

# Fig Cutting Media Study

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A study was performed to address some shortcomings found in the propagating methods used during an earlier fig rooting experiment [A]. While the process to produce root emergence had successful results, many cuttings were lost during later stages of cutting development. These losses were attributed to the small volume of media used during post-emergent root development and damage imparted to the roots during later transplanting to 1 gallon nursery pots. In an attempt to improve these later stages, a sample of cuttings was studied during the post-emergent phase using a larger media volume and two alternative media. Observations of root development and top-growth were made after a period of 30 days.

## ***Increased Media Volume and Alternative Media:***

During the earlier experiment, "rooting containers" were made from 0.5L plastic water bottles with the tops removed and drain holes made in the bottoms. After roots were present, the cuttings were transferred to the bottles in a rooting media consisting of 1:1 vermiculite and perlite (V/P). The effective rooting volume in these containers was 12 ounces. For this study, 24 ounce cups were used offering a doubling of the available rooting volume. The additional rooting volume allows for increased root development before the need to transplant to larger containers. The hardier root system should result in less damage or shock to the cutting during the transplanting step and improve overall success rate.

Half of the cuttings were placed in V/P as in the earlier experiment while the other half was placed into "soil" mix. Using soil mix is intended to provide nutrient availability during the early root development stage as well as eliminate any effects resulting from non-homogeneous media post transplanting to nursery pots.

## **METHODS:**

- a) All cuttings were California Brown Turkey and rooted using the "baggie-method"
- b) After roots emerged, they were transferred into rooting media in 24oz cups
- c) The media was either equal parts vermiculite and perlite ("V/P") or equal parts pine bark mulch, turface, perlite and sphagnum peat moss ("soil")
- d) A total of 10 cuttings were used in the experiment (5 in V/P and 5 in soil)
- e) Cuttings were kept at 75F and humidity 60-80RH
- f) Cuttings were watered according to the moisture requirements of the media (moisture retention of soil is higher so less frequent watering is required)

## **RESULTS:**

- 1) Root development and root branching were similar between V/P and soil showing no advantage between the media types
- 2) Measurements of top-growth were made prior to transplanting showing no significant differences between the media types 30 days after they first produced roots

- 3) Root rot was not a factor when media moisture and watering are properly controlled (frequency of watering is different between the 2 media)
  - 4) If the cutting was producing top-growth at a good rate before potting-up, those in the soil continued this growth rate and were not retarded by the transplanting step when using soil (this is attributed to reduced root disturbance when using soil)
  - 5) The cuttings in V/P experienced a period of retarded growth following transplanting (this is attributed to disturbance of the roots and the integrity of the root/media ball)
  - 6) Overall measured top-growth characteristics were only negligibly different and not significant resulting in the conclusion that equivalent results can be obtained by either method
- Top-growth and branching: Both V/P and Soil cuttings averaged 1.2 branches and 5 leaves after 30 days.
  - Branch thickness: The Soil cuttings produced slightly thicker and longer branches (0.2 in. diameter and 3.4 in. length) than the V/P cuttings (0.18 in. diameter and 2.8 in. length). However, this is attributed to the thickness of the starting wood as found in the earlier fig rooting experiment. The Soil cuttings averaged 0.56 in. diameter and the V/P cuttings averaged 0.39 in. diameter.
  - Greatest leaf size: The Soil cuttings had an average largest leaf size of 2.8 in. length and 2.6 in. width while the V/P cuttings had an average largest leaf size of 2.8 in. length and 2.7 in. width.

## DISCUSSION:

Minimizing root disturbance and damage during potting-up is essential for ultimate success of the cutting and amount of early top-growth. Damage during this process will set-back the cutting and retard growth for a period of time, in some cases it will result in cutting failure. Potting-up is easier with those that were in soil because the entire root ball and media hold together better when removing from the cups leading to less disturbance of the roots. The larger rooting media volume also improved the ease of transplanting by aiding in maintaining the integrity of the root ball (more extensive roots). Satisfactory results can be obtained by both of the studied methods provided adjustments are made for the moisture retention of the media. Preference for one media or another should be based upon other factors related to the methods used (for example, lower occurrence of damage imparted by transplanting or watering requirements).

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[A] Miller, S. J. ***Fig Rooting Experiment***. March 2009. Self published.