

## Response of starfruit shoot and root to varying rooting volumes

### ABSTRACT

Shoot and root responses of root-pruned starfruit (*Averrhoa carambola*) seedlings in different rooting volumes, were studied using root observation chamber. Plant height and internode number were linearly correlated with rooting volumes over time, but stomata and epidermal cell number showed no response. Negative linear relationship was shown between the first-order root laterals and distant from root apex but root elongation had positive linear correlation with rooting volumes. Root length density, root surface area and total root length were significantly influenced by rooting volumes. However, there was no significant response on root tip density, coarse root length, percentage of dry matter distribution and root:shoot ratio. Leaf concentrations of N, P and Ca were significantly increased by rooting volumes but K and Mg were unaffected. A positive linear response between root elongation and plant height was observed.

**Keyword:** Shoot and root responses; Starfruit (*Averrhoa carambola* L.); Root observation chamber; First-order root laterals; Leaf nutrient concentrations