Vegetable Transplant Production
Watermelon Transplant Depth: Can It Make a Difference?

by
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Research from North Carolina in the late 1960s indicated larger yields in once-over-harvest cabbage can be obtained with deeper transplants. So might deeper planting of watermelon transplants prove beneficial for Florida growers? To answer that question, studies were conducted over three spring watermelon crops to assess transplant depth effects on yield.

Due to variability (legginess) within the transplants from year to year, researchers used the physical positions of the top of the root ball and the cotyledon (seed leaves) as depth markers.

In only one of the three years studied did deeper planted watermelon transplants result in a significant yield difference - and then only at first harvest ($p=0.07$). Visitors to the spring 1993 SWFREC vegetable field day will attest to the added vigor and greatly increased size displayed by the deeper planted plants. However, dramatic yield differences were not apparent.

As with pepper transplants, deeper planting of watermelon "tends" to advance plant maturity, resulting in greater early yields, with no apparent effect on total yield. No differences in individual fruit weight were noted in any year; therefore, the increased yield resulted in more fruit.

Deeper plantings seem to reduce the stress exerted by wind on young plants. This factor may explain the increased growth in vine and foliage noted in the field. More vigorous growth in the first 30 days or so also may be an advantage in combating early disease.

Although all of the 1993 plants went through the "storm of the century" with few losses, the deeper plantings seemed to recover more rapidly.

This transplant depth work has not received the broad geographical testing that the pepper study did. Although the data are not convincingly strong to warrant wholesale conversion to deeper planting, watermelon growers statewide are encouraged to try a block of cotyledon depth planting.

Commercial transplant growers generally do a good job of keeping plants short and stocky. However, if your plants prove to be leggier than you would like, do not hesitate to plant them deeper. Studies so far have not tested even deeper plantings (first true leaf or greater) but will this season.

Table 1. The effect of watermelon planting depth on yield in CWT/A*		
Treatment	First Harvest	Total Harvest
* Values followed by the same letter are not significantly different by LSD=10%. ** Losses to gummy stem blight resulted in only one harvest.		
Spring 1990	175a	832a
Deep Standard	162a	726a
Spring 1991	300a	---**
Deep Standard	293a	---
Spring 1993	169a	296a
Deep Standard	135b	315a