

# Drip irrigation rates tested for eggplant growth and yield

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In the southeastern United States, eggplant is often produced with high levels of irrigation water and nitrogen fertilizer. Excessive irrigation rate not only wastes water and contributes to nitrogen leaching, and may also result in reduced crop yields. The authors of a report in the November 2015 issue of *HortScience* studied the effects of irrigation rates on eggplant, and say there is a potential to reduce current irrigation rates without negatively impacting fruit yield or quality.

"Eggplant is in the *Solanaceae* family, as are tomato and pepper, and shares similar environmental and cultural requirements as those crops," explained Juan Carlos Díaz-Pérez, lead author of the study. "However, in contrast to tomato and pepper, eggplant crop can tolerate greater levels of drought stress." Díaz-Pérez and Touria Eaton designed experiments with eggplant plants (cv. Santana) grown on raised beds covered with white plastic film mulch. A single drip tape was installed along the center of the beds. Plants were treated with five irrigation rates based on crop evapotranspiration (ETc): 33%, 67%, 100%, 133%, and 167% ETc. The researchers monitored plant growth, chlorophyll index, and volumetric soil [water](#) content over two seasons (2010 and 2011).

"Eggplant in our study was able to maintain high fruit yields at moderate levels of water stress, suggesting that, as tomato, eggplant is able to develop mechanisms to deal with water stress such as osmoregulation," the researchers said.

The experiments determined that plants irrigated at 67% ETc showed no

detrimental effects on plant growth and leaf gas exchange and produced fruit yields similar to those of plants irrigated at 100% ETc. "Thus, there is a potential to reduce current irrigation rates without negatively impacting fruit yields or quality," the scientists said.

**More information:** *ASHS HortScience*: [hortsci.ashspublications.org/content/50/11/1709.abstract](https://hortsci.ashspublications.org/content/50/11/1709.abstract)

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