

**TCAA Extension & Research Planning Meeting
November 7, 2011**

**UF Partnership for Water, Agriculture & Community Sustainability at Hastings
Downtown Facility**

**Effect of Cultivar, Irrigation Method, Harvest Time, and Postharvest Storage
on Internal Bruising and Tuber Quality of Tablestock Potatoes (*Solanum tuberosum* L.)**

**Mildred Makani, Steven Sargent, Lincoln Zotarelli
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Substituting conventional seepage irrigation with drip irrigation was evaluated as a possible means of maximizing water and fertilizer use efficiency, while maintaining potato tuber quality. 'Fabula' and 'Red LaSoda' plants were grown in the spring 2011 season using surface drip, sub-surface drip, or seepage irrigation. Tubers were harvested at three different times, 1 to 3 weeks after vine kill (Harvest 1 to 3), and then stored for 14 days at 10°C and 90-95% relative humidity. Tubers were analyzed at harvest and subsequently every 7 days during storage for specific gravity, bruise susceptibility, moisture content, bio-yield force, vitamin C and potassium content. The results indicated that seepage irrigation had a slightly greater effect on susceptibility to bruising and some of the compositional qualities, depending on cultivar and harvest time. Freshly harvested, seepage-irrigated 'Fabula' tubers were more susceptible to bruising compared to the other irrigation methods. In storage, seepage irrigated Harvest 1 'Fabula' tubers maintained a significantly higher susceptibility to bruising. 'Red LaSoda' potatoes that were seepage irrigated had higher vitamin C contents from Harvests 1 and 2. Harvest time also affected vitamin C, with the highest content being observed in freshly dug Harvest 3 tubers in both cultivars. Generally, there was no difference in potato quality due to use of surface or buried drip irrigation.

In Spring 2012 we plan to repeat this studies, adding a commercial plot treatment.

**Operational Assistance & Educational Outreach Assistance needed from PWACS
personnel & County faculty:**

Lincoln Zotarelli is coordinating the production of the crops; he will outline needs related to this portion of these tests. Steve Sargent and Mildred Makani, doctoral student, are coordinating the harvest and postharvest studies. We may need some assistance at each of the three harvests in April.