

title	The Effects of Foliar Nutrient Applications on the Incidence of Rind Creasing and Puffing of Sweet Oranges ( <i>Citrus sinensis</i> )
lName	Garner
fName	Lauren
phone	756-2479
email	lgarner@calpoly.edu
additional	
department	Horticulture and Crop Science
proj_desc	Sweet oranges are consistently one of California's top agricultural commodities, with recent production values of more than \$500,000 per season. When fruit intended for fresh market are downgraded to processing fruit, the result is an average 10-fold reduction in packing house price. One factor leading to the downgrading of fruit is rind disorders, especially creasing and puffing, which are the result of the breakdown of the albedo (the white portion of Citrus peel). The physiological cause of these disorders is not fully understood, but more importantly for growers, a consistent method for preventing these disorders has not yet been developed. The horticultural use of foliar nutrient sprays provides a possible strategy for decreasing the incidence of creasing and puffing. Therefore, the objective of this project is to identify a foliar nutrient regime to prevent the development of creasing and puffing of navel oranges, thereby increasing profits and marketable yields for California growers. To do so, trees will be treated during early fruit development (prior to maximum peel thickness) with foliar applications of potassium, phosphorous or calcium, alone or in combination. A randomized complete block design (RCBD) with whole-tree experimental units will be utilized. This two-year experiment will be conducted in a commercial navel orange orchard with a documented history of creasing and puffing. The development of an appropriate protocol to prevent creasing and puffing by the use of foliar nutrient sprays could provide a significant economic advantage both to individual growers and the California citrus industry at large.
inter_desc	The problem addressed by this project is important to agriculture and agbusiness, in addition to addressing the fundamentals of plant physiology and development.
links	
students	2
majors	AG, BIO, CRSC, FRSC, STAT, AGB, BOT, SS, EHS
desired_res	Attention to detail; good record keeping skills; willingness to do off-campus field work; crops/fruit science and/or statistics background a plus, but not required.
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