03656	0.01222	0.00369	0.00158	0.0042
Glycine	0.36025	0.22794	0.19929	0.02603	0.01784	0.02733
Succinic acid	0.29033	0.25035	0.24707	0.15265	0.14016	0.13078
Glyceric acid	0.02703	0.02516	0.02705	0.02089	0.03168	0.04999
P1342.7	0.00989	0.01003	0.01115	0.00433	0.00425	0.00273
a-Ketoglutarate	0.02028	0.01512	0.01103	0.02195	0.02322	0.03216
Serine	0.51492	0.64323	0.28344	0.21175	0.2126	0.21609
P1375.4	0.01653	0.02745	0.01526	0.01375	0.01481	0.0153
Threonine	0.15063	0.19864	0.21035	0.06353	0.06428	0.04626
Homocysteine	0.11469	0.09945	0.16884	0.12362	0.11589	0.12483
P1425.2	0.14586	0.11945	0.09681	0.07776	0.07368	0.0757
P1459.6	0.05565	0.06359	0.04204	0.06256	0.05859	0.05417

P1471.2	0	0	0	0	0	0
Malic acid	0.6277	0.5543	0.53483	0.42125	0.44375	0.45267
P1511.5	0.08291	0.09598	0.09163	0.04231	0.05412	0.06336
Aspartic acid	0.1333	0.1333	0.1333	0.12272	0.12272	0.12272
Proline	0.76421	0.69144	0.5162	0.1965	0.1965	0.1965
P1540.4	0.14071	0.15743	0.12756	0.17493	0.16582	0.12572
P1553.2	0.01207	0.01745	0.02283	0.02002	0.00885	0.01166
P1559.5	0.01268	0.02238	0.01873	0.00449	0.00739	0.0103
P1570.8	0.02209	0.02907	0.01802	0.01758	0.01533	0.01523
P1583.9	0.04891	0.04584	0.02688	0.03	0.02244	0.02248
P1606.9	0.09877	0.12113	0.21182	0.02411	0.02336	0.01503
Glutamine	0.51736	0.59823	0.47864	0.28633	0.32842	0.43899
Spermine	0.06028	0.04008	0.03354	0.03945	0.04	0.04084
Pentonic acid	0.03319	0.06066	0.05404	0.02703	0.02601	0.04075
P1661.9	0	0	0	0	0	0
Asprgine	0.27701	0.52086	0.39894	0.16098	0.08162	0.12599

Suppl. Table 1 *Continued*

Metabolites	Roots under RW treatment					
	Roots from three individual plants grown for 72 h under control condition without addition of PEG			Roots from three individual plants treated for 72 h under RW treatment following the 24 h treatment in 20% PEG		
	CR0072	CR0072	CR0072	WR0072	WR0072	WR0072
P1689.5	0	0	0	0	0	0
P1698.5	0.02163	0.0361	0.03089	0.01845	0.02399	0.05826
P1734.9	0.00415	0.0043	0.0052	0.0042	0.004	0.00332
P1741.0	0.00483	0.00947	0.00483	0.01448	0.02803	0.01536
cis-Conitic acid	1.06193	1.00208	0.80988	0.31073	0.31594	0.37749
P1779.8	0	0	0	0	0	0
P1784.3	0.03605	0.06647	0.04333	0.04206	0.04324	0.04217
Glucaric acid	0.19757	0.18079	0.22268	0.10753	0.18059	0.152
Citric acid	0.49303	0.6504	0.38769	0.31824	0.31644	0.31336
P1833.7	0.00074	0.00186	0.00299	0.00095	0.00779	0.00515
P1844.6	0.0462	0.06872	0.05427	0.08322	0.05165	0.04744
Tetradecanoic acid	0.08379	0.17154	0.11766	0.05608	0.04617	0.08957
Fructose	1.19041	1.25758	0.99662	1.29339	1.62238	1.2497
P1877.1	0	0	0	0	0	0
Galactose	8.1014	7.2303	7.1454	3.84891	4.73765	4.74817
Glucose	1.69163	1.26789	1.37807	0.79189	1.39719	0.81536
Sorbitol	0.71412	0.60901	0.64857	1.89758	2.49619	3.07947
Tyrosine	0.14957	0.12946	0.10338	0.04219	0.07996	0.08049
P1946.6	0.0566	0.05865	0.04783	0.08308	0.03702	0.03823

P1954.3	0.06227	0.10953	0.0825	0.07302	0.18175	0.1134
Galactonic acid	0.04074	0.05283	0.06493	0.03805	0.02876	0.02929
P1979.6	0	0	0	0	0.00194	0.16357
Gluconic acid	0.03372	0.05924	0.04648	0.04979	0.05695	0.05813
P2015.5	0.00278	0.00722	0.005	0.00628	0.00684	0.00573
P2031.5	0.3015	0.41922	0.27532	0.19337	0.12054	0.1542
Hexadecanoic acid	0.42164	1.09398	0.6267	0.76745	0.51206	0.56001
P2056.8	0	0	0	0	0	0
myo-Inositol	0.33964	0.36961	0.26003	0.15585	0.24277	0.27264
P2099.7	0.04074	0.08251	0.04913	0.06054	0.04357	0.0373
P2109.5	0	0	0	0	0	0
P2133.4	0	0	0	0	0	0
P2139.1	0.04013	0.06466	0.05468	0.04977	0.036	0.0596
P2154.2	0.02041	0.03902	0.02842	0.02446	0.03366	0.03253
P2179.8	0.02099	0.0253	0.03511	0.00679	0.01383	0.00652
P2190.2	0.0653	0.04568	0.05249	0.0448	0.02656	0.02533
P2210.7	0.21083	0.2748	0.22103	0.14596	0.13463	0.08103
Octadecenoic acid	0.31559	0.50796	0.39301	0.45317	0.28349	0.42853
Tryptamine	0.04435	0.06035	0.03804	0.0383	0.03771	0.0541
P2279.0	0.0105	0.01583	0.00805	0.00684	0.00833	0.00888
Fructose-6-phosphate	0.10598	0.16456	0.11347	0.08014	0.10901	0.09755
Glucose-6-phosphate	0.10889	0.18756	0.11487	0.07549	0.07919	0.15895
P2331.2	0.02134	0.0545	0.01961	0.03023	0.03113	0.03488
P2342.9	0.00485	0.00701	0.00917	0.00442	0.00906	0.00543
P2349.7	0.0059	0.00688	0.00786	0.00549	0.00713	0.00363
P2357.7	0.00418	0.00313	0.00121	0	0	0
Galacturonic acid	0.1282	0.16941	0.08788	0.13315	0.148	0.14215
P2378.3	0.12739	0.1505	0.09011	0.12068	0.09746	0.05721
P2398.8	0.08132	0.14174	0.10864	0.07238	0.15293	0.1971

Suppl. Table 1 *Continued*

Metabolites	Roots under RW treatment					
	Roots from three individual plants grown for 72 h under control condition without addition of PEG			Roots from three individual plants treated for 72 h under RW treatment following the 24 h treatment in 20% PEG		
	CR0072	CR0072	CR0072	WR0072	WR0072	WR0072
P2416.9	0.03894	0.0456	0.03819	0.0853	0.11669	0.09011
P2436.3	0.02218	0.03019	0.03865	0.03417	0.04575	0.0298
P2447.6	0	0	0	0	0	0
P2466.7	0.10274	0.16616	0.11253	0.10825	0.10308	0.15834
P2492.9	0.02366	0.02765	0.02134	0.01294	0.01862	0.01043
Altrose	0.01849	0.02854	0.02793	0.02802	0.1028	0.06828
P2531.6	0.01862	0.031	0.02428	0.01739	0.03091	0.09967
P2549.5	0.03883	0.10258	0.06102	0.05243	0.13283	0.09996

P2583.1	0.22365	0.49825	0.37651	0.24084	0.2924	0.21829
Sucrose	5.2653	6.44472	6.5054	3.60861	9.35992	7.40254
Adenosine	0.04595	0.06613	0.04336	0.0284	0.01869	0.01127
P2652.6	0.02288	0.03557	0.02536	0.0172	0.03329	0.01404
Trehalose	0.00853	0.00555	0.01277	0.00784	0.00984	0.0086
P2689.5	0.01262	0.01629	0.01465	0.01159	0.01722	0.02194
P2702.2	0.01057	0.01209	0.01158	0.00914	0.01043	0.00939
Maltose	0.08924	0.11032	0.07806	0.15856	0.19623	0.24422
P2745.4	0.01999	0.02584	0.024	0.01711	0.01711	0.0244
P2741.9	0.02043	0.03544	0.02425	0.01209	0.01615	0.02582
P2761.1	0.0168	0.02461	0.01863	0.02023	0.02023	0.01876
P2775.3	0.1152	0.32711	0.38378	0.10106	0.18254	0.09025
P2802.3	0.01368	0.01109	0.01436	0.01722	0.01999	0.01675
P2821.0	0.00335	0.00711	0.00367	0.00313	0.00347	0.00277
P2825.7	0.00401	0.00727	0.0068	0.00323	0.00436	0.00233
P2847.3	0	0	0	0	0	0
P2863.4	0.67339	0.91992	0.60271	0.68464	0.60282	0.7118
P2879.5	0.16684	0.27286	0.10251	0.12385	0.15097	0.11148
P2887.1	0	0	0	0	0	0
P2917.9	0.00162	0.00216	0.00147	0.00166	0.00306	0.00445
P2925.7	0.01774	0.04121	0.003	0.00256	0.00842	0.00393
P2948.8	0.00691	0.01126	0.00388	0.00623	0.01308	0.00394
P2955.0	0.00572	0.0093	0.028	0.00378	0.00769	0.00307
P2973.4	0	0	0	0	0	0
P3003.3	0.02155	0.02536	0.01725	0.02109	0.02515	0.02241
P3090.3	0.03635	0.04167	0.07972	0.62226	0.7842	0.53685
P3053.6	0	0	0	0	0	0
P3081.4	0.03635	0.04167	0.07972	0.02226	0.0342	0.03685
P3099.2	0.01162	0.01041	0.04692	0.11158	0.16972	0.1319
P3119.1	0	0	0	0	0	0
P3138.0	0.03971	0.03442	0.03706	0.0298	0.09973	0.07206
P3182.2	0.04561	0.03636	0.10616	0.05129	0.13308	0.05917
P3202.6	0.00018	9.7E-05	0.00026	5.8E-05	8.7E-05	0.00012
P3246.4	0.0018	0.00098	0.00263	0.0006	0.00091	0.00122
P3270.7	0.00341	0.00131	0.00145	0.00204	0.00225	0.00332
P3283.7	0	0	0	0.00053	0.00373	0.00261
P3337.7	0	0	0	0.00031	0.00102	0.00142
P3377.6	0.00054	0.00104	0.00198	0.0021	0.00269	0.00239
P3405.5	0.00098	0.00124	0.00071	0.00197	0.00263	0.0013
P3421.2	0.00126	0.00219	0.00173	0.00147	0.00411	0.00101
P3471.5	0.00166	0.00151	0.00489	0.00169	0.0026	0.00123
P3482.4	0.00157	0.00144	0.00169	0.0011	0.00274	0.00287
P3502.3	0.00114	0.00356	0.00248	0.00308	0.00659	0.00938

Suppl. Table 2 Metabolites with an increased or decreased metabolic levels that were identified in leaves of WD-stressed maize seedlings.

Values presented for each point in time are means \pm standard errors of data from three individual seedlings at the three-leaf stage. Statistical differences between samples were assessed by the Students *t*-test ($P < 0.05$). The comparison was performed as WD vs. control tissues at the same time point. Increased levels are marked in bold. Decreased levels are marked with shadow. NA indicates that the data were not applicable. WD: water deficit.

Metabolites	Fold change	<i>t</i> -test value	Fold change	<i>t</i> -test value	Fold change	<i>t</i> -test value
	(WD/Control)		(WD/Control)		(WD/Control)	
	24 h		48 h		72 h	
Lactic acid	0.98 \pm 0.05	0.86	2.04 \pm 0.24	0.00	1.24 \pm 0.20	0.21
Glycolic acid	0.20 \pm 0.05	0.00	1.89 \pm 0.46	0.08	5.13 \pm 0.22	0.00
Alanine	3.82 \pm 1.88	0.06	9.13 \pm 1.57	0.00	5.29 \pm 1.67	0.01
P1165.9	0.12 \pm 0.04	0.00	0.12 \pm 0.00	0.00	0.04 \pm 0.00	0.00
P1157.8	NA	NA	0.44 \pm 0.03	0.00	0.49 \pm 0.15	0.02
P1172.7	0.71 \pm 0.08	0.03	1.30 \pm 0.33	0.04	2.62 \pm 0.58	0.01
P1182.1	1.28 \pm 0.40	0.42	9.36 \pm 0.92	0.00	7.25 \pm 2.96	0.02
P1190.6	2.28 \pm 0.00	0.00	14.42 \pm 0.74	0.00	4.87 \pm 1.11	0.00
P1208.5	2.21 \pm 0.73	0.05	1.80 \pm 0.28	0.01	0.57 \pm 0.12	0.03
Valine	0.34 \pm 0.08	0.00	0.05 \pm 0.01	0.00	0.97 \pm 0.43	0.92
P1222.0	0.91 \pm 0.33	0.76	3.06 \pm 1.04	0.03	0.17 \pm 0.07	0.00
Benzoic acid	2.17 \pm 0.09	0.00	0.38 \pm 0.18	0.00	0.79 \pm 0.17	0.43
P1267.8	0.94 \pm 0.25	0.80	0.43 \pm 0.07	0.10	3.22 \pm 0.78	0.01
Isoleucine	2.03 \pm 0.25	0.00	1.70 \pm 0.32	0.12	1.55 \pm 0.20	0.01
Glycine	4.52 \pm 0.82	0.01	0.60 \pm 0.02	0.00	0.07 \pm 0.02	0.00
Succinic acid	0.28 \pm 0.08	0.00	6.04 \pm 0.22	0.00	3.04 \pm 0.51	0.00
Glyceric acid	1.21 \pm 0.03	0.01	0.95 \pm 0.01	0.87	0.48 \pm 0.02	0.00
α -Ketoglutarate	0.55 \pm 0.10	0.06	4.24 \pm 1.05	0.01	0.46 \pm 0.02	0.00
Serine	0.71 \pm 0.16	0.15	0.24 \pm 0.07	0.00	0.30 \pm 0.03	0.00
Threonine	12.33 \pm 1.01	0.00	3.77 \pm 0.43	0.00	0.77 \pm 0.13	0.06
Homocysteine	3.25 \pm 0.46	0.00	3.00 \pm 0.28	0.00	0.41 \pm 0.09	0.01
P1425.2	0.09 \pm 0.00	0.00	0.10 \pm 0.03	0.00	0.89 \pm 0.30	0.57
P1459.6	1.05 \pm 0.17	0.75	1.38 \pm 0.37	0.13	0.13 \pm 0.03	0.00
P1471.2	2.59 \pm 0.86	0.03	7.39 \pm 1.61	0.00	0.14 \pm 0.01	0.00
Proline	1.55 \pm 0.06	0.00	3.47 \pm 0.60	0.01	2.01 \pm 0.35	0.01
P1540.4	0.33 \pm 0.14	0.01	1.13 \pm 0.11	0.13	0.27 \pm 0.13	0.01
P1559.5	1.47 \pm 0.33	0.11	2.52 \pm 0.56	0.01	0.58 \pm 0.13	0.01
P1570.8	1.19 \pm 0.07	0.12	6.08 \pm 1.55	0.02	0.33 \pm 0.16	0.03
P1583.9	0.81 \pm 0.07	0.23	1.80 \pm 0.87	0.00	0.22 \pm 0.07	0.00
P1606.9	4.76 \pm 1.05	0.00	1.03 \pm 0.43	0.64	0.43 \pm 0.18	0.06
Glutamine	1.88 \pm 0.01	0.00	3.80 \pm 0.32	0.00	1.49 \pm 0.48	0.18
Spermine	1.00 \pm 0.25	0.98	1.64 \pm 0.58	0.36	0.18 \pm 0.05	0.00
P1661.9	1.09 \pm 0.28	0.64	3.06 \pm 0.32	0.00	3.88 \pm 1.26	0.02
Asparagine	1.47 \pm 0.04	0.00	2.28 \pm 0.45	0.03	1.20 \pm 0.07	0.03
P1689.5	1.10 \pm 0.03	0.32	28.5 \pm 9.14	0.01	24.8 \pm 6.12	0.00
P1698.5	0.88 \pm 0.05	0.09	0.0.75 \pm 0.32	0.41	0.41 \pm 0.09	0.04
P1734.9	0.73 \pm 0.31	0.37	2.24 \pm 0.31	0.00	0.53 \pm 0.29	0.09
P1779.8	1.95 \pm 0.37	0.03	20.45 \pm 4.71	0.00	10.01 \pm 2.72	0.00
P1784.3	5.00 \pm 0.14	0.00	9.67 \pm 1.87	0.00	1.10 \pm 0.07	0.12
Citricacid	0.66 \pm 0.05	0.03	0.15 \pm 0.00	0.00	0.18 \pm 0.04	0.00
Fructose	1.80 \pm 0.19	0.01	5.22 \pm 0.99	0.01	8.42 \pm 3.14	0.02
P1877.1	3.23 \pm 0.35	0.00	4.01 \pm 0.80	0.02	24.4 \pm 2.75	0.00
Glucose	2.11 \pm 0.34	0.00	1.99 \pm 0.32	0.01	4.17 \pm 1.18	0.98
P1946.6	1.83 \pm 0.24	0.01	2.86 \pm 0.57	0.04	0.27 \pm 0.10	0.07
Gluconic acid	1.75 \pm 0.26	0.09	1.50 \pm 0.24	0.16	3.60 \pm 1.32	0.03
<i>myo</i> -inositol	1.21 \pm 0.04	0.02	2.21 \pm 0.35	0.02	2.69 \pm 0.64	0.01
P2109.5	0.35 \pm 0.08	0.01	1.40 \pm 0.02	0.00	0.97 \pm 0.10	0.89

Suppl. Table 2 *Continued*

Metabolites	Fold change	<i>t</i> -test value	Fold change	<i>t</i> -test value	Fold change	<i>t</i> -test value
	(WD/Control)		(WD/Control)		(WD/Control)	
	24 h		48 h		72 h	
P2133.4	4.44 ± 1.15	0.01	11.21±3.63	0.01	0.48±0.04	0.07
P2154.2	2.40 ± 0.24	0.00	2.02±0.47	0.02	4.54±0.62	0.00
P2179.8	8.50 ± 1.13	0.00	3.84±1.00	0.03	4.96±0.34	0.00
P2190.2	0.50 ± 0.19	0.05	1.67±0.46	0.09	3.76±0.37	0.00
Tryptamine	0.98 ± 0.26	0.91	1.20±0.38	0.63	0.29±0.12	0.03
P2279.0	2.53 ± 0.07	0.00	13.71±1.21	0.00	1.16±0.13	0.12
Fructose-6-phosphate	0.95 ± 0.10	0.74	1.19±0.33	0.39	0.47±0.06	0.01
Glucose-6-phosphate	1.09 ± 0.39	0.70	1.81±0.76	0.20	0.48±0.06	0.00
P2357.7	2.25 ± 0.83	0.07	2.33±0.60	0.04	1.44±0.75	0.41
P2378.3	0.72 ± 0.06	0.08	0.65±0.32	0.41	0.31±0.12	0.03
P2416.9	0.83 ± 0.08	0.45	2.61±0.88	0.04	1.18±0.31	0.46
P2436.3	1.17 ± 0.63	0.66	4.04±0.36	0.00	0.79±0.10	0.03
P2447.6	0.13 ± 0.01	0.02	0.12±0.03	0.01	0.72±0.03	0.28
P2466.7	1.18 ± 0.56	0.60	2.16±0.20	0.00	0.47±0.09	0.00
P2549.5	0.75 ± 0.19	0.45	2.42±0.42	0.02	1.00±0.10	0.99
Adenosine	0.35 ± 0.12	0.01	1.21±0.36	0.30	0.97±0.42	0.93
Trehalose	0.36 ± 0.06	0.00	3.49±0.77	0.02	17.28±2.17	0.00
Maltose	0.22 ± 0.06	0.00	0.52±0.09	0.00	1.10±0.12	0.71
P2745.4	1.38 ± 0.11	0.06	5.48±1.41	0.03	8.08±2.24	0.04
P2761.1	1.27 ± 0.24	0.17	2.22±0.52	0.02	1.08±0.35	0.80
P2802.3	2.17 ± 0.49	0.02	2.00±0.13	0.05	0.69±0.32	0.37
P2879.5	0.67 ± 0.00	0.18	6.63±2.35	0.01	1.80±0.43	0.06
P2887.1	0.75 ± 0.09	0.39	0.95±0.40	0.94	0.43±0.09	0.01
P2925.7	0.86 ± 0.39	0.98	2.89±0.00	0.00	4.75±0.36	0.00
P2955.0	0.52 ± 0.05	0.01	3.35±0.54	0.00	8.28±0.47	0.00
P2973.4	2.31 ± 0.18	0.00	1.43±0.44	0.22	0.07±0.00	0.03
P3053.6	1.48 ± 0.20	0.06	3.15±0.48	0.01	8.65±2.97	0.01
P3081.4	2.43 ± 0.50	0.01	4.44±0.81	0.00	2.59±0.41	0.00
P3119.1	2.13 ± 0.20	0.02	1.59±0.24	0.07	0.81±0.06	0.30
P3138.0	0.20 ± 0.08	0.00	2.68±0.33	0.00	0.50±0.11	0.03
P3182.2	1.99 ± 0.39	0.01	2.24±0.47	0.01	0.86±0.40	0.69
P3202.6	0.86 ± 0.39	0.31	0.88±0.44	0.50	4.17±0.76	0.00
P3246.4	0.86 ± 0.39	0.10	2.89±0.00	0.00	5.88±0.45	0.00
P3337.7	0.68 ± 0.15	0.04	1.27±0.61	0.56	3.08±0.92	0.02
P3377.6	1.36 ± 0.67	0.51	3.10±0.36	0.00	0.86±0.37	0.66
P3405.5	0.83 ± 0.60	0.80	3.90±0.60	0.00	2.77±0.66	0.01
P3421.2	0.98 ± 0.27	0.91	2.69±0.37	0.01	1.68±0.12	0.03
P3471.5	0.96 ± 0.39	0.80	8.31±0.00	0.00	0.78±0.24	0.34
P3502.3	1.85 ± 0.36	0.02	6.12±0.00	0.00	1.60±0.75	0.40

Suppl. Table 3 Metabolites with an increased or decreased metabolic levels that were identified in roots of WD-stressed maize seedlings.

Values presented for each point in time are means \pm standard errors of data from three individual seedlings at the three-leaf stage. Statistical differences between samples were assessed by the Students *t*-test ($P < 0.05$). The comparison was performed as WD vs. control tissues at the same time point. Increased levels are marked in bold. Decreased levels are marked with shadow. NA indicates that the data were not applicable. WD: water deficit.

Metabolites	Fold change	<i>t</i> -test value	Fold change	<i>t</i> -test value	Fold change	<i>t</i> -test value
	(WD/Control)		(WD/Control)		(WD/Control)	
	24 h		48 h		72 h	
Lactic acid	2.18 \pm 0.37	0.01	1.62 \pm 0.38	0.10	1.39 \pm 0.04	0.03
P1172.7	1.22 \pm 0.46	0.48	0.50 \pm 0.01	0.04	2.02 \pm 0.32	0.01
Valine	1.98 \pm 0.25	0.00	1.00 \pm 0.36	1.00	0.09 \pm 0.03	0.00
P1222.0	0.26 \pm 0.03	0.01	0.43 \pm 0.07	0.01	0.25 \pm 0.08	0.00
Isoleucine	0.77 \pm 0.12	0.23	1.44 \pm 0.00	0.12	5.68 \pm 0.33	0.00
Glycine	1.30 \pm 0.02	0.03	1.19 \pm 0.22	0.34	2.35 \pm 0.04	0.00
P1342.7	0.29 \pm 0.00	0.01	1.81 \pm 0.17	0.00	3.13 \pm 1.98	0.14
α -Ketoglutarate	1.06 \pm 0.20	0.69	0.46 \pm 0.11	0.01	3.41 \pm 1.39	0.04
Serine	1.05 \pm 0.11	0.52	1.34 \pm 0.40	0.28	2.46 \pm 0.30	0.01
Threonine	0.99 \pm 0.20	0.92	1.13 \pm 0.45	0.56	2.21 \pm 0.07	0.00
P1425.2	5.17 \pm 0.47	0.00	1.09 \pm 0.21	0.71	1.28 \pm 0.04	0.03
P1511.5	1.31 \pm 0.34	0.36	0.83 \pm 0.11	0.12	2.72 \pm 0.44	0.00
Proline	1.21 \pm 0.10	0.20	1.38 \pm 0.24	0.10	3.51 \pm 0.03	0.00
P1570.8	1.33 \pm 0.19	0.29	2.40 \pm 0.75	0.04	1.41 \pm 0.09	0.04
P1606.9	1.04 \pm 0.17	0.81	2.46 \pm 0.68	0.03	2.64 \pm 0.40	0.01
Spermine	1.15 \pm 0.29	0.59	2.14 \pm 0.11	0.01	1.91 \pm 0.12	0.00
Pentonic acid	0.44 \pm 0.08	0.00	1.63 \pm 0.69	0.21	0.56 \pm 0.08	0.12
Asparagine	1.10 \pm 0.24	0.51	1.26 \pm 0.58	0.49	2.97 \pm 0.09	0.00
P1698.5	0.25 \pm 0.01	0.00	2.15 \pm 1.05	0.13	0.79 \pm 0.24	0.51
P1784.3	3.27 \pm 0.95	0.02	1.18 \pm 0.23	0.26	1.46 \pm 0.13	0.15
P1833.7	0.23 \pm 0.02	0.01	0.61 \pm 0.00	0.03	1.21 \pm 0.00	0.56
Fructose	2.78 \pm 0.41	0.00	1.10 \pm 0.11	0.68	0.48 \pm 0.08	0.02
P1954.3	0.46 \pm 0.05	0.01	0.98 \pm 0.78	0.97	0.20 \pm 0.04	0.01
P2015.5	0.91 \pm 0.23	0.69	2.32 \pm 0.23	0.00	7.84 \pm 0.62	0.00
<i>myo</i> -Inositol	1.05 \pm 0.17	0.64	2.11 \pm 0.08	0.00	1.89 \pm 0.27	0.01
P2099.7	1.37 \pm 0.16	0.04	1.39 \pm 0.32	0.24	2.31 \pm 0.39	0.02
P2154.2	1.01 \pm 0.22	0.96	2.71 \pm 0.76	0.02	2.51 \pm 0.68	0.02
P2179.8	0.55 \pm 0.09	0.05	0.46 \pm 0.28	0.07	0.14 \pm 0.07	0.00
P2190.2	2.41 \pm 0.15	0.00	1.80 \pm 0.29	0.03	1.42 \pm 0.15	0.02
Octadecenoic	1.11 \pm 0.22	0.48	3.62 \pm 0.29	0.00	1.10 \pm 0.38	0.69
P2342.9	0.53 \pm 0.18	0.14	0.66 \pm 0.19	0.19	2.45 \pm 0.51	0.01
P2357.7	0.24 \pm 0.03	0.06	2.65 \pm 0.16	0.00	1.52 \pm 0.45	0.14
P2436.3	2.35 \pm 0.05	0.00	1.28 \pm 0.72	0.60	0.98 \pm 0.33	0.93
P2492.9	4.08 \pm 1.53	0.03	0.85 \pm 0.13	0.54	1.35 \pm 0.25	0.18
P2531.6	1.21 \pm 0.03	0.41	2.22 \pm 0.49	0.02	1.38 \pm 0.38	0.32
P2549.5	2.73 \pm 0.37	0.00	1.45 \pm 0.70	0.41	1.05 \pm 0.17	0.84
P2583.1	1.18 \pm 0.40	0.56	2.15 \pm 0.29	0.01	0.87 \pm 0.12	0.30
Adenosine	1.25 \pm 0.49	0.55	1.69 \pm 0.32	0.19	2.83 \pm 0.04	0.00
P2702.2	2.16 \pm 0.21	0.00	1.11 \pm 0.39	0.79	1.07 \pm 0.00	0.62
Maltose	2.69 \pm 0.66	0.01	4.19 \pm 0.42	0.00	5.47 \pm 1.35	0.00
P2775.3	1.53 \pm 0.02	0.00	3.14 \pm 0.28	0.00	1.13 \pm 0.54	0.72
P2821.0	3.70 \pm 0.34	0.00	7.56 \pm 1.18	0.00	6.59 \pm 0.63	0.00
P2863.4	3.00 \pm 1.13	0.04	0.18 \pm 0.02	0.00	0.10 \pm 0.06	0.02

Suppl. Table 3 *Continued*

Metabolites	Fold change (WD/Control)	<i>t</i> -test value	Fold change (WD/Control)	<i>t</i> -test value	Fold change (WD/Control)	<i>t</i> -test value
	24 h		48 h		72 h	
P2863.4	3.00 ± 1.13	0.04	0.18 ± 0.02	0.00	0.10 ± 0.06	0.02
P2917.9	0.63 ± 0.31	0.11	4.81 ± 2.13	0.04	0.83 ± 0.68	0.74
P2955.0	NA	NA	3.85 ± 2.90	0.17	10.39 ± 5.46	0.04
P3003.3	1.73 ± 0.08	0.00	2.47 ± 0.65	0.02	2.97 ± 0.92	0.02
P3090.3	1.06 ± 0.14	0.81	1.26 ± 1.01	0.70	2.18 ± 0.54	0.04
P3099.2	0.17 ± 0.12	0.00	0.53 ± 0.13	0.24	1.41 ± 0.42	0.29
P3138.0	1.19 ± 0.10	0.21	0.16 ± 0.03	0.00	0.85 ± 0.14	0.61
P3246.4	0.00 ± 0.00	0.00	0.77 ± 0.12	0.70	1.69 ± 0.57	0.20
P3377.6	0.35 ± 0.10	0.01	5.67 ± 0.63	0.00	13.52 ± 10.96	0.12
P3421.2	0.00 ± 0.00	0.04	3.30 ± 0.60	0.00	3.45 ± 1.31	0.04
P3471.5	15.50 ± 5.77	0.01	0.11 ± 0.04	0.02	1.91 ± 0.55	0.17

Suppl. Table 4 RW-responsive metabolites and their metabolic levels in leaves and roots of maize.

Values presented for each point in time are means ± standard errors of data from three individual seedlings at the three-leaf stage. Statistical differences between samples were assessed by the Students *t*-test ($P < 0.05$). The comparison was performed as RW vs. control tissues at the same time point. RW was conducted for 72 h on the seedlings exposed to WD for 72 h. Increased levels are marked in bold. Decreased levels are marked with shadow. NA indicates that the data were not applicable. RW: re-watering. WD: water deficit.

Metabolites	Fold change (RW/Control)	<i>t</i> -test value	Fold change (RW/Control)	<i>t</i> -test value
	Leaves		Roots	
Glycolic acid	0.52 ± 0.08	0.07	2.82 ± 0.32	0
Alanine	23.62 ± 4.53	0	0.52 ± 0.01	0.16
P1165.9	318.40 ± 13.12	0	1.52 ± 0.07	0
P1172.7	1.03 ± 0.17	0.8	2.71 ± 0.72	0.02
Valine	4.69 ± 2.59	0.07	0.50 ± 0.03	0
P1222.0	0.40 ± 0.06	0.07	1.81 ± 0.04	0.01
Isoleucine	3.01 ± 0.58	0	0.13 ± 0.06	0.04
Glycine	1.02 ± 0.26	0.92	0.09 ± 0.02	0.01
P1342.7	0.59 ± 0.30	0.08	0.36 ± 0.09	0
P1375.4	5.33 ± 2.59	0.04	0.74 ± 0.04	0.26
Threonine	8.39 ± 0.32	0	0.31 ± 0.05	0
P1459.6	2.90 ± 1.11	0.04	1.09 ± 0.08	0.53
Proline	1.19 ± 0.25	0.28	0.30 ± 0.00	0
P1559.5	18.30 ± 6.93	0.01	0.41 ± 0.16	0.03
P1583.9	2.66 ± 0.48	0	0.62 ± 0.11	0.1
P1606.9	0.94 ± 0.23	0.74	0.14 ± 0.04	0.02
Glutamine	31.70 ± 1.53	0	0.66 ± 0.15	0.04
Spermine	6.26 ± 1.18	0	0.90 ± 0.02	0.6

Pentonic acid	2.40 ± 0.51	0.02	0.63 ± 0.17	0.13
Asparagine	1.07 ± 0.02	0.31	0.31 ± 0.10	0.02
P1734.9	13.44 ± 2.51	0	0.85 ± 0.10	0.17
P1741.0	0.04 ± 0.03	0.02	3.02 ± 1.19	0.05
<i>cis</i> -Conitic acid	1.16 ± 0.15	0.49	0.35 ± 0.04	0
P1784.3	0.38 ± 0.18	0.13	0.87 ± 0.01	0.54
Citric acid	2.21 ± 0.53	0.02	0.62 ± 0.00	0.06
Fructose	18.29 ± 0.47	0	1.21 ± 0.18	0.16
P1877.1	5.78 ± 0.28	0	NA	NA
Galactose	3.00 ± 0.09	0	0.59 ± 0.07	0
Glucose	3.80 ± 0.73	0	0.69 ± 0.24	0.13
Sorbitol	2.37 ± 0.75	0.04	3.79 ± 0.90	0.01
Tyrosine	0.35 ± 0.07	0	0.53 ± 0.17	0.03
Galactonic acid	11.64 ± 1.38	0	0.61 ± 0.10	0.05
P1979.6	5.88 ± 2.21	0.02	NA	NA
P2031.5	1.26 ± 0.16	0.06	0.47 ± 0.11	0.02
P2154.2	2.61 ± 0.22	0	1.03 ± 0.17	0.89

Suppl. Table 4 *Continued*

Metabolites	Leaves		Roots	
	Fold change (RW/Control)	<i>t</i> -test value	Fold change (RW/Control)	<i>t</i> -test value
P2179.8	NA	NA	0.33 ± 0.15	0.02
Glucose-6-phosphate	0.12 ± 0.02	0.01	0.76 ± 0.34	0.43
P2342.9	0.32 ± 0.03	0.02	0.90 ± 0.35	0.73
P2416.9	0.68 ± 0.13	0.31	2.38 ± 0.41	0
P2436.3	5.66 ± 0.60	0	1.21 ± 0.27	0.41
P2447.6	0.31 ± 0.01	0.02	NA	NA
Adenosine	1.48 ± 0.10	0.09	0.38 ± 0.17	0.02
Maltose	0.72 ± 0.04	0.02	2.16 ± 0.46	0.02
P2745.4	0.43 ± 0.06	0.02	0.84 ± 0.18	0.28
P2761.1	5.91 ± 0.57	0	0.99 ± 0.04	0.92
P2802.3	4.02 ± 0.35	0	1.38 ± 0.13	0.03
P2887.1	4.00 ± 0.63	0	NA	NA
P2955.0	0.33 ± 0.07	0.02	0.34 ± 0.17	0.25
P2973.4	11.04 ± 1.71	0	NA	NA
P3090.3	NA	NA	12.32 ± 2.39	0
P3053.6	0.15 ± 0.12	0	NA	NA
P3081.4	0.06 ± 0.00	0	0.59 ± 0.15	0.21
P3099.2	0.67 ± 0.12	0.29	5.99 ± 1.28	0.01
P3138.0	0.12 ± 0.05	0	1.81 ± 0.95	0.21
P3270.7	0.27 ± 0.04	0.06	1.23 ± 0.33	0.57
P3283.7	0.08 ± 0.04	0	NA	NA
P3421.2	2.07 ± 0.34	0.01	1.27 ± 0.97	0.66
P3471.5	0.30 ± 0.14	0.01	0.69 ± 0.26	0.51
P3502.3	0.16 ± 0.03	0	2.65 ± 1.32	0.11

Suppl. Table 5 Metabolic levels of RW-responsive metabolites in WD-stressed leaves.

Here, only metabolic levels of the metabolites under WD treatment are shown, their metabolic levels under RW treatment was shown in Suppl. Table 4. Values presented for each point in time are means ± standard errors of data from three individual seedlings at the three-leaf stage. Statistical differences between samples were assessed by the Students *t*-test ($P < 0.05$). The comparison was performed as WD vs. control tissues at the same time point. Increased levels are marked in bold. Decreased levels are marked with shadow. RW: re-watering. WD: water deficit.

Metabolites	24 h		48 h		72 h	
	Fold change (WD/Control)	<i>t</i> -test value	Fold change (WD/Control)	<i>t</i> -test value	Fold change (WD/Control)	<i>t</i> -test value
Glycolic acid	0.20±0.05	0	1.89±0.46	0.08	5.13±0.22	0
Alanine	3.82±1.88	0.06	9.13±1.57	0	5.29±1.67	0.01

P1165.9	0.12±0.04	0	0.12±0.00	0	0.04±0.00	0
P1172.7	0.71±0.08	0.03	1.30±0.33	0.04	2.62±0.58	0.01
Valine	0.34±0.08	0	0.05±0.01	0	0.97±0.43	0.92
P1222.0	0.91±0.33	0.76	3.06±1.04	0.03	0.17±0.07	0
Isoleucine	2.03±0.25	0	1.70±0.32	0.12	1.55±0.20	0.01
Glycine	4.52±0.82	0.01	0.60±0.02	0	0.07±0.02	0
P1375.4	1.07±0.09	0.68	0.78±0.05	0.5	0.33±0.12	0.07
Threonine	12.33±1.01	0	3.77±0.43	0	0.77±0.13	0.06
P1459.6	1.05±0.17	0.75	1.38±0.37	0.13	0.13±0.03	0
Proline	1.55±0.06	0	3.47±0.60	0.01	2.01±0.35	0.01
P1559.5	1.47±0.33	0.11	2.52±0.56	0.01	0.58±0.13	0.01
P1583.9	0.81±0.07	0.23	1.80±0.87	0	0.22±0.07	0
P1606.9	4.76±1.05	0	1.03±0.43	0.64	0.43±0.18	0.06
Glutamine	1.88±0.01	0	3.80±0.32	0	1.49±0.48	0.18
Spermine	1.00±0.25	0.98	1.64±0.58	0.36	0.18±0.05	0
Asprgine	1.47±0.04	0	2.28±0.45	0.03	1.20±0.07	0.03
P1734.9	0.73±0.31	0.37	2.24±0.31	0	0.53±0.29	0.09
P1784.3	5.00±0.14	0	9.67±1.87	0	1.10±0.07	0.12
Citric acid	0.66±0.05	0.03	0.15±0.00	0	0.18±0.04	0
Fructose	1.80±0.19	0.01	5.22±0.99	0.01	8.42±3.14	0.02
P1877.1	3.23±0.35	0	4.01±0.80	0.02	24.4±2.75	0
Glucose	2.11±0.34	0	1.99±0.32	0.01	4.17±1.18	0.98
P2154.2	2.40±0.24	0	2.02±0.47	0.02	4.54±0.62	0
P2179.8	8.50±1.13	0	3.84±1.00	0.03	4.96±0.34	0
P2416.9	0.83±0.08	0.45	2.61±0.88	0.04	1.18±0.31	0.46
P2436.3	1.17±0.63	0.66	4.04±0.36	0	0.79±0.10	0.03
P2447.6	0.13±0.01	0.02	0.12±0.03	0.01	0.72±0.03	0.28
Adenosine	0.35±0.12	0.01	1.21±0.36	0.3	0.97±0.42	0.93
Trehalose	0.36±0.06	0	3.49±0.77	0.02	17.28±2.17	0
Maltose	0.22±0.06	0	0.52±0.09	0	1.10±0.12	0.71
P2745.4	1.38±0.11	0.06	5.48±1.41	0.03	8.08±2.24	0.04
P2761.1	1.27±0.24	0.17	2.22±0.52	0.02	1.08±0.35	0.8
P2802.3	2.17±0.49	0.02	2.00±0.13	0.05	0.69±0.32	0.37
P2887.1	0.75±0.09	0.39	0.95±0.40	0.94	0.43±0.09	0.01
P2955.0	0.52±0.05	0.01	3.35±0.54	0	8.28±0.47	0
P2973.4	2.31±0.18	0	1.43±0.44	0.22	0.07±0.00	0.03
P3053.6	1.48±0.20	0.06	3.15±0.48	0.01	8.65±2.97	0.01
P3081.4	2.43±0.50	0.01	4.44±0.81	0	2.59±0.41	0
P3138.0	0.20±0.08	0	2.68±0.33	0	0.50±0.11	0.03
P3421.2	0.98±0.27	0.91	2.69±0.37	0.01	1.68±0.12	0.03
P3471.5	0.96±0.39	0.8	8.31±0.00	0	0.78±0.24	0.34
P3502.3	1.85±0.36	0.02	6.12±0.00	0	1.60±0.75	0.4

Suppl. Table 6 Metabolic levels of RW-responsive metabolites in WD-stressed roots.

Here, only metabolic levels of the metabolites under WD treatment are shown, their metabolic levels under RW treatment was shown in Suppl. Table 4. Values presented for each point in time are means ± standard errors of data from three individual seedlings at the three-leaf stage. Statistical differences between samples were assessed by the Students *t*-test ($P < 0.05$). The comparison was performed as WD vs. control tissues at the same time point. Increased levels are marked in bold. Decreased levels are marked with shadow. NA indicates that the data were not applicable. RW: re-watering, WD: water deficit.

Metabolites	Fold change (WD/Control) 24 h	<i>t</i> -test value	Fold change (WD/Control) 48 h	<i>t</i> -test value	Fold change (WD/Control) 72 h	<i>t</i> -test value
Adenosine	1.25 ±0.49	0.55	1.69 ±0.32	0.19	2.83 ±0.04	0
Asprgine	1.10 ±0.24	0.51	1.26 ±0.58	0.49	2.97 ±0.09	0
Fructose	2.78 ±0.41	0	1.10 ±0.11	0.68	0.48 ±0.08	0.02
Glycine	1.30 ±0.02	0.03	1.19 ±0.22	0.34	2.35 ±0.04	0
Isoleucine	0.77 ±0.12	0.23	1.44 ±0.00	0.12	5.68 ±0.33	0
P1172.7	1.22 ±0.46	0.48	0.50 ±0.01	0.04	2.02 ±0.32	0.01
P1222.0	0.26 ±0.03	0.01	0.43 ±0.07	0.01	0.25 ±0.08	0
P1342.7	0.29 ±0.00	0.01	1.81 ±0.17	0	3.13 ±1.98	0.14
P1606.9	1.04 ±0.17	0.81	2.46 ±0.68	0.03	2.64 ±0.40	0.01
P1784.3	3.27 ±0.95	0.02	1.18 ±0.23	0.26	1.46 ±0.13	0.15
P2154.2	1.01 ±0.22	0.96	2.71 ±0.76	0.02	2.51 ±0.68	0.02
P2179.8	0.55 ±0.09	0.05	0.46 ±0.28	0.07	0.14 ±0.07	0
P2342.9	0.53 ±0.18	0.14	0.66 ±0.19	0.19	2.45 ±0.51	0.01

P2436.3	2.35 ±0.05	0	1.28 ±0.72	0.6	0.98 ±0.33	0.93
P2917.9	0.63 ±0.31	0.11	4.81 ±2.13	0.04	0.83 ±0.68	0.74
P2955.0	NA	NA	3.85 ±2.90	0.17	10.39 ±5.46	0.04
P3090.3	1.06 ±0.14	0.81	1.26 ±1.01	0.7	2.18 ±0.54	0.04
P3099.2	0.17 ±0.12	0	0.53 ±0.13	0.24	1.41 ±0.42	0.29
P3138.0	1.19 ±0.10	0.21	0.16 ±0.03	0	0.85 ±0.14	0.61
P3421.2	0.00 ±0.00	0.04	3.30 ±0.60	0	3.45 ±1.31	0.04
P3471.5	15.50 ±5.77	0.01	0.11 ±0.04	0.02	1.91 ±0.55	0.17
Pentonic acid	0.44 ±0.08	0	1.63 ±0.69	0.21	0.56 ±0.08	0.12
Proline	1.21 ±0.10	0.2	1.38 ±0.24	0.1	3.51 ±0.03	0
Spermine	1.15 ±0.29	0.59	2.14 ±0.11	0.01	1.91 ±0.12	0
Threonine	0.99 ±0.20	0.92	1.13 ±0.45	0.56	2.21 ±0.07	0
Valine	1.98 ±0.25	0	1.00 ±0.36	1	0.09 ±0.03	0

Suppl. Table 7 Metabolic levels of metabolites responsive to both WD and RW in both leaves and roots.

Values presented for each point in time are means \pm standard errors of data from three individual seedlings at the three-leaf stage. Statistical differences between samples were assessed by the Students *t*-test ($P < 0.05$). The comparison was performed as WD(or RW) vs. control tissues at the same time point. Increased levels are marked in bold. Decreased levels are marked with shadow. NA indicates that the data were not applicable. RW: re-watering. WD: water deficit.

Metabolites	In WD-treated leaves						In WD-treated roots						In both leaves and roots under RW (RW vs. Control)				<i>t</i> -test value
	Fold change (WD/Control)		Fold change (WD/Control)		Fold change (WD/Control)		Fold change (WD/Control)		Fold change (WD/Control)		Fold change (WD/Control)		Leaves	<i>t</i> -test value	Roots		
	24 h	<i>t</i> -test value	48 h	<i>t</i> -test value	72 h	<i>t</i> -test value	24 h	<i>t</i> -test value	48 h	<i>t</i> -test value	72 h	<i>t</i> -test value					
Adenosine	0.35±0.12	0.01	1.21±0.36	0.3	0.97±0.42	0.93	1.25 ±0.49	0.55	1.69 ±0.32	0.19	2.83 ±0.04	0	1.48 ±0.10	0.09	0.38 ±0.17	0.02	
Asprgine	1.47±0.04	0	2.28±0.45	0.03	1.20±0.07	0.03	1.10 ±0.24	0.51	1.26 ±0.58	0.49	2.97 ±0.09	0	1.07 ±0.02	0.31	0.31 ±0.10	0.02	
Fructose	1.80±0.19	0.01	5.22±0.99	0.01	8.42±3.14	0.02	2.78 ±0.41	0	1.10 ±0.11	0.68	0.48 ±0.08	0.02	18.29 ±0.47	0	1.21 ±0.18	0.16	
Glycine	4.52±0.82	0.01	0.60±0.02	0	0.07±0.02	0	1.30 ±0.02	0.03	1.19 ±0.22	0.34	2.35 ±0.04	0	1.02 ±0.26	0.92	0.09 ±0.02	0.01	
Isoleucine	2.03±0.25	0	1.70±0.32	0.12	1.55±0.20	0.01	0.77 ±0.12	0.23	1.44 ±0.00	0.12	5.68 ±0.33	0	3.01 ±0.58	0	0.13 ±0.06	0.04	
P1172.7	0.71±0.08	0.03	1.30±0.33	0.04	2.62±0.58	0.01	1.22 ±0.46	0.48	0.50 ±0.01	0.04	2.02 ±0.32	0.01	1.03 ±0.17	0.8	2.71 ±0.72	0.02	
P1222.0	0.91±0.33	0.76	3.06±1.04	0.03	0.17±0.07	0	0.26 ±0.03	0.01	0.43 ±0.07	0.01	0.25 ±0.08	0	0.40 ±0.06	0.02	1.81 ±0.04	0.01	
P1606.9	4.76±1.05	0	1.03±0.43	0.64	0.43±0.18	0.06	1.04 ±0.17	0.81	2.46 ±0.68	0.03	2.64 ±0.40	0.01	0.94 ±0.23	0.74	0.14 ±0.04	0.02	
P1784.3	5.00±0.14	0	9.67±1.87	0	1.10±0.07	0.12	3.27 ±0.95	0.02	1.18 ±0.23	0.26	1.46 ±0.13	0.15	0.38 ±0.18	0.13	0.87 ±0.01	0.54	
P2179.8	8.50±1.13	0	3.84±1.00	0.03	4.96±0.34	0	0.55 ±0.09	0.05	0.46 ±0.28	0.07	0.14 ±0.07	0	NA	NA	0.33 ±0.15	0.02	
P2436.3	1.17±0.63	0.66	4.04±0.36	0	0.79±0.10	0.03	2.35 ±0.05	0	1.28 ±0.72	0.6	0.98 ±0.33	0.93	5.66 ±0.60	0	1.21 ±0.27	0.41	
P2955.0	0.52±0.05	0.01	3.35±0.54	0	8.28±0.47	0	NA	NA	3.85 ±2.90	0.17	10.39 ±5.46	0.04	0.33 ±0.07	0.02	0.34 ±0.17	0.25	
P3138.0	0.20±0.08	0	2.68±0.33	0	0.50±0.11	0.03	1.19 ±0.10	0.21	0.16 ±0.03	0	0.85 ±0.14	0.61	0.12 ±0.05	0	1.81 ±0.95	0.21	
P3421.2	0.98±0.27	0.91	2.69±0.37	0.01	1.68±0.12	0.03	0.00 ±0.00	0.04	3.30 ±0.60	0	3.45 ±1.31	0.04	2.07 ±0.34	0.01	1.27 ±0.97	0.66	
P3471.5	0.96±0.39	0.8	8.31±0.00	0	0.78±0.24	0.34	15.50 ±5.77	0.01	0.11 ±0.04	0.02	1.91 ±0.55	0.17	0.30 ±0.14	0.01	0.69 ±0.26	0.51	
Proline	1.55±0.06	0	3.47±0.60	0.01	2.01±0.35	0.01	1.21 ±0.10	0.2	1.38 ±0.24	0.1	3.51 ±0.03	0	1.19 ±0.25	0.28	0.30 ±0.00	0	
Spermine	1.00±0.25	0.98	1.64±0.58	0.36	0.18±0.05	0	1.15 ±0.29	0.59	2.14 ±0.11	0.01	1.91 ±0.12	0	6.26 ±1.18	0	0.90 ±0.02	0.6	
Threonine	12.33±1.01	0	3.77±0.43	0	0.77±0.13	0.06	0.99 ±0.20	0.92	1.13 ±0.45	0.56	2.21 ±0.07	0	8.39 ±0.32	0	0.31 ±0.05	0	
Valine	0.34±0.08	0	0.05±0.01	0	0.97±0.43	0.92	1.98 ±0.25	0	1.00 ±0.36	1	0.09 ±0.03	0	4.69 ±2.59	0.07	0.50 ±0.03	0	

Suppl. Table 8 Loading capacity scores of the metabolites in each principle component group.

PC: principle component

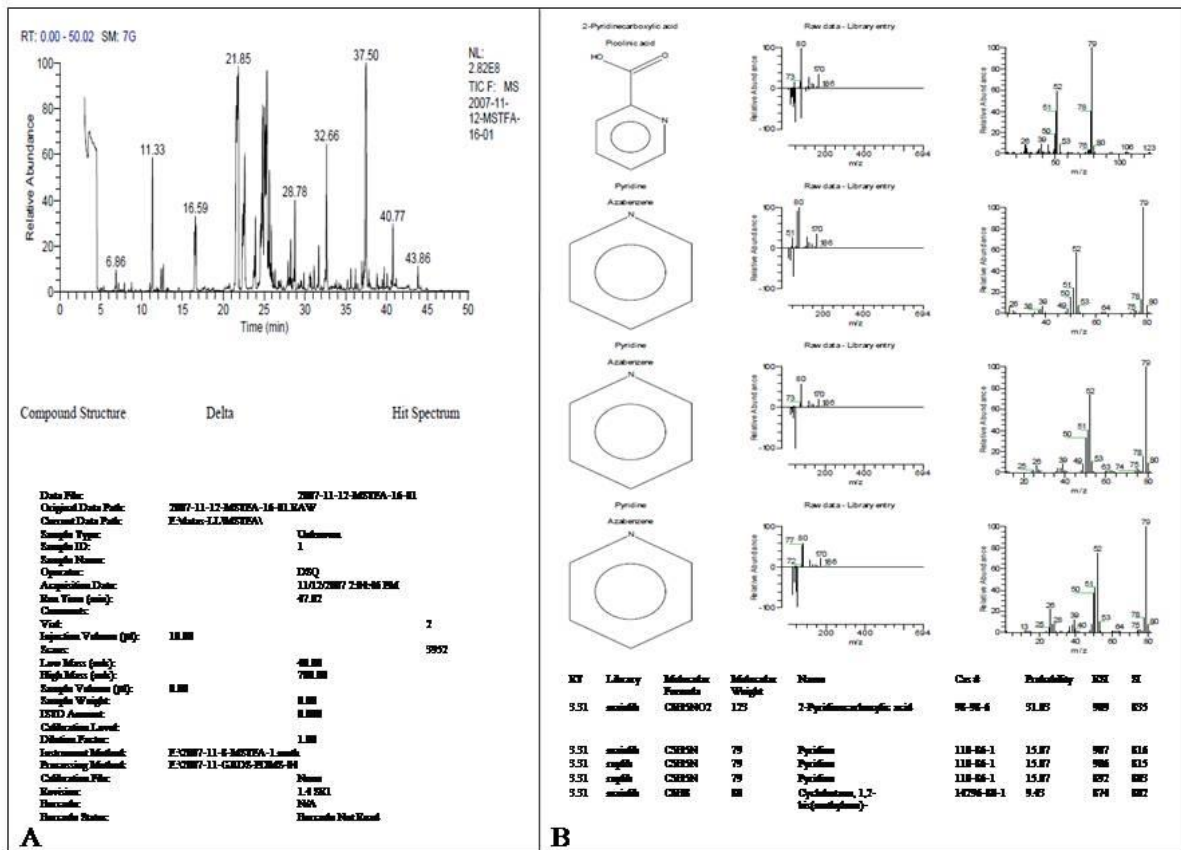
Metabolites	In PC1	Metabolites	In PC2	Metabolites	In PC3
P2056.8	0.99	P2879.5	0.70	P1459.6	0.75
P2847.3	0.99	P1570.8	0.69	P1946.6	0.72
P1661.9	0.98	P2775.3	0.66	Spermine	0.70
P1877.1	0.98	P3405.5	0.64	Glycine	0.63
P3119.1	0.98	A-Ketoglutarate	0.63	P2031.5	0.63
P2887.1	0.97	P3502.3	0.61	P2973.4	0.60
P2133.4	0.97	P1172.7	0.60	P1570.8	0.58
P2109.5	0.97	P3081.4	0.58	P1698.5	0.58
Fructose-6-phosphate	0.97	Succinic acid	0.57	Glutamine	0.57
Glyceric acid	0.96	P2652.6	0.57	Citric acid	0.54
P3337.7	0.96	Adenosine	0.57	Octadecenoic acid	0.53
P1208.5	0.95	P2279.0	0.56	P1540.4	0.53
P3099.2	0.95	P2549.5	0.54	P1583.9	0.49
P2342.9	0.95	Tryptamine	0.53	Hexadecanoic acid	0.48
P1779.8	0.95	P1250.9	0.53	P2398.8	0.45
P1979.6	0.95	P3246.4	0.52	Tyrosine	0.44
P1190.6	0.94	Phosphoric acid	0.52	P1222.0	0.44
P1471.2	0.94	P3283.7	0.49	A-Ketoglutarate	0.39
P2825.7	0.93	P2925.7	0.49	P1165.9	0.36
P2179.8	0.93	P3270.7	0.48	P2210.7	0.36
P2761.1	0.93	P1784.3	0.47	Sucrose	0.36
P2531.6	0.92	Isoleucine	0.47	Altrose	0.34
P1182.1	0.92	Asprgine	0.46	P2775.3	0.34
Malicacid	0.91	P3377.6	0.46	Asprgine	0.34
P2357.7	0.91	P2583.1	0.45	Threonine	0.33
P2447.6	0.90	P3471.5	0.45	Homocysteine	0.31
P2190.2	0.88	P2466.7	0.45	Maltose	0.28
P1559.5	0.86	P3421.2	0.44	P1471.2	0.26
P2492.9	0.86	P3182.2	0.42	Tryptamine	0.26
P2745.4	0.85	P2099.7	0.41	Adenosine	0.26
cis-Coniticacid	0.85	P1222.0	0.40	P1208.5	0.22
P3053.6	0.84	myo-Inositol	0.40	Serine	0.22
P1689.5	0.82	P2210.7	0.40	P1606.9	0.21
P2917.9	0.80	P3138.0	0.40	Galactose	0.19
P2802.3	0.80	Lactic acid	0.39	Fructose-6-phosphate	0.19
Altrose	0.78	P1540.4	0.39	Glucose	0.18

Suppl. Table 8 *Continued*

Metabolites	In PC1	Metabolites	In PC2	Metabolites	In PC3
myo-Inositol	0.78	P1689.5	0.38	P2099.7	0.17
Sucrose	0.77	Pentonic acid	0.37	P2378.3	0.17
P3202.6	0.76	Glucose-6-phosphate	0.36	P1375.4	0.16
P2139.1	0.74	Proline	0.36	P2436.3	0.15
P2955.0	0.73	P2802.3	0.35	Glyceric acid	0.15
P1734.9	0.73	P2745.4	0.35	P2887.1	0.15
P2279.0	0.71	Octadecenoic acid	0.34	Gluconic acid	0.15
Fructose	0.71	P2139.1	0.33	P1182.1	0.13
Pentonic acid	0.71	P2955.0	0.33	P1979.6	0.13
Tyrosine	0.68	P2436.3	0.32	P2761.1	0.13
Trehalose	0.66	Galacturonic acid	0.32	P1559.5	0.12
Tetradecanoicacid	0.66	P1741.0	0.31	P2342.9	0.12
Lactic acid	0.65	Alanine	0.31	Tetradecanoicacid	0.12
P2973.4	0.65	Trehalose	0.31	P2133.4	0.11
P1741.0	0.65	P1342.7	0.30	P2357.7	0.10
P2652.6	0.61	Glycolic acid	0.30	P1425.2	0.10
P1172.7	0.57	P2821.0	0.27	P2492.9	0.10
P3138.0	0.57	P1559.5	0.27	P1342.7	0.10
Gluconic acid	0.54	P1698.5	0.27	Malicacid	0.09
Glucose	0.53	P2398.8	0.26	P2821.0	0.08
Maltose	0.46	Threonine	0.25	P2349.7	0.08
P1946.6	0.43	P1734.9	0.25	P3138.0	0.07
A-Ketoglutarate	0.42	P2349.7	0.25	P1784.3	0.07
P3421.2	0.40	Tetradecanoicacid	0.24	cis-Coniticacid	0.07
P3405.5	0.40	P2761.1	0.24	P2139.1	0.06
Succinic acid	0.39	P2416.9	0.23	Valine	0.06
Adenosine	0.38	P1583.9	0.22	P1661.9	0.06
P1583.9	0.38	P1190.6	0.22	P3090.3	0.06
Galactonicacid	0.34	P2015.5	0.22	P2190.2	0.05
P3502.3	0.34	P1779.8	0.21	P3003.3	0.05
Galactose	0.29	P1157.8	0.20	P2879.5	0.05
Glycolic acid	0.28	P3003.3	0.20	P2948.8	0.05
P2154.2	0.27	Glucose	0.20	P3421.2	0.05
P2879.5	0.26	Hexadecanoic acid	0.20	P1250.9	0.05
Citric acid	0.24	P3053.6	0.19	P2056.8	0.04
P1267.8	0.24	Homocysteine	0.19	P1741.0	0.04
P3270.7	0.20	P3090.3	0.19	P2549.5	0.04
P3246.4	0.18	Tyrosine	0.18	P2917.9	0.04
P3377.6	0.16	Galactonicacid	0.16	Proline	0.04
P1222.0	0.15	P2741.9	0.16	P2847.3	0.03

Suppl. Table 8 *Continued*

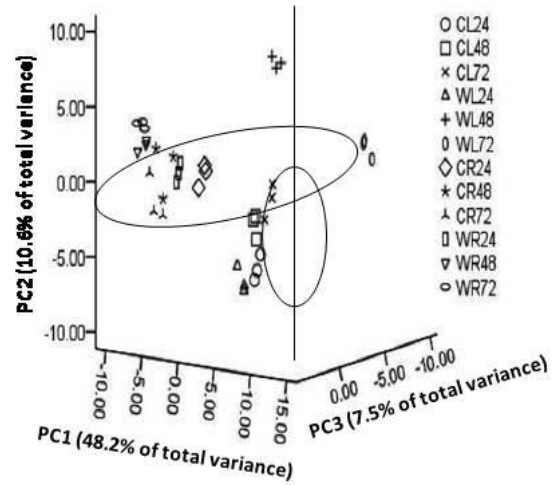
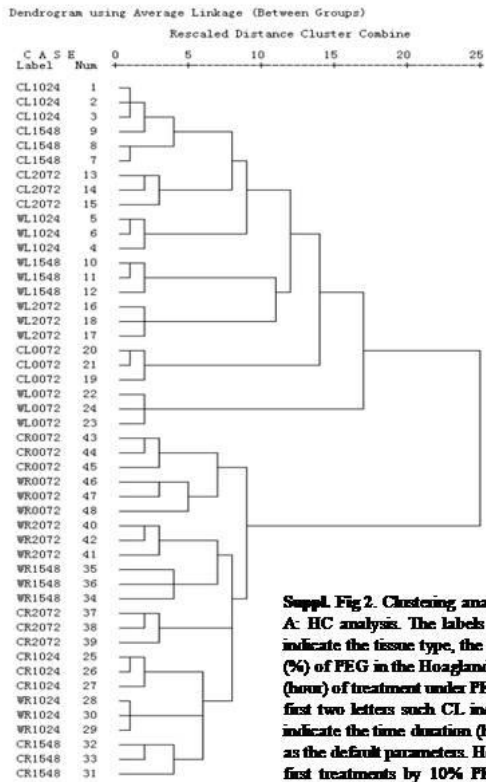
Metabolites	In PC1	Metabolites	In PC2	Metabolites	In PC3
P3283.7	0.14	P2154.2	0.16	P2802.3	0.03
P1570.8	0.14	P1946.6	0.16	P2447.6	0.03
Tryptamine	0.06	P2948.8	0.15	P3471.5	0.02
P1540.4	0.04	P1511.5	0.15	P2015.5	0.02
P1833.7	0.01	P2702.2	0.15	P2702.2	0.01
Glycine	-0.07	P2031.5	0.14	P1511.5	0.01
P3471.5	-0.07	P2689.5	0.14	P1877.1	0.01
P3182.2	-0.11	P1182.1	0.14	Isoleucine	0.00
P3081.4	-0.13	Glucaricacid	0.14	P2741.9	0.00
P2775.3	-0.14	P2331.2	0.12	P3099.2	-0.01
P1157.8	-0.14	P1844.6	0.12	Succinic acid	-0.01
Octadecenoic acid	-0.16	P3482.4	0.12	P2825.7	-0.02
P2031.5	-0.17	Maltose	0.11	P1734.9	-0.02
P1698.5	-0.20	Aspartic acid	0.09	myo-Inositol	-0.02
Hexadecanoic acid	-0.25	P1606.9	0.09	P2179.8	-0.02
Benzoic acid	-0.30	Spermine	0.08	P2689.5	-0.03
Spermine	-0.32	Fructose	0.07	P2331.2	-0.03
P2583.1	-0.34	P1553.2	0.07	P3119.1	-0.03
P2925.7	-0.35	P2109.5	0.07	P2583.1	-0.03
P2549.5	-0.35	P2531.6	0.06	P2531.6	-0.04
P2378.3	-0.36	P2357.7	0.06	P1190.6	-0.05
Valine	-0.38	P2133.4	0.05	Fructose	-0.05
Sorbitol	-0.38	P2492.9	0.05	P1844.6	-0.05
P1250.9	-0.42	P1833.7	0.05	Aspartic acid	-0.06
P2466.7	-0.45	P1459.6	0.04	P2109.5	-0.07
Glutamine	-0.45	P1471.2	0.04	P2466.7	-0.07
P3482.4	-0.46	P3099.2	0.04	P3377.6	-0.08
P1459.6	-0.47	P2917.9	0.03	P3337.7	-0.09
Asprgine	-0.48	Glutamine	0.02	Pentonic acid	-0.09
P2398.8	-0.52	Altrose	0.02	Alanine	-0.10
Homocysteine	-0.53	P3202.6	0.01	Benzoic acid	-0.11
P1784.3	-0.54	P1661.9	0.01	Glucaricacid	-0.11
P2416.9	-0.56	Fructose-6-phosphate	-0.01	Phosphoric acid	-0.11
P2349.7	-0.57	P2863.4	-0.01	P1553.2	-0.11
Glucose-6-phosphate	-0.59	P3337.7	-0.02	P3405.5	-0.11
Phosphoric acid	-0.61	Galactose	-0.05	Galacturonic acid	-0.12
P1425.2	-0.62	P3119.1	-0.05	P3502.3	-0.12
P2210.7	-0.64	Glyceric acid	-0.06	P2154.2	-0.12
P1165.9	-0.64	P1877.1	-0.06	P3482.4	-0.13
P1954.3	-0.65	P2825.7	-0.08	P2279.0	-0.13



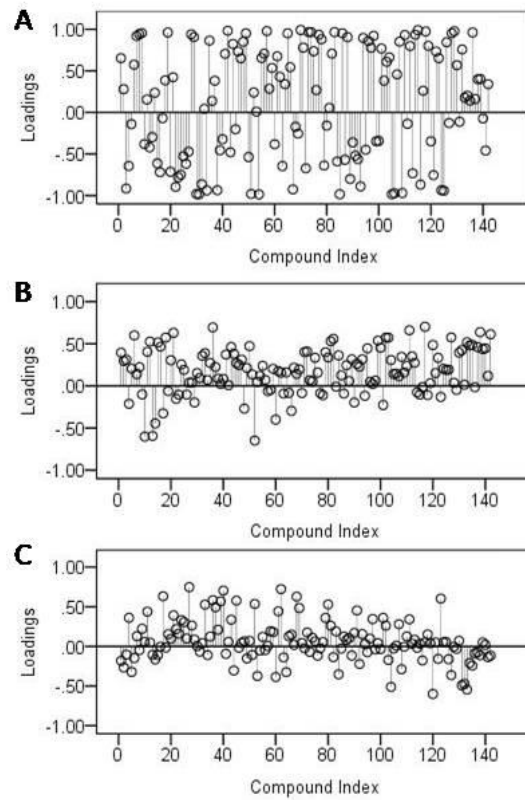
Suppl. Fig 1. An example of our GC-MS traces

A: Hit spectrum. B: Analyses of compound structure resulting mass spectrum.

A HIERARCHICAL CLUSTER ANALYSIS **B**



Suppl. Fig 2. Clustering analysis of treatment effects on maize seedlings at the three-leaf stage by HC and PC.
A: HC analysis. The labels such as CL1024 mean the experimental treatment, where the first two letters such CL indicate the tissue type, the first two digits such as 10, 15 or 20 following the first words represent the concentration (%) of FEG in the Hoagland's nutrient solution, and the last two digits such as 24, 48 or 72 indicate the time duration (hour) of treatment under FEG. **B: PC analysis.** The icons such as CL1024 mean the experimental treatment, where the first two letters such CL indicate the tissue type, the last two digits such as 24, 48 or 72 following the first words indicate the time duration (hour) of treatment under FEG. All analyses were performed using the SPSS 16.0 software as the default parameters. Here, the time duration (hour) of treatment is the cumulative time from the beginning of the first treatments by 10% FEG. CL, control-treated leaves. CR, control-treated roots. HC, hierarchical cluster; PC, principal component; RW, re-watering; WD, water deficit; WL, WD-treated leaves; WR, WD-treated roots.



Suppl. Fig 3. Loading capacities of detected metabolites.

A: Loading capacity of PC1. **B:** Loading capacity of PC2. **C:** Loading of PC3. All analyses were performed using the SPSS 16.0 software as the default parameters. PC, principal component.