

REVIEW OF AVOCADO ROOT ROT IN ISRAEL AND STRATEGIES TO MANAGE THE DISEASE

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Avocado root rot caused by the fungus *Phytophthora cinnamomi* Rands causes the death of avocado trees (*Persea americana* Mill.) and is a major economic problem for the commercial cultivation of the avocado worldwide. The fungus was first isolated in Israel in autumn 1982 in a small number of orchards and in imported ornamentals. Drastic and immediate measures were adopted to stop the spread of the disease in Israel. The late Dr. Pinkus and his associates conducted a comprehensive nursery survey. All infected avocado plants in the nurseries were destroyed following the survey. A policy was also put into place to destroy any orchards where infected trees were found. This policy slowed the spread of the fungus in Israel. During 16 years of research the focus was directed mostly on the development of resistant rootstocks to the fungus (horticultural selection and testing of resistant rootstocks). Additionally, steps were taken to stop the spread of the disease to other orchards and methods for rehabilitating infected mature groves, including the evaluation of chemical eradication formulations, were studied.

Seventeen rootstocks resistant to the disease were selected, originating from 3 genetically diverse sources. The first group arose from Israeli rootstocks known for their superior production (Dr. A. Ben Ya'acov's selection program). This group includes the VC28, VC49, VC55, VC66, and VC69 rootstocks. Rootstocks were also selected from Dr. Ben Ya'acov's germplasm collection. These are VC207, VC218, VC225, VC239, VC241 and VC256. The final group of resistant rootstocks arose from "survivor" trees in the infested orchard of Giv'at Chaim and include VC801, VC803, VC804, VC811, and VC812. These rootstocks are being tested in commercial orchards in Israel. Additionally, these materials have been sent to South Africa and California for evaluation in those production areas.

In producing orchards where infection has been detected, certain actions need to be taken in order to a) stop the spread of the disease from the affected orchard to neighboring groves; and b) chemically treat the infected trees. The efficacy of two materials were tested, "Foli-O-Fos 400" and "Kanon 50". In trials conducted with nursery plants and a bio-assay test, both materials were found to be equally effective.