

## ROOT ROT RESISTANCE FIELD PLOTS

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Ever since it was established that avocado root rot is caused by a soil fungus, one of the principal approaches to control has been the search for a resistant rootstock. Our studies have included large scale tests of different seedlings and cuttings in the greenhouse, and also field tests which were first established in 1955.

Over the past 10 years we have found several rootstocks that show at least a moderate degree of resistance to Phytophthora root rot. These have included primarily Duke seedling selections, plus several other Mexican types. Many field plots were established, but until recently they involved relatively small numbers of trees on each of the test rootstocks,

During the past two years it has been possible to expand the field plantings greatly, with the help of more industry and university support on this phase of the project, and with the use of more efficient methods for producing large numbers of cuttings (1). The propagation of these cuttings and also of some seedling stocks for field plots has been carried out primarily in the greenhouses at UCLA during the past three years. This report deals with the field plots established, using these materials, in various parts of southern California.

Locations for field plots were established by contacting many interested growers and plot plans were made for each planting in the various counties: in Riverside, San Diego, Santa Barbara, and Ventura counties.

Plots to date have all been established in areas where avocado trees have been removed because of root rot. On most plots a small area around the new tree site was fumigated by the grower, using our recommendations for fumigants (2). This was to enable the young trees to get a good start before the root rot fungus reinvaded the area. On all plots, some type of tree susceptible to the disease was planted along with the test stocks, in order to be able to compare relative resistance. In some cases commercial trees were used; in others we used Topa-Topa seedlings.

The first plantings in this expanded field program were started in the fall of 1969. More trees were planted in 1970, and many more in 1971.

The accompanying tables show the numbers of plots and types of rootstocks used. By way of brief summary, the following trees have been planted:

NUMBER OF TREES PLANTED

<i>County</i>	<i>1969</i>	<i>1970</i>	<i>1971</i>
San Diego	90 (1)*	171 (7)*	1020 (20)*
Riverside		38 (1)	
Ventura		157 (3)	100 (1)
Santa Barbara	132 (4)	304 (4)	156 (3)

\*Number of plots

TABLE 1

<i>County</i>	<i>Total Trees Planted and Type</i>	
	<i>1970</i>	<i>1971</i>
San Diego	171 Duke 6 Fuerte/Duke 6 Hass/Duke 6	1020 Duke 6 Duke 7 Duke Parent Duke S G22 Scott Topa Topa Fuerte/Duke 6 Hass/Duke 6 Zutano/Duke 6 Fuerte/Duke Parent Hass/Duke Parent Hass/G22
Riverside	38 Duke 6 Duke 7 G22 Bacon/Duke 6	
Ventura	157 Duke 6 Duke 7 Duke Parent Duke S G22 Scott Topa Topa Hass/Duke	100 Duke 6 Duke 7 Grace Topa Topa Hass/Duke 6 Hass/Duke Parent
Santa Barbara	308 Duke 6 Duke 7 Duke Parent Duke S G22 Scott Topa Topa Hass/Duke 6 Fuerte/Duke 6	156 Duke 6 Duke 7 Duke S Scott G22 Hass/Duke 6 Hass/Duke 7

We will be planting out more test trees during 1972. As new resistant types become available, either from our expanded collecting program or from selections of possible

resistant trees in California, we plan to root cuttings or grow seedlings from these materials and test these in greenhouse and field. The program has been retarded somewhat recently by University budget cuts, but additional funds from the industry this year have aided greatly.

We appreciate very much the cooperation of the many growers involved, as well as the financial contributions from the California avocado industry.

#### **LITERATURE CITED**

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