

## Further Progress in the Rooting of Fuerte Avocado Cuttings

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Fifteen to twenty leafy-twig tip cuttings of the Fuerte variety were collected at weekly intervals from October, 1936, until August, 1937. No success was had with the early collections, even though certain chemical substances were employed.

On December 10, 1936, a Fuerte leafy-twig cutting was whip or tongue grafted<sup>1</sup> as the scion on a short piece of root of a young Mexicola avocado seedling tree as the stock. One end of the scion was separated from and protruded beyond the stock piece. Roots formed at the base of the scion from which the stock was then disconnected. The rooted cutting was hardened in the rooting chamber and on March 2, 1937, it was placed in a culture solution containing aluminum at first and later phosphate. Figure 1 shows the condition of this cutting on August 3, 1937.

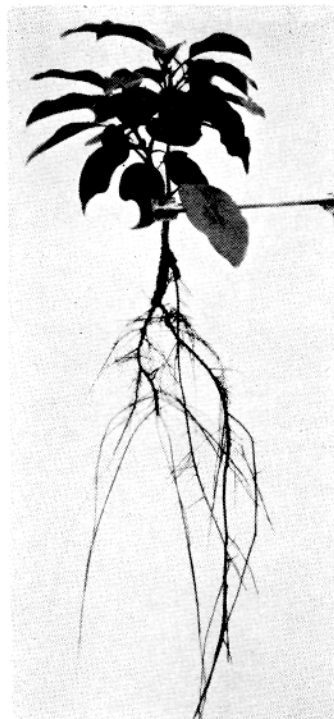


Fig. 1. Fuerte avocado leafy-twig cutting grown in culture solution after being rooted in the propagation chamber. (Length of clamp holding the cutting = 8 inches.)

Fuerte avocado leafy-twig cuttings were readily rooted when collected late in December, 1936, and in the early months of 1937. The tip halves of the leaves were cut off, and the cuttings were protected with cheesecloth over the glass sash of the rooting chambers.

When the callus formation at the cut end was pronounced, a complete culture solution<sup>2</sup> made with tap water was sprinkled over the cuttings in the sand about once a week, while at other times tap water alone was used.

### **ROOTED CUTTINGS REMOVED**

The callus of the cuttings was examined from time to time to note the presence of roots. The cuttings found with roots were transferred to separate compartments in the propagation frame. These rooted cuttings were sprinkled with tap water and every few days with tap water containing nutrient. A few weeks were allowed for the cuttings to become established. The hardening process was then carried on gradually by raising the sash a half inch or more every few days. Once the sash are removed, the cuttings can be moved to a nursery row and for a time may require protection from excessive light or heat.



Fig. 2. Rooted Fuerte avocado leafy-twig cuttings in propagation chamber. The cuttings are hardened and ready for transplanting to the nursery.

Figure 2 shows rooted Fuerte avocado cuttings in the sand of the propagation chamber on August 3, 1937.

When Plasterer's cutting sand or river sand in a propagation chamber is sprinkled with tap water several times daily, much of the nutrient in the sand is washed away in the

drainage water. The use of occasional nutrient applications to the cuttings has been of marked benefit in securing the rooting and establishment of Fuerte avocado cuttings without the use of hormones or auxins. The time of collection of the material used for cuttings and the nutrient treatment of the cuttings in the propagation chamber are important factors. Otherwise the cuttings may not do more than produce callus without root formation and if rooting does take place, the lack of plant food may cause the gradual destruction of the cuttings. Avocado plants are known to require large amounts of plant food for their best development.

### **Literature Cited**

- <sup>1</sup>Haas, A. R. C. Propagation of the Fuerte Avocado by Means of Leafy Twig Cuttings. California Avocado Assoc. Yearbook 1937.
- <sup>2</sup>Haas, A. R. C. Growth of the Avocado Tree in Solution Culture. California Avocado Assn. Yearbook 1936: 66-69.