

Title Calcium thiosulfate does not influence yield, postharvest quality, or calcium content of 'Sweet Charlie' strawberry

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### Abstract

Strawberries are a high-value crop with a short postharvest life. Florida is the major producer of fresh, winter strawberries in the United States with 2,874 hectares of production using the annual system. Supplemental calcium (Ca) is applied to various fruit crops to maintain or increase commodity quality. Many Florida strawberry growers apply supplemental Ca to their crop despite lack of conclusive evidence of an increase in berry quality or yield. The objectives of this study were to determine the effects of Ca supplied as calcium thiosulfate on yield, growth and postharvest quality when applied supplemental to a grower's standard fertilization regime and as sole source of Ca through fertigation. 'Sweet Charlie' strawberry transplants were grown at the University of Florida on Seffner fine sand at the Gulf Coast Research Education Center (GCREC) in Dover, FL, USA. Treatments consisted of the Florida strawberry grower's standard fertilization ( $\text{Ca}(\text{NO}_3)_2$ ) with and without calcium thiosulfate supplement, and no  $\text{Ca}(\text{NO}_3)_2$  with and without calcium thiosulfate supplement (randomized complete block design with four replications). Yield data were collected twice weekly throughout the growing season. Fruit calcium content was determined monthly in January, February and March. Postharvest quality evaluations of pH, total titratable acidity, soluble solids content, and firmness (Instron 4411) were determined in March. For all measured variables, no significant interaction occurred between fertilizer and Ca thiosulfate supplementation. Total cull fruit for November (early season) was significantly reduced in the calcium thiosulfate supplementation. All other variables were not significantly affected by calcium thiosulfate application or fertilization regime.