
Irrigation and Fertilization Management for Grapefruit Cultivated Under Protective Screen

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Citrus under protective screen (CUPS) is a modern production system that excludes the Asian citrus psyllid and, therefore, the devastating disease citrus greening or huanglongbing (HLB) from citrus plants cultivated in screenhouses. This study investigated the effect of different irrigation management strategies on fruit yield, and the quality of grapefruit cultivated under a protective screen.

Additionally, we identified the best fertilization strategy by comparing granular fertilizer application and fertigation. We tested 'Ray Ruby' grapefruit grafted on US-

897 rootstock (*Citrus reticulata* × *Poncirus trifoliata*) in the irrigation trial and on Sour Orange in the fertilization trial, both planted Sept. 2013 at the UF/IFAS IRREC screenhouses located in Fort Pierce, FL. Treatments evaluated in the irrigation trial: two production systems (100×120×14 ft enclosed screenhouses and open-air plots with ¼-acre each), two planting systems (in-ground with Riviera sandy soil and potted in 10-gal plastic containers with peat moss: perlite substrate), and three irrigation scheduling methods (daily crop evapotranspiration

and soil moisture sensor-based irrigation using 33% and 50% of soil maximum allowed depletion). In the irrigation management strategies study, trees grown under screen were free of HLB, and in-ground trees produced significantly more fruit with higher quality. However, different irrigation management strategies did not influence fruit yield and the quality of grapefruit cultivated under screenhouses. In the fertilization method study, daily fertigation applied to in-ground trees inside the screenhouses resulted in the highest fruit yield.

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