

## CI-600 and CI-690 Application and Technical FAQs:

1. Does the CI-600 give measurements of the root structure?  
The CI-600 only makes images of the roots. With CI-690 RootSnap!, the user can make measurements, such as root length, area, diameter, volume, branching angle.
2. How can the gap between root tube and soil be decreased?  
The best way is to begin with a hole that is the same diameter as the tube. CID Bio-Science recommends using the Earth Quake Auger to help make a hole for the root tube.
3. How can we get total root data when images from crops, like maize, wheat, and rice, from late growth stage with so many roots are used?  
It is probably not possible to measure the total root in the late growth stage. The best option is to estimate using the feature on RootSnap!
4. How does a user define an old root, live root and dead root?  
Root classification will be variable with the species. The expertise of the researcher is needed. Possibly the only way to know is to excavate some roots and dissect. This way, the researcher will know how the roots of his/her species appear when they are alive or dead. To know if a root is old, it is necessary to make repeated images with the CI-600.
5. What is the best angle or direct to install a root tube?  
There is no one answer for this question. Some studies indicate the optimal angle is 30°-45° from the horizontal {{1488 Johnson,M.G. 2001}}. The best way to decide for a given species is to do a study: place tubes at different directions, measure observable root length with the CI-600, excavate roots and compare, see {{1314 Villordon, A. 2011}} for an example.
6. How are the CI-600 and CI-690 used to measure root growth?  
The CI-600 is designed for measuring the growth and change of fine roots. Rate of growth is determined by imagine the root system frequently. With the CI-690, user can then determine growth rate.
7. Could a user set the CI-600 to 1200 DPI?  
There isn't really a good reason to measure at 1200 dpi. Scanning will be slow, image size will be large, and no extra detail is available. 300 dpi is more than sufficient.