

AVOCADO TIP-GRAFTING

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There are many methods of budding and grafting in use today and tip-grafting is just one method that adapts itself quite well to avocado propagation. Tip-grafting is nothing new to most propagators so I will not get involved in minute details unless someone wishes to know something specific.

We grow avocado seed in clean soil, in pots on benches. By doing this we avoid most of the fungi problems and have a minimum of trouble. Cleanliness is very important as the seed are forced under high heat and humidity. We prefer to harvest the fruit before it drops so the seed does not become contaminated on the ground.

Tip-grafting of avocados was first done commercially by Walter Beck of Fallbrook, Calif. around 1946-48. Shortly thereafter, many growers and nurserymen, including myself, adopted the method. It is a guess that 75% or more of all commercial avocado trees grown today are tip-grafted by the method I will describe.

In our own nursery in Corona, Calif. we generally use the same methods as other nurserymen except that we grow the first stage of the seedling in a very small pot to save cost. The older method was to grow them in a large container (mainly heavy tarpaper) from the beginning. This was very expensive particularly when the percentage of graft takes was very poor.

Most of the seed used is of the Mexican strain. The most used varieties are TopaTopa, Duke and some selected seedlings. Seed is harvested in mid-October thru November and immediately planted. It is forced in a hothouse at around 80° F. with very high humidity. When the seedling is from 15 to 18 inches in height it is ready to tip-graft. This is usually done around February to March, approximately 4 months after planting the seed. After the scion bud grows 6 to 8 inches in height, the tree is repotted into a larger container, grown through the rest of the year and planted out the following spring (around March). This means that a tree is planted in the field approximately 16 months from seed. Some growers plant the trees in the field 8 months after seed planting (in July and August) but the tree is rather small and more difficult to care for.

As to some specifics of our method of avocado tip-grafting, our planting medium is a blow sand which is prevalent in the western end of San Bernardino County. It is light but has about 25% clay in it which gives it an ability to retain moisture. We are using it straight as this is cheaper, but we are also trying it combined with peat moss. The soil is fumigated with methyl bromide well ahead of its use then placed in small,

lightweight, tarpaper containers 2¼" x 2¼" x 8". These are placed side by side in old lemon storage boxes. The seed is planted in the soil and then covered with peat moss to keep them moist for sprouting.

When the seedlings are 15" to 18" high they are separated, tip-grafted and then placed back into boxes. The tarpaper pots give us some trouble as they break down readily and the roots grow through them; we are now experimenting with some plastic pots that could be stapled together and then re-used.

The trees are tip-grafted from 6" to 10" above the seed by making a long sloping cut on the seedling with a sharp knife and then selecting scion wood of approximately the same size and making a corresponding cut on it, leaving 1 to 2 buds. This scion piece is usually from 1½" to 2" in length. The cut surfaces are bound together firmly with budding tape or budding rubber. The top of the scion is treated with Tre-Seal to prevent loss of moisture.

The grafted trees are kept under high humidity and subdued light until the buds break and start growing. The tape is removed when the graft is healed; this is approximately 3 to 4 weeks after growth has started and is 6 inches long, or longer. Constant suckering of the seedling and scion is necessary.

Up to this point, very little cost has gone into the care and growing as little space has been taken and little material used. Now repotting is done and the trees are shifted into larger containers. For the larger container we are using pressed paper pots that can be buried when planting so that there is no disturbance to the roots. We are still experimenting with other containers. The paper containers are good but they tend to rot out on the bottom before they are ready for planting; however, they are still quite satisfactory.

MODERATOR TEAGUE: I would now like to introduce Mr. E. F. Frolich, who is well known to all plant propagators in southern California. He is with the Department of Agricultural Sciences — Plant Nutrition — University of California, Los Angeles. He will discuss both citrus and avocado propagation. Ted —

ROOTING CITRUS AND AVOCADO CUTTINGS

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Many varieties of citrus will make satisfactory trees on their own roots (1). Nurserymen have grown Meyer lemon and Rangpur lime as rooted cuttings for many years. There are own-rooted trees of Navel and Valencia orange, Eureka and Lisbon lemon, Dancy tangerine, Bearss lime, and Marsh