

(P5-7) Effect of salt stress on plant growth and ion content on kiwifruit

MA. Forner-Giner, A. Primo-Capella, MR. Martínez-Cuenca, A. Quiñones

IVIA , Carretera Moncada-Naquera km. 5, 46113 Valencia, Spain

Salinity is one of the major abiotic stresses of crops, since it affects more than one-third of irrigated land in the world, limiting agricultural production. Salinity causes imbalances in ion homeostasis with increases in Cl^- and Na^+ concentration, and even in moderate concentrations may cause significant physiological changes in plants, such as reduction of growth and development, necrosis of leaves and shoots, defoliation, etc. Then, exposure to salt stunts plant growth and significantly reduces yield. We studied responses of *Actinidia deliciosa* (Chev) Liang and Ferguson cv Tomuri and cv Hayward, with two different salinity concentrations (0 and 40 mM NaCl), for 60 days, with six replicates per treatment and cultivar. Growth, ion content and gas exchange response to salt treatment were examined at the end of the experiment. Salinity impaired plant growth, with decreases in leaves, stem and roots of all the treated plants. All cultivars increased Cl and Na content in leaves and roots, but Tomuri accumulated less Cl and Na concentration in roots than Hayward. Leaf gas exchange parameters in salt treated plants were reduced to different extents, depending on the cultivar. The decreases in net CO_2 assimilation were more pronounced in Tomuri, but both cultivar showed similar decreases in transpiration rate.

Keywords: Salinity, chlorine concentration, sodium concentration, plant growth