**A-107**

# LEAF INDOLEACETIC ACID TO ABSCISIC ACIDRATIO IS RELATED TO THE GROWTH OF 'HASS' AVOCADO ON DIFFERENT ROOTSTOCKS IN RESPONSE TO SALINITY

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'Hass' scions on commercially important 'Duke 7' or putative salt-tolerant 'VC 239' or 'VC 241' rootstocks were irrigated with isotonic (3 $dS \cdot m^{-1}$) solutions containing 2 to 16 $meq \cdot L^{-1}$ Cl. After 12 months, total biomass of 'Hass' on 'Duke 7' was lowest for trees with the greatest leaf Cl concentrations, whereas growth of 'Hass' on the VC rootstocks was unaffected by significantly greater leaf or root Cl concentrations. Thus, the growth response of 'Hass' scions to Cl was mediated by a fac-tor(s) within the rootstock. Leaf IAA:ABA ratio was a good predictor of growth in response to the accumulation of Na and Cl when trees were irrigated with isotonic solutions with different Na and Cl concentrations. Specific ion effects were contrasted with salinity, by irrigating 'Hass' trees on Mexican race 'Duke 7', 'Thomas' and 'Toro Canyon' or putative salt-tolerant 'VC 207' and 'VC 256' rootstocks with 2 to 8 $dS \cdot m^{-1}$ ($NaCl:CaCl_2$, 2:1 molar ratio). After 100 days, Na and Cl concentrations were greater in meristems and leaves, but not roots, of trees irrigated with 8 $dS \cdot m^{-1}$ compared to 6· $dS \cdot m^{-1}$. Cl concentration of the treatment solution was 3-fold higher than Na concentration, but Na ion toxicity appeared to be the major factor influencing tree growth. Meristem ($r = -0.53$, $P < 0.0001$) and leaf Na concentrations ($r = -0.37$, $P = 0.0048$) were negatively correlated with final shoot biomass. 'VC 207' had the lowest root and shoot Cl concentrations in addition to restricted transport of Na from root to shoot, making it a candidate for further evaluation. Final shoot biomass for trees irrigated with 8 $dS \cdot m^{-1}$ was positively correlated with mean leaf IAA:ABA ratio ($P = 0.01$) by rootstock cultivar. These preliminary results suggest that leaf IAA:ABA ratio might prove to be a useful predictor of salinity tolerance in *P. americana*.