

Supplementary Table 1. Linear model results and pairwise comparison for the uprooting experiment in soil and compost. All results are in comparison to wild type (Col-0). Dashes indicate no significant difference. Analysis was conducted in ‘R’ 3.0.3 using lm().

Substrate	Variable	Significance of interaction	Significance of line effect at mean root length density	Line	Pair-wise comparison to Col-0 (t= Intercept of the mean root length density) (± standard deviation of residuals)	Pairwise comparison to Col-0 (t= Parameter of interaction with root length density) (± standard deviation of residuals)
clay soil	Peak Uprooting Force (N)	$F_{2,54} = 13.27$ $P = 2.21 \times 10^{-5}$	$F_{2,56} = 57$ $P = 4.959 \times 10^{-14}$	Wild type	(±0.33)	(±0.33)
				<i>cpc try</i>	$t = -6.745$ $P = 1.07 \times 10^{-8}$ d.f = 56 (±0.26)	$t = -3.034$ $P = 0.00376$ d.f = 54 (±0.13)
				<i>wer myb</i>	$t = 3.826$ $P = 0.00034$ d.f = 56 (±0.41)	$t = 2.605$ $P = 0.01194$ d.f = 54 (±0.32)
	Work Done (mJ)	$F_{2,54} = 18.4$ $P = 8.937^{-7}$	$F_{2,56} = 30.44$ $P = 1.4 \times 10^{-9}$	Wild type	(±6.54)	(±6.52)
				<i>cpc try</i>	$t = -4.371$ $P = 0.000057$ d.f = 56 (±6.6)	$t = -2.814$ $P = 0.006896$ d.f = 54 (±1.8)
				<i>wer myb</i>	$t = 3.44$ $P = 0.0011$ d.f = 56 (±13.3)	$t = 3.807$ $P = 0.000372$ d.f = 54 (±10.4)
	Mean Magnitude of Force Drop (N)	-	$F_{2,56} = 12.57$ $P = 3.293 \times 10^{-5}$	Wild type	(±0.02)	-
				<i>cpc try</i>	$t = -4.3$ $P = 7.19 \times 10^{-5}$ d.f = 56 (±0.015)	-
				<i>wer myb</i>	-	-
compost	Peak Uprooting Force (N)	$F_{2,41} = 4.15$ $P = 0.02308$	$F_{2,43} = 13.58$ $P = 2.98 \times 10^{-5}$	Wild type	(±0.46)	(±0.42)
				<i>cpc try</i>	$t = -4.953$ $P = 1.30 \times 10^{-5}$ d.f = 43 (±0.38)	$t = -2.394$ $P = 0.0216$ d.f = 41 (±0.28)
				<i>wer myb</i>	-	-
	Work Done (mJ)	$F_{2,41} = 7.439$ $P = 0.00183$	$F_{2,43} = 12.3$ $P = 6.508 \times 10^{-5}$	Wild type	(±14)	(±11.2)
				<i>cpc try</i>	$t = -4.882$ $P = 1.64 \times 10^{-5}$ d.f = 43 (±12.2)	$t = -3.618$ $P = 0.000842$ d.f = 41 (±8.82)
				<i>wer myb</i>	-	-
	Mean Magnitude of Force Drop (N)	-	-	Wild type	-	-
				<i>cpc try</i>	-	-
				<i>wer myb</i>	-	-

