Preliminary Comparison of RootSnap! and RooTracker

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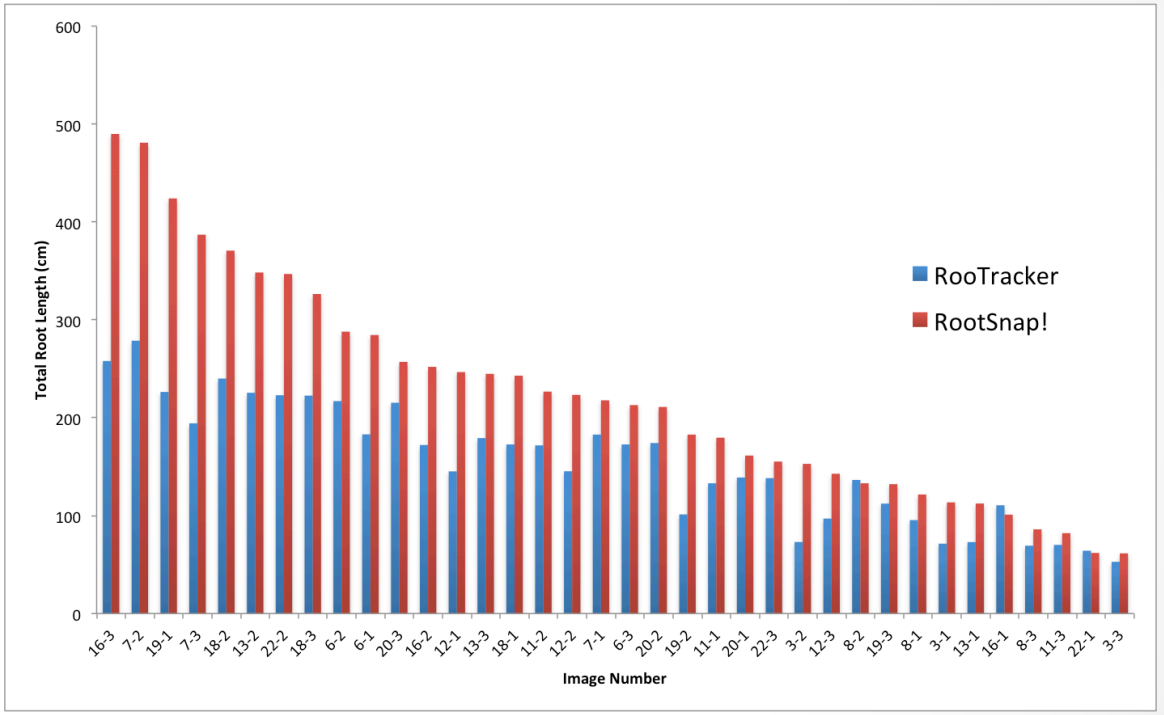
Using both RootSnap! and RooTracker, we analyzed root images of *Populus* species that were captured from minirhizotron tubes on October 31st, 2002 at the Nature Center common garden in Ogden, Utah. Our analysis included 12 tubes, each with windows at 3 different depths, resulting in 36 images for our comparison between the two software packages of total root length and total root count.

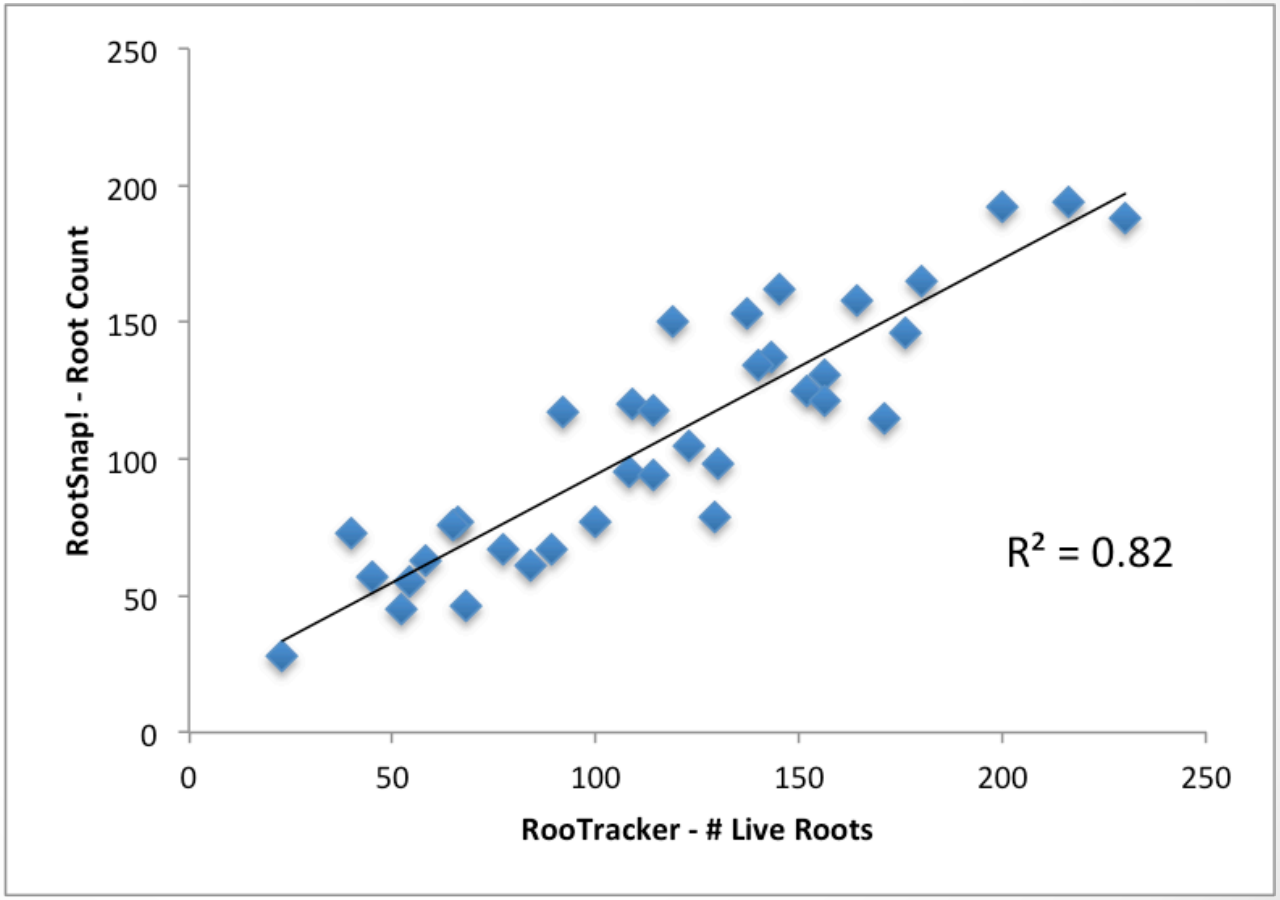
Total Root Length

- Total root length was much greater using RootSnap! for all but 3 of the 36 images analyzed.
- The average increase in total root length found with RootSnap! from that found with RooTracker was 41.97%.
- This is likely due to the increased capability for zooming with RootSnap!, allowing more individual roots and more small sections of roots to be detected.



Total Root Length

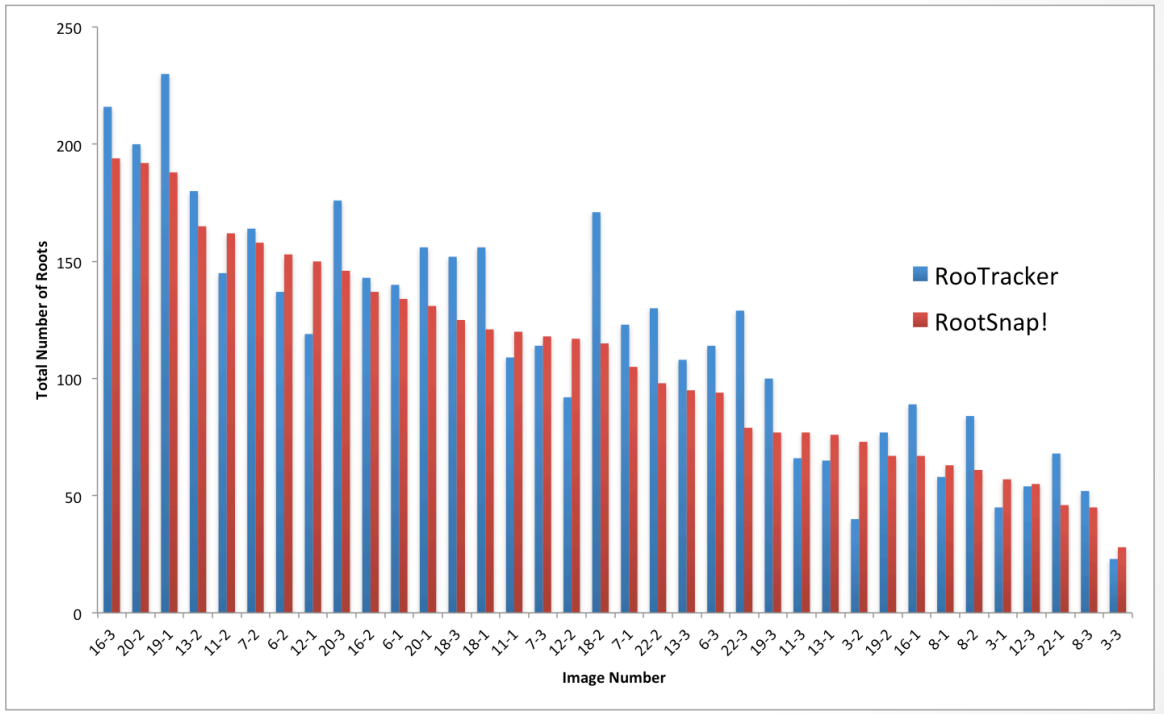
Agreement in *pattern* for total root length showed a strong consistency between the two programs.



Total Root Count

Total root counts were relatively similar overall, with RooTracker producing a slightly greater number of roots more often than RootSnap!

This is explained by differences in the way the programs calculate number of roots – RooTracker counts branches of primary roots as separate roots, while RootSnap! counts branches as part of the primary root.



Total Root Count

The agreement in *pattern* for total root count again showed a strong consistency between the two programs.