

ROOT ROT RESISTANCE FIELD PLOTS

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The fact established that avocado root rot is caused by a soil fungus, we have continued our search for a resistant rootstock as a method of control of the disease. This search includes many plants in large scale field tests, and thousands of seedlings and cuttings in tests conducted in the greenhouse.

During the past three years we have found several rootstocks that show a greater degree of resistance to *Phytophthora* root rot than the usual Mexican rootstocks commonly used. These include a collection from Guatemala and another from California, which have been added to selections of Duke and other types which show at least moderate degrees of resistance. These new selections are now being included in field trials.

Over the past five years it has been possible to expand the field trials greatly, with the help of more industry support on this phase of the project, and with the use of more efficient methods for producing large numbers of cuttings. The propagation of these cuttings for field trials has been carried out primarily in the greenhouses at UCLA. 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 Los Angeles, Orange, Riverside, San Diego, Santa Barbara, Tulare, 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 (1). 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 these expanded field trials were started in the fall of 1969. More trees were planted in 1970, and in the four years since then we have been planting an average of 1,000 trees per year.

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

County	<i>Number of Trees Planted</i>		
	1972	1973	1974
San Diego	477 (14)*	536 (13)*	477 (15)*
Santa Barbara	234 (4)	620 (11)	234 (8)
Ventura		40 (2)	
Riverside	47 (1)	8 (1)	12 (1)
Los Angeles	70 (1)		6 (1)
Orange	80 (1)		100 (1)
Tulare			40 (1)
*Number of plots			

We will continue field trials of experimental rootstocks during 1975. As new resistant types become available, either from our 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.

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

TABLE 1

County	Total Trees Planted and Type		
	1972	1973	1974
San Diego	477	536	477
	Duke 6	Duke 6	Duke 6
	Bacon/Duke 6	Fuerte/Duke 6	Bacon/Duke 6
	Fuerte/Duke 6	Hass/Duke 6	Fuerte/Duke 6
	Hass/Duke 6	Zutano/Duke 6	Hass/Duke 6
	Zutano/Duke 6	Duke 7	Duke 7
	Duke 7	Bacon/Duke 7	Fuerte/Duke 7
	Bacon/Duke 7	Fuerte/Duke 7	Hass/Duke 7
	Fuerte/Duke 7	Hass/Duke 7	G-22
	Hass/Duke 7	Zutano/Duke 7	Hass/G-22
	G-22	G-22	Zutano/G-22
	Fuerte/G-22	Fuerte/G-22	Huntalas
	Hass/G-22	Zutano/G-22	Hass/Huntalas
	Grace	Grace	Reed/Huntalas
		Huntalas	Fuerte/Huntalas
		M21-71	G6
			G6S

Santa Barbara	234	Duke 6 Hass/Duke 6 Duke 7 Hass/Duke 7 G-22 Duke SB14-9	620	Duke 6 Hass/Duke 6 Duke 7 G-22 Hass/G-22 Grace Scott Huntalas M21-71 Tacambaro	234	Hass/Duke 6 Duke 7 Hass/Duke 7 G-22 Hass/G-22 Hass/Huntalas Grace G6 G6S Gvaram M21-71
Ventura			40	Duke 7 G-22		
Riverside	47	Duke 6 Bacon/Duke 6 Zutano/Duke 6 Duke 7 Bacon/Duke 7 Zutano/Duke 7 Zutano/Grace	8	Duke 7	12	Bacon/G-22 Zutano/G-22
Los Angeles	70	Duke 6 Hass/Duke 6 Duke SB14-9			6	Hass/Huntalas
Orange	80	Duke 6 Duke 7 G-22 Grace			6	Hass/Huntalas
Tulare					40	Duke 6 Duke 7 Bacon/Duke 7

LITERATURE CITED

1. ZENTMYER, G. A., A. O. PAULUS, and R. M. BURNS. 1967. Avocado Root Rot. California Agricultural Experiment Station. Circular 511, 16 pp.