

AVOCADO STUMP REGROWTH CONTROL

B. W. Lee

Ventura County Farm Advisor

To maximize production for greater income during the development period, avocado trees are frequently planted closer together than the ultimate desired spacing. With close planting a problem of overcrowding eventually develops which requires trees to be thinned.

To thin crowded avocado orchards, selected trees are often merely cut off at the ground level. In a short time sprouts develop (fig. 1). If not controlled, they become a nuisance for the grower and perpetuate the overcrowding problem if allowed to continue to grow.



Figure 1—Root shoots or sucker growth of avocado stump six months after cutting off tree.

Growers often find avocado stumps difficult to kill. A common practice in Ventura County is to apply nitrogen fertilizer, weed oil, or brush killer to the fresh-cut stumps. The first two materials, at best, kill only a small percent of the stumps treated, and brush killers containing 2,4,5-T and 2,4-D should not be used in avocado orchards since they are volatile and the fumes may damage or even kill nearby trees.

In an effort to find better materials for regrowth control, a field trial was initiated to test several readily available chemicals and methods of application. A crowded 10-year-old Hass-Rincon orchard was made available by the Limoneira Company of Santa Paula. The inter-planted Rincon trees were sawed off near the soil level and treatments applied

the following day. Six treatments with six single tree applications were made. Stump size ranged from 8 to 12 inches in diameter.

The treatments and costs per tree were as follows:

<i>Treatment</i>	<i>Material</i>	<i>Material Costs/Tree</i>
1	Vapam*	3.4 cents
3	Ammate X** Cut	28.0 "
4	Ammate X Spray	8.0 "
5	Urea	5.0 "
6	Ammate X Frill	1.7 "
2	Untreated	—

*Vapam—sodium methyl dithio-carbonate—32.7%
 **Ammate X—ammonium sulfamate—98.0%

DESCRIPTION OF MATERIALS AND APPLICATIONS

Vapam—A soil fumigant used at the rate of 32 ounces per 5 gallons of water. Twenty-two ounces of solution were poured over each stump.

Ammate X Cut—One pound of Amimate X, an herbicide, was spread evenly over the entire cut surface of the stump.

Ammate X Spray—A solution of 8 pounds per 2 gallons of water was sprayed on stumps at the rate of 9 ounces each.

Urea—One pound of urea was applied to each stump.

Ammate X Frill—One ounce was applied to stump of a V-cut frill made with a hatchet (fig. 2).

Untreated

Stumps were inspected each month and evaluated for control of stump growth. The results, after 14 months, were as follows:

<i>Treatment</i>	<i>No. Stumps Sprouted</i>	<i>Degree of Regrowth*</i>	<i>Rating</i>
Ammate X Frill	3	6	1
Vapam	3	7	2
Ammate X Spray	4	6	3
Ammate X Cut	5	8	4
Urea	5	10	5
Untreated	6	17	6

*Degree of regrowth is a total value arrived at by giving length of root shoot or sucker a numerical value based on height; i.e., 1 = sucker less than 1 foot, 2 = sucker 1 to 3 feet, 3 = sucker over 3 feet.



Figure 2—Ammate X crystals applied to avocado stump in V-cut frill made with hatchet. Cuts must be made into the wood and continuous around the stump.

Although results were not as conclusive as desired, the field trial demonstrated that Vapam and Ammate X were the most effective in controlling avocado stump regrowth and that Ammate X applied in a frill is more effective than either the cut or spray treatment. Urea applied to the stump was relatively ineffective. All untreated stumps grew, indicating some treatment is required to inhibit regrowth. Both the Vapam drench and the Ammate X frill treatments could serve as a replacement for ineffective materials and 2,4-D and 2,4,5-T compounds which are hazardous to use in avocado orchards. Ammate X at the 1-ounce rate is the least expensive.

Further tests are planned using a greater amount of Vapam solution to more thoroughly saturate the stump and 4 to 8 ounces of Ammate X in the frill of each stump.