Additional file 6: Correlation coefficients (Pearson's r) of traits. Correlation was done based on best linear unbiased estimates (BLUPS). Abbreviations: Number of lateral roots in the first segment (No_{Lat} 1st) or second segment (No_{Lat} 2nd), length of representative lateral root in the first segment (Med_{Lat} 1st) or second segment (Med_{Lat} 2nd), maximal lateral root length in the first segment (Max_{Lat} 1st) or in the second segment (Max_{Lat} 2nd), branching density in the first segment ($Br_{Lat}1^{st}$) or in the second segment ($Br_{Lat}2^{nd}$), branching density across both segments ($Br_{Lat}Tot$), length of the branching zone (LBrZone), total number of lateral roots ($No_{Lat}Tot$), elongation rate crown roots (ER_{Cr}), length of crown roots at solution change (intercept; IC_{Cr}), embryonic root dry weight (DW_{ER}), crown root dry weight (DW_{CR}), leaf greenness (SPAD), leaf area measured (LA_m), dry weight shoot (DWS), leaf area pixel based (LA_{Pix}), shoot pixel count at solution change intercept (IC_S), shoot pixel count development (ER_S), N content in the leaf in % of total dry weight (N). Significance level: ≤ 0.001 ***, ≤ 0.01**, ≤ 0.05*.

Pearson's r	$No_{Lat}1^{st}$	$No_{Lat}2^{nd}$	$Med_{Lat}1^{st}$	$Med_{Lat}2^{nd}$	$Max_{Lat}1^{st}$	$Max_{Lat}2^{nd}$	$Br_{Lat}1^{st}$	$Br_{Lat}2^{nd}$	$Br_{Lat}Tot$	LBrZone	$No_{Lat}Tot$	ER_{CR}	IC_{CR}	DW_{ER}	DW_{CR}	SPAD	LA_m	DWS	LA_{Pix}	IC_S	ER_S	N
$No_{Lat}1^{st}$	1	0.78***	0.51*	0.51*	0.57**	0.51*	0.34*	0.36*	0.36*	0.58**	0.95***	0.47*	0.38*	0.30	0.05	-0.30	0.42*	0.46*	0.39	0.53**	0.39	0.05
$No_{Lat}2^{nd}$		1	0.58**	0.69***	0.70***	0.64***	0.23	0.37	0.30	0.45*	0.90***	0.49*	0.05	0.21	0.39	-0.24	0.52**	0.55**	0. 48*	0.46*	0.46*	0.16
$Med_{Lat}1^{st}$			1	0.62***	0.76***	0.77***	0.09	0.21	0.15	0.22	0.59**	0.08	-0.16	-0.12	0.42*	-0.36	0.21	0.26	0.12	0.56**	0.09	0.03
$Med_{Lat}2^{nd}$				1	0.68***	0.66***	0.43*	0.50*	0.47*	0.20	0.64**	0.45*	0.00	0.27	0.47*	-0.36	0.41*	0.45*	0.38	0.29	0.36	0.01
$Max_{Lat}1^{st}$					1	0.80***	0.40*	0.52**	0.46*	0.30	0.71***	0.16	-0.14	0.10	0.52**	-0.23	0.54**	0.55**	0.50*	0.33	0.46*	-0.06
$Max_{Lat}2^{nd}$						1	0.29	0.32	0.31	0.34	0.67***	0.03	0.06	0.21	0.45*	-0.52**	0.46*	0.46*	0.44*	0.28	0.44*	0.12
$Br_{Lat}1^{st}$							1	0.94***	0.99***	-0.15	0.38	0.35	0.02	0.30	0.06	-0.01	0.35	0.29	0.22	0.34	0.25	-0.48
$Br_{Lat}2^{nd}$								1	0.98***	-0.15	0.43*	0.39	-0.12	0.22	0.24	0.02	0.39	0.34	0.29	0.36	0.30	-0.38*
$Br_{Lat}Tot$									1	-0.17	0.40*	0.36	-0.05	0.27	0.14	0.00	0.37	0.31	0.25	0.35	0.27	-0.44**
LBrZone										1	0.55**	0.14	0.39	0.22	0.28	-0.37	0.45*	0.48*	0.52**	0.29	0.47*	0.19
NoLatTot											1	0.43*	0.22	0.28	0.19	-0.28	0.48*	0.51*	0.47*	0.44*	0.47*	0.12
ER_{CR}												1	0.17	0.11	0.04	-0.07	0.09	0.13	0.05	0.28	0.05	-0.09
IC_{CR}													1	0.26	-0.16	-0.47*	0.21	0.24	0.26	-0.09	0.26	0.23
DW_{ER}														1	0.08	0.02	0.56**	0.59**	0.58**	-0.05	0.61**	-0.16
DW_{CR}															1	-0.34	0.64***	0.65***	0.59**	0.35	0.55**	-0.01
SPAD																1	-0.22	-0.24	-0.28	-0.12	-0.30	-0.19
LA_m																	1	0.98***	0.95***	0.20	0.94***	-0.13
DWS																		1	0.93***	0.26	0.92***	-0.08
LA_{Pix}																			1	0.02	0.99***	0.03
IC_S																				1	-0.02	-0.22
ER_S																					1	-0.01
N																						1