

Trait	WinRhizo	Calculation	SmartRoot	Calculation	GiARoots	Calculation
Total root length (cm)	620.25	indirect	612.85	indirect	720.11	direct
Length of all seminal roots (cm)	142.37	indirect	144.63	indirect	NA	-
Length of all lateral roots (cm)	477.88	indirect	468.22	indirect	NA	-
Specific Root Length	NA	-	NA	-	22.09	direct
Maximum Number of Roots	NA	-	NA	-	4	direct
Median Number of Roots	NA	-	NA	-	3	direct
Total surface area (cm^2)	402.86	indirect	369.52	indirect	515.45	direct
Average diameter (cm)	0.25	indirect	0.22	indirect	0.23	direct
Volume (cm^3)	NA	-	22.15	indirect	32.60	direct
TotalProjArea(cm2)	128.24	indirect	NA	-	NA	
Network Bushiness	NA	-	NA	-	1.33	direct
Number of Connected components	NA	-	NA	-	2	direct
Network Depth	NA	-	NA	-	105.43	direct
Network Width	NA	-	NA	-	26.32	direct
Network Width to Depth Ratio	NA	-	NA	-	0.25	direct
Network Area	NA	-	NA	-	144.30	direct
Network Convex Area	NA	-	NA	-	2245.08	direct
Network Perimeter	NA	-	NA	-	1529.82	direct
Network Length Distribution	NA	-	NA	-	0.40	direct
Network Solidity	NA	-	NA	-	0.06	direct
Minor Ellipse Axis	NA	-	NA	-	17.58	direct
Major Ellipse Axis	NA	-	NA	-	121.73	direct
Ellipse Axes Ratio	NA	-	NA	-	0.14	direct
for every root:						
rootOrder	yes	indirect*	yes		no	-
parent	yes	indirect*	yes	direct	no	-
sibling	yes	indirect*	yes	direct	no	-
number children primary	no	-	yes	direct	no	-
child density	yes	indirect*	yes	indirect	no	-
first child	yes	indirect*	yes	direct	no	-
position first child	no	-	yes	direct	no	-
last child	yes	indirect*	yes	direct	no	-
position last child	no	-	yes	direct	no	-

Insertion angle	yes	indirect*	yes	direct	no	-
Length of every single root	no	indirect*	yes	indirect	no	-
Traits that result from the single root measurements:	Average diameter of seminals/laterals		Average diameter of seminals/laterals Number of laterals per seminal root Length of primary root Length of the longest lateral (measurable for each seminal root) Length/position of (non-) braching zones Distances between laterals		-	