

Evaluating the Impact of Transplanting Depth on Tomato Yield

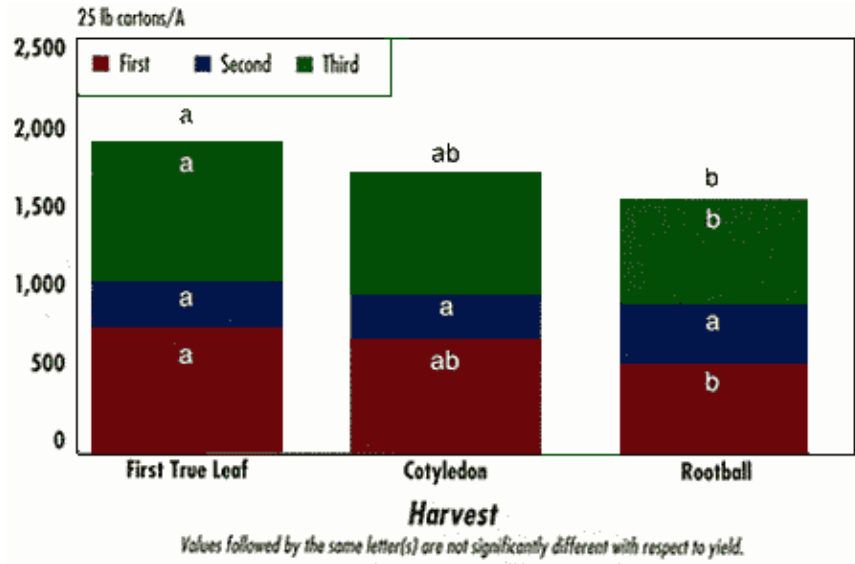
by
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Because of the statewide success by researchers in consistently increasing bell pepper yield by increasing transplant depth, the next logical step was to see if this phenomenon occurred in tomatoes. With the help of Phyllis Gilreath, Manatee County Extension and Steve Olson, North Florida Research and Education Center, the hypothesis was tested statewide. The studies were set out with Agriset in Immokalee and Manatee under seepage irrigation, and Colonial and Sunny in Quincy under drip irrigation. All crops were on polyethylene mulch in the spring of 1994.

Immokalee:

Tomato yield (mature green) increased as planting depth increased at first and third harvest, and in combined harvest total yield (Fig- 1). A 26 percent increase in 25 pound boxes of fruit was found at first harvest by planting transplants to the first true leaf, when compared to just covering the root ball. With all harvests combined, plants transplanted to the first true leaf showed an 18 percent increase in total yield. Transplants planted to the cotyledon leaf produced yields intermediate between the root ball and true leaf plantings.

Figure 1. Tomato planting depth yields of Agriset mature green fruit. Immokalee, Fall '93.

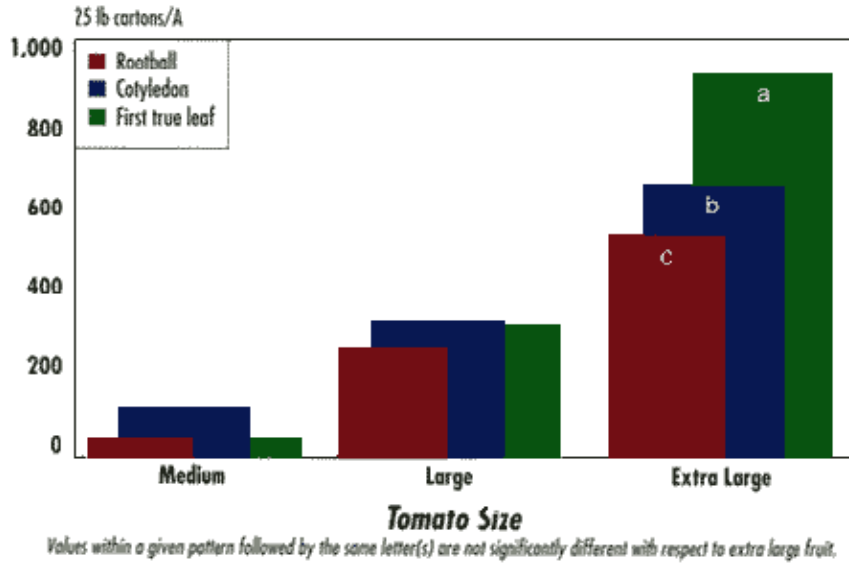


Quincy:

Extra-large fruit volume was increased at first harvest by deeper planting (Figure 2). Extra-large fruit volume was greatest for the deepest planting and was significantly less for the cotyledon and root ball plantings. The extra-large fruit response appeared to be a first harvest phenomenon as the other treatments "caught up" after four harvests. Sunny did not show the same response as Agriset and

Colonial, implying different cultivars may respond differently to planting depth. This aspect is undergoing further examination.

Figure 2. Effect of planting depth of early yield size distribution of Colonial tomatoes. NFREC, Quincy 1994.



The investigation into tomato planting depth continues this fall with trials in Manatee, Collier and Dade counties. While trial conclusions were not identical at every site, they were similar enough to suggest that planting tomato transplants to the first true leaf will result in larger fruit yields and more extra-large fruit especially at first harvest.