

Root Imaging in Agriculture

Roots play a vital role in crop and orchard health but are challenging to measure using above-ground indicators.

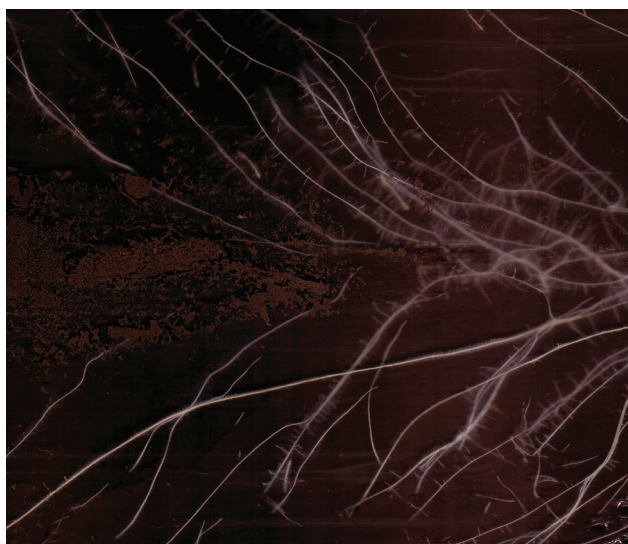
Because root-growth dynamics change seasonally and respond rapidly to various biotic and abiotic stressors, **improved visibility and accessibility to roots** throughout the growing season is key to improving crop management practices.

Evaluating Roots in the Field

Non-destructive root images show a variety of features including root system architecture, timing of new growth or dormancy, root length or depth, mycorrhizal root tips, fungal infection, and parasites or nematode cysts.

Installing clear, plastic tubes throughout the field provides growers with a way to **track changes to root systems** in response to:

- ✓ Fertilizer application
- ✓ Watering schedule
- ✓ Root die-back from disease
- ✓ Parasitic nematode attack, mycorrhizal inoculation



The CI-600 In-Situ Root Imager

Agricultural professionals use our CI-600 In-Situ Root Imager to:

- ✓ Take non-destructive, high-resolution digital images of roots systems underground
- ✓ Observe the development and function of a plant's root system over time
- ✓ Track establishment and rooting of new crops throughout the growing season
- ✓ Detect and diagnose plant pathogens and disorders before changes are visible above ground
- ✓ Time soil amendment applications with root flush



The CI-600 features:

- ✓ A scanner that provides high-resolution images up to 600 DPI
- ✓ Collapsible indexing handle for consistent, repeatable measurements
- ✓ Clear acrylic root tubes
 - ✓ 1-meter long
 - ✓ Last at least 10 years in soil
 - ✓ Fitted with water-tight tube plugs
- ✓ Handheld tablet computer
 - ✓ Live-updates as images are captured
 - ✓ Preloaded with operational and RootSnap! Image Analysis Software
 - ✓ Acts as power source for scanner



Application References

For a full list of CI-600 publications, visit www.cid-inc.com/publications

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