

INITIAL ASSESSMENT OF HOW SALTWATER INTRUSION CAN AFFECT HORTICULTURE INDUSTRY

Xinyang Yu ^(1,2), *Junghun Song* ⁽²⁾, ***E.V. Campoverde*** ⁽³⁾ and *Young Her* ⁽¹⁾

¹UF/IFAS Tropical Research and Education Center, Homestead, FL USA

²Shandong Agricultural University, Shandong, China

³UF/IFAS Extension Miami-Dade County, Homestead, FL USA

The quality of irrigation water is an important aspect to horticultural production in more than 1,300 nurseries in south Florida. The Biscayne Aquifer, the east coast's primary source of fresh water for irrigation, is shallow and highly permeable, which makes the agriculture of south Florida more vulnerable to sea level rise and saltwater intrusion. High salinity levels on main irrigation systems can reduce the quality of horticultural crops, which will then decrease their market values. We investigated how the biomass and sizes of nursery specialty crops respond to the different levels of irrigation water salinity to provide information necessary to develop best management practices for monitoring and mitigating the impacts of saltwater intrusion on nursery crops. A pot-scale experiment was conducted with Hibiscus and Mandevilla and several salinity levels of irrigation water (0.5 dS/m as the control) at the Tropical Research and Education Center in Homestead, FL. From the experiment, we found that the biomass, widths, and heights of the crops were not statistically significantly affected by salinity if the levels of irrigation water salinity were less than 4 dS/m. However, the crop growth was quickly showing signs of withering and yellowing in the first week of watering, and the biomass and sizes of the crops were significantly reduced when the salinity levels was increased. Such findings suggest that the current salinity level (0.5 dS/m) of irrigation water might be safe for the crops, but extensive and continuous groundwater salinity monitoring should be implemented to mitigate the negative impacts of sea level rise and saltwater intrusion in south Florida.

PRESENTER BIO: Mrs. Campoverde is an UF/IFAS Extension agent empowering green industry professionals since 2011. She has more than 17 years of experience in leadership and agricultural projects involving research, teaching and Extension appointments in collaboration with research institutions, society organizations, academia and private industry.