Attached document to Publishable Summary

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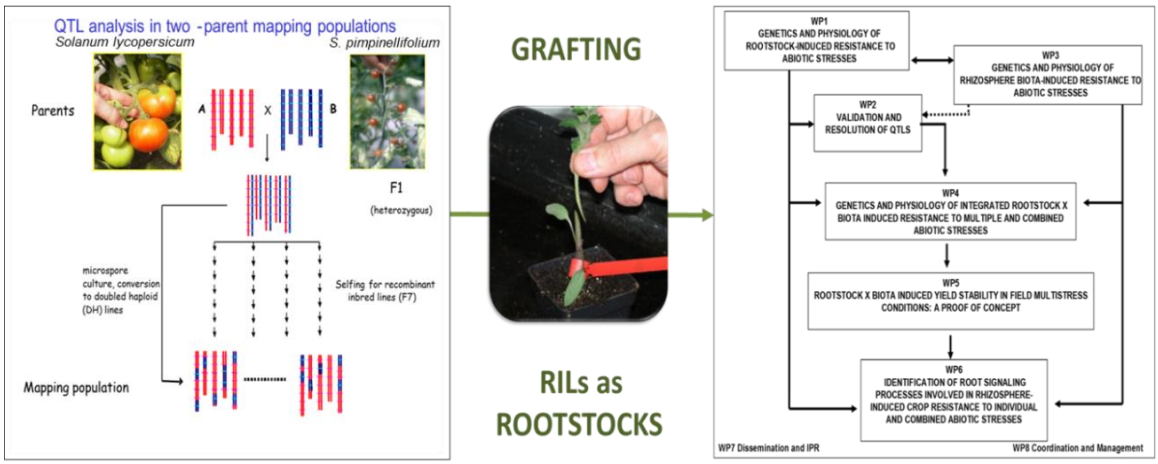


Figure 1. ROOTOPOWER analyzes and exploits the natural genetic variability existing in a recombinant inbred line population (RIL) from a cross between *Solanum lycopersicum* and *S. pimpinellifolium* and other selected lines (used as rootstocks) for their performance under multiple abiotic stresses and for their biotic interaction with natural soil microorganisms (mycorrhiza and rhizobacteria).

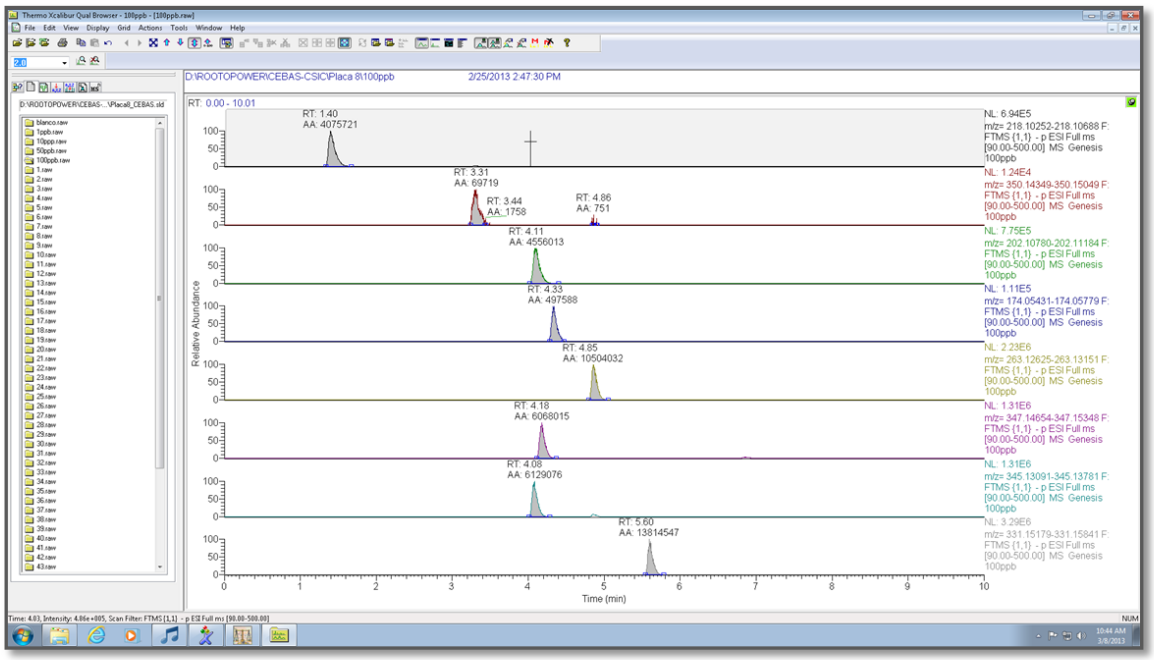
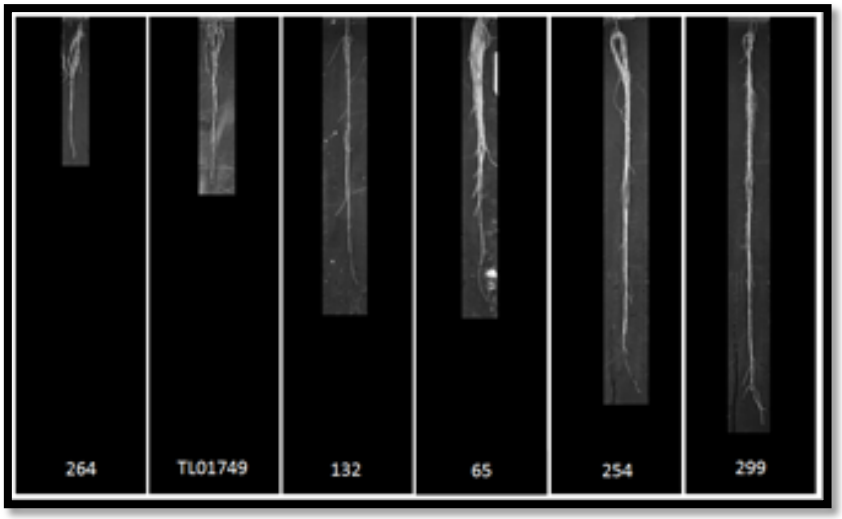


Figure 2. ROOTOPOWER uses high-throughput and ultrasensitive UPLC-MS/MS technologies to analyze the signalling molecules (hormones and other organic compounds) involved in rhizosphere-root-shoot communication and plant performance under individual and combined abiotic stress conditions.



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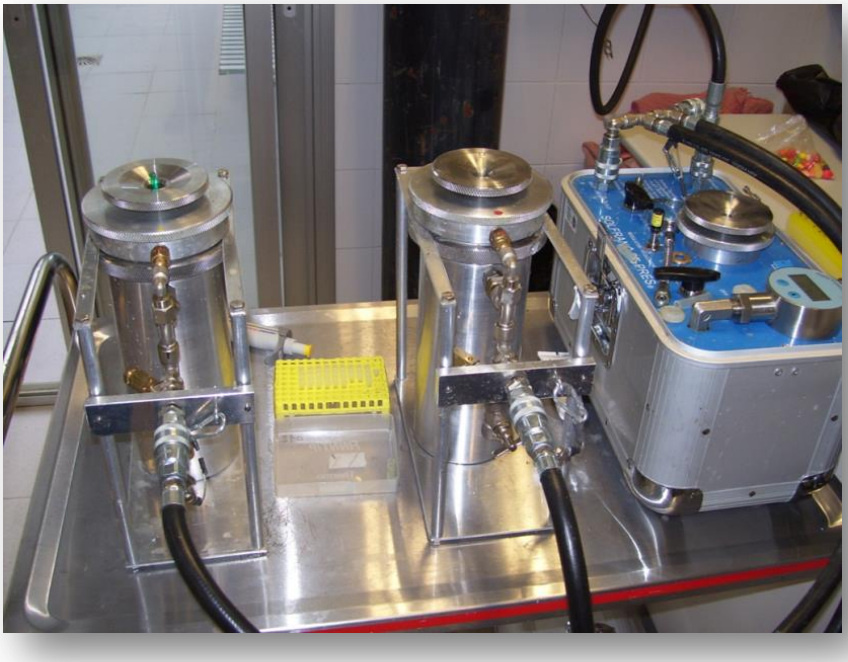

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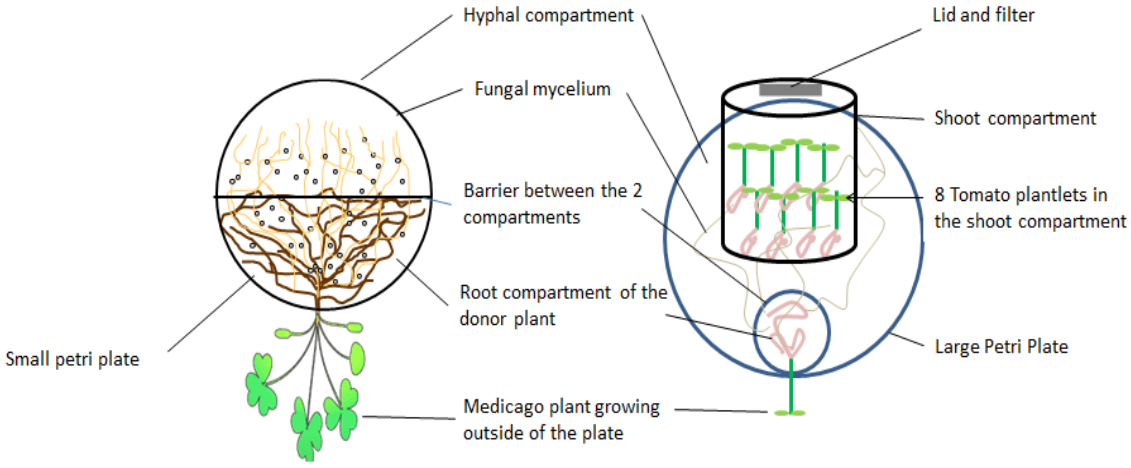
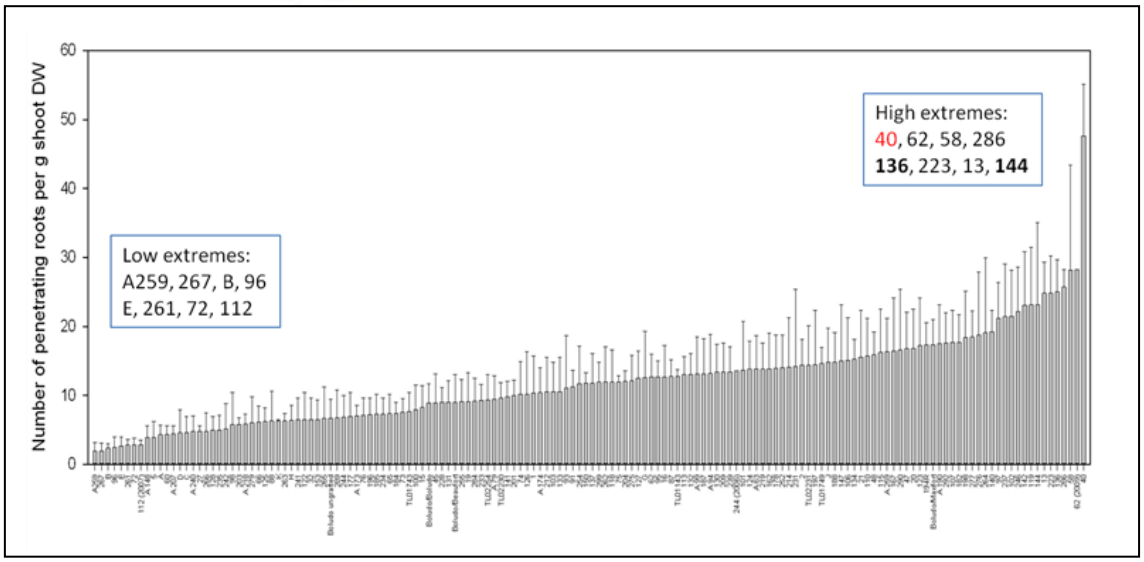


Figure 10. Fast-track *in vitro* mycorrhization system developed for potato (left) and adapted for tomato (right).



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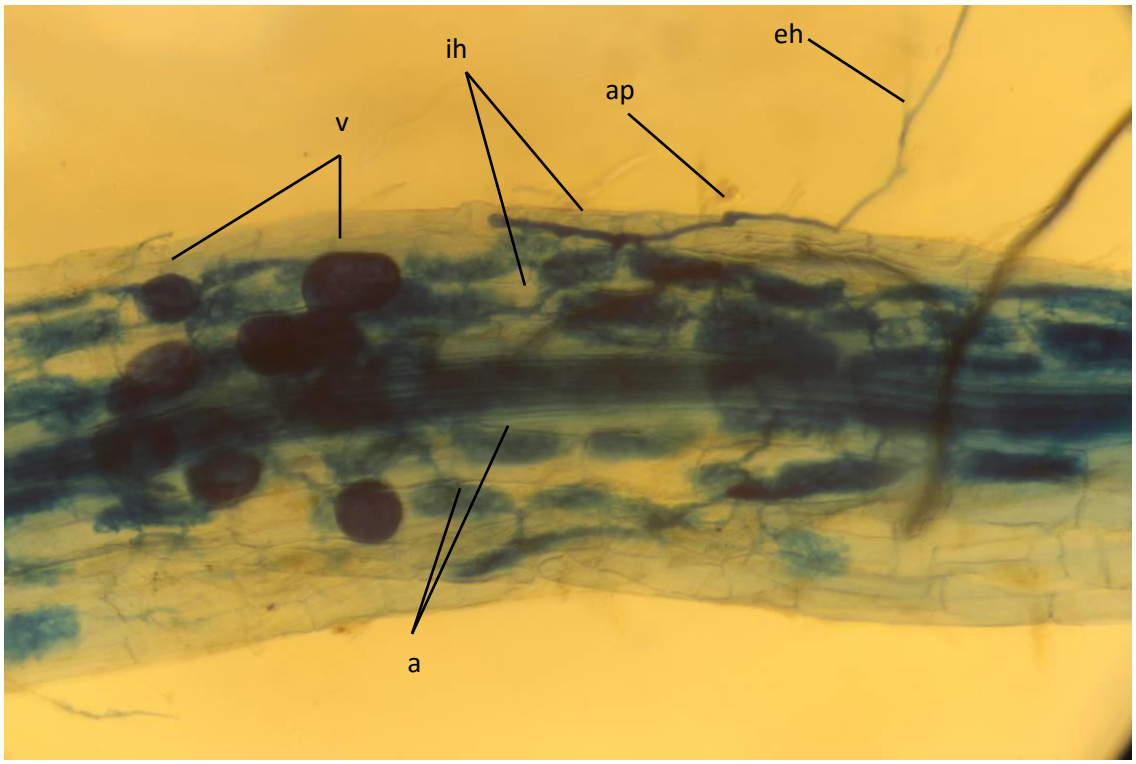
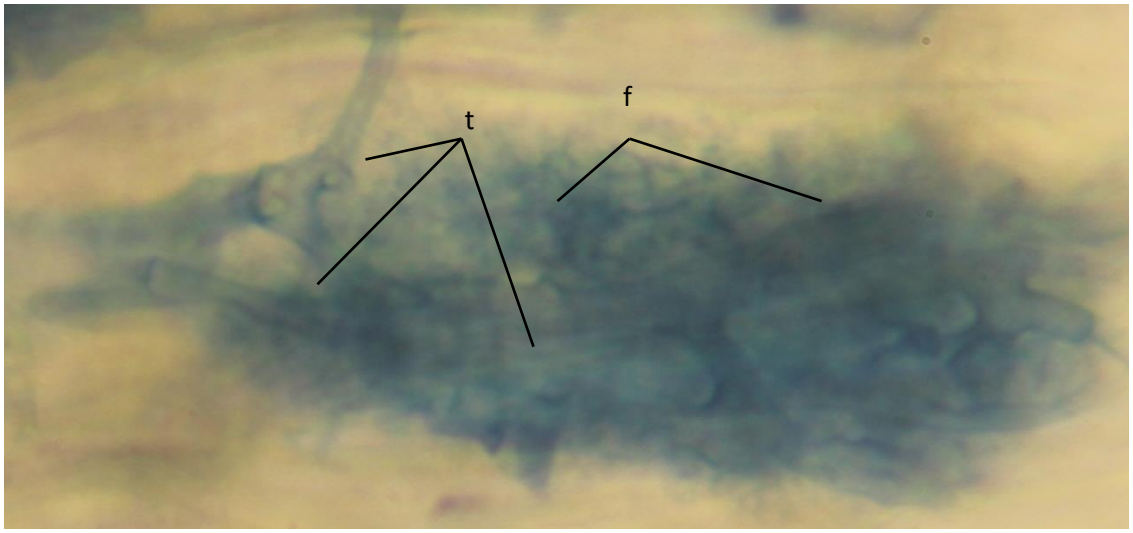


Figure 16. Automatized Plantalyser for P-RIL (used as rootstock) phenotyping on scion performance under low N



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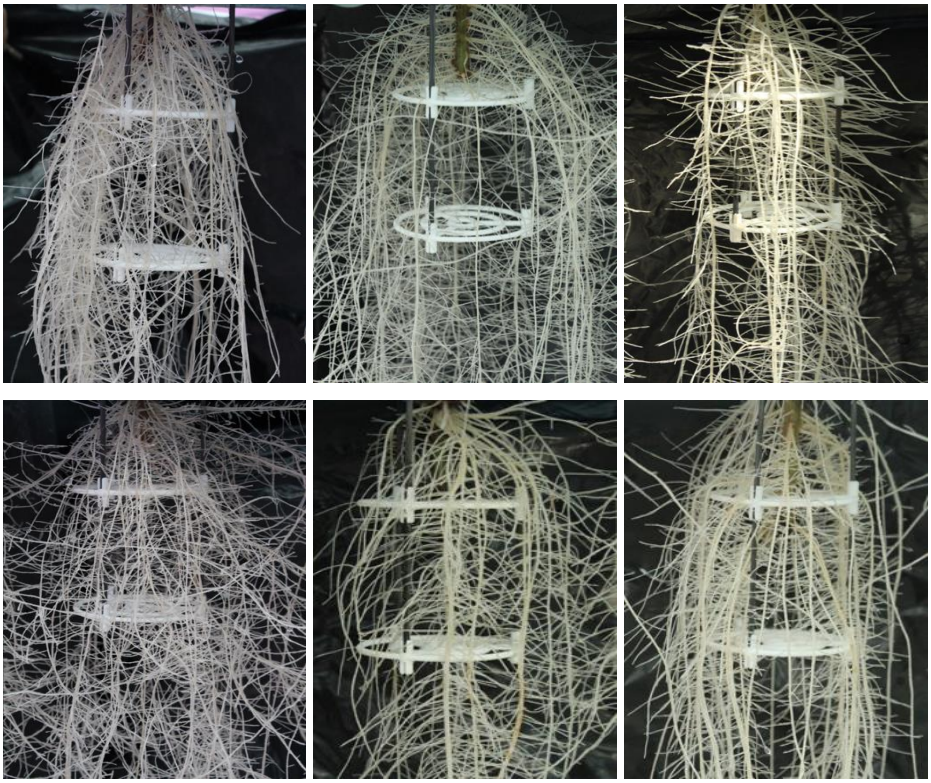

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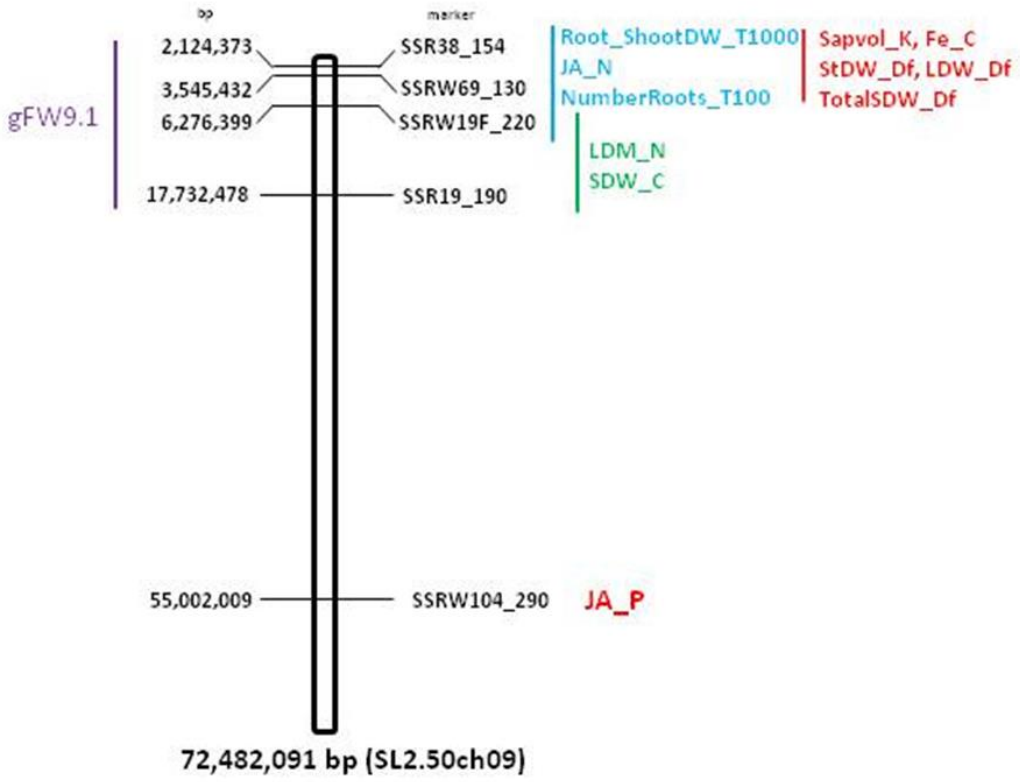


Figure 21. Schematic depiction of chromosome 9 QTL identified and analysed in Rootopower.

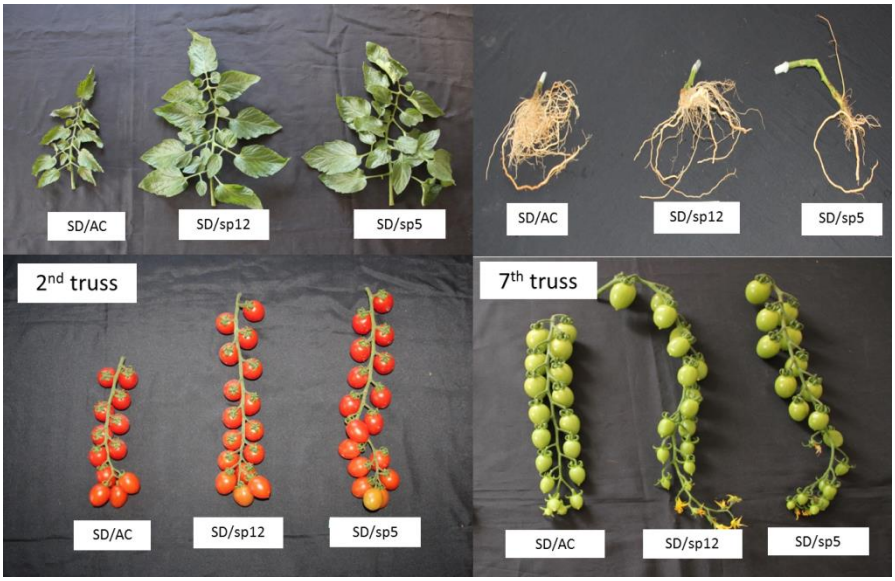
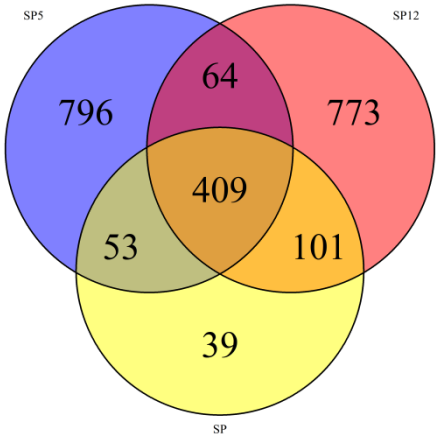


Figure 22. Leaves, roots and fruit trusses phenotypes of a tomato cultivar grafted onto two rootstocks producing a stress-related hormone compared to the control.



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a b

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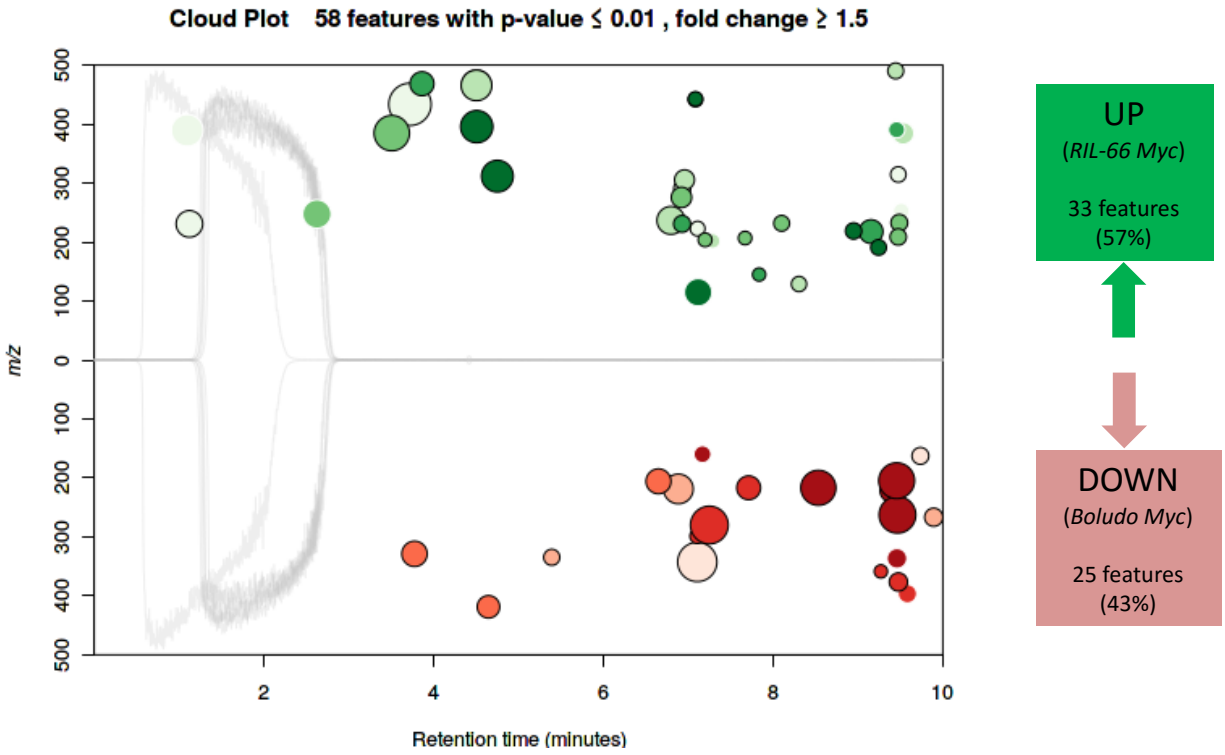

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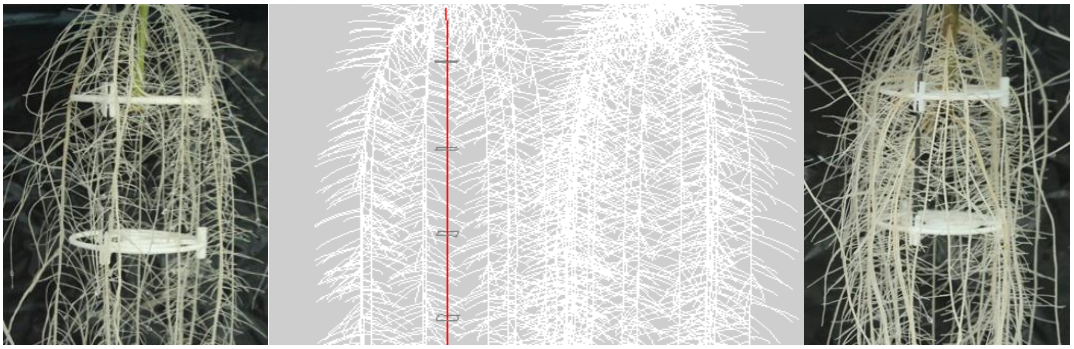

Figure 27. Rootstock system images obtained in aeroponic experiment from two contrasting lines differing in adventitious roots production (left and right panels), and the simulation using the model RootTyp (center panel).

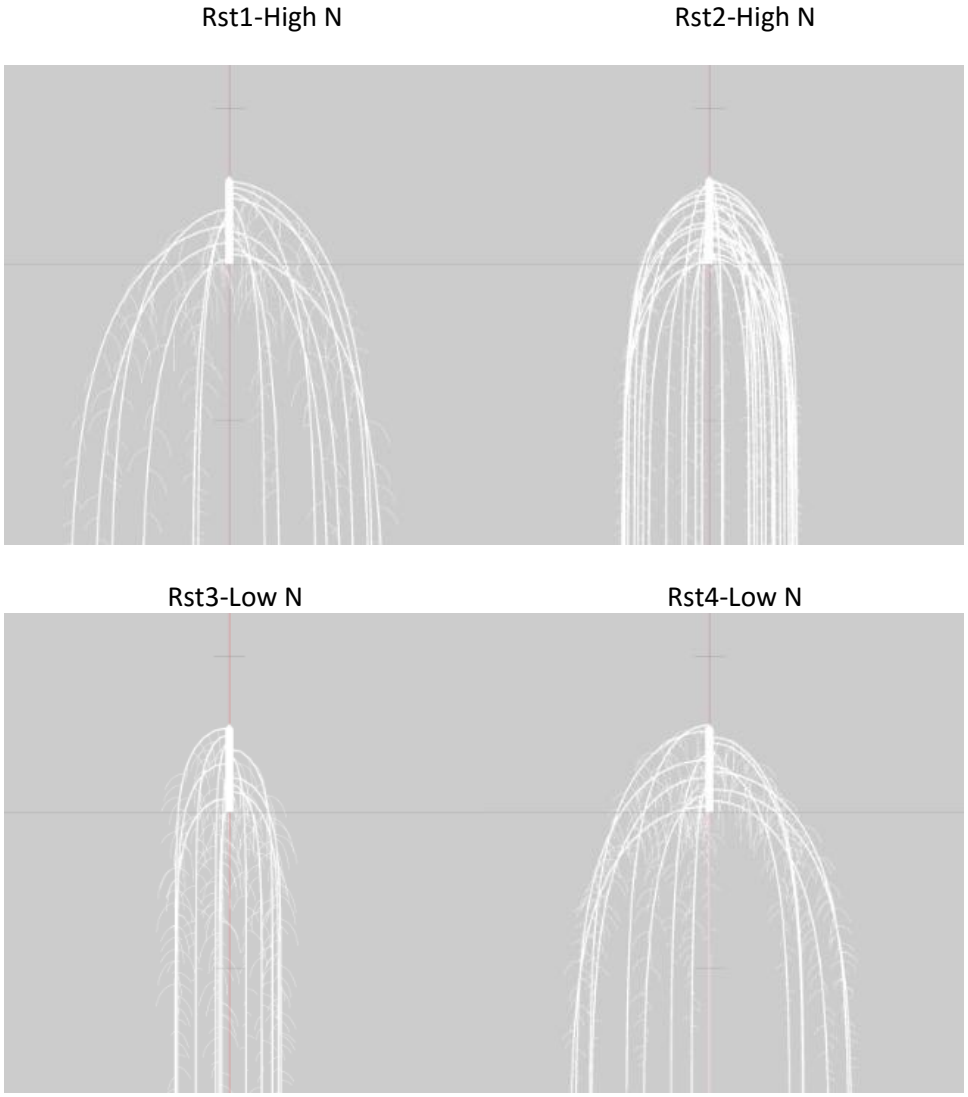

Figure 28. Representation of four virtual rootstock systems simulated using RootTyp in response to low N.

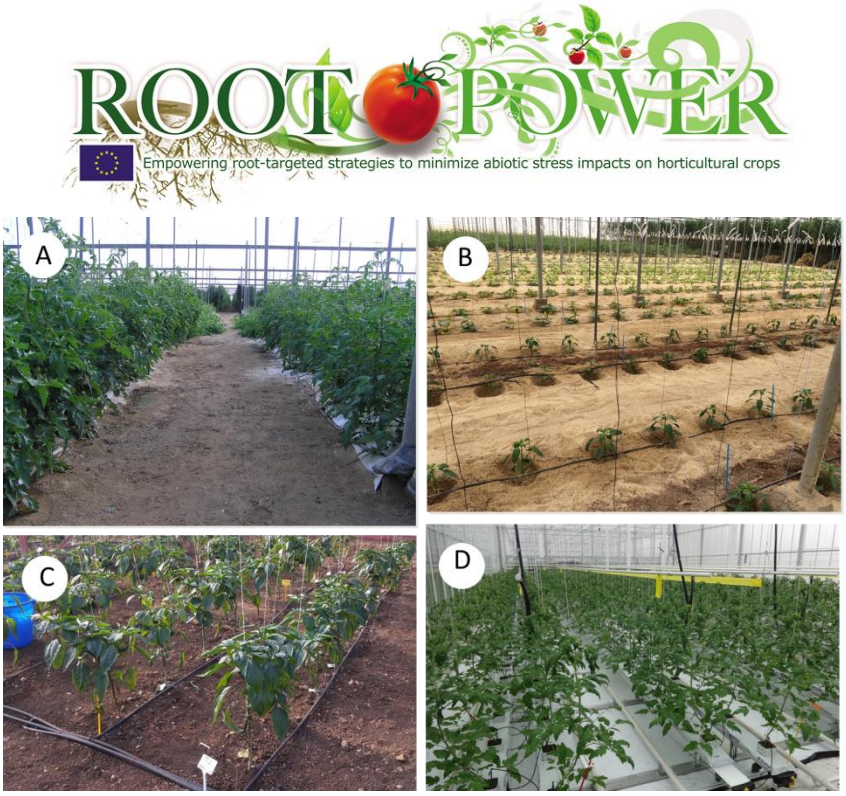

Figure 29. 'Proof of concept' field experiments with grated tomato in Spain (A, B), Turkey (C) and Holland (D).

Figure 30. 'Proof of concept' field experiments with other grafted species in Almeria (Spain).

2. List of partners

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