Citrus Virus Diseases in Poros (Greece)

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This report summarizes the results of experiments conducted at the Poros Arboriculture Station, Peloponnesos, Greece, since 1971, on Station mother trees and gives additional information about the occurrence of certain virus diseases in other parts of the country.

The Station is not purely a research institution, but is mainly a center for propagation and distribution of citrus trees. Consequently, the results reported herein, though not conclusive, provide some insight into the phytosanitary condition of citrus trees on a broad scale.

Experimental material included old local citrus varieties and imported selections. Procedures for virus identification involved: (1) use of indicator seedling plants in the greenhouse, screenhouse and in nurseries for detection of psorosis, crinkly leaf, exocortis, cristacortis, and leaf variegation; and (2) examination of field trees for visual symptoms of cachexia, gummy bark of sweet orange, and impietratura.

VIRUSES

Exocortis. Exocortis is the most widespread virus at the Station. Approximately 150 trees belonging to old clones of sweet orange, lemon, and Clementine were indexed and all found infected. Furthermore, 25 per cent of the common Mediterranean mandarin trees were infected. Exocortis causes severe damage in citron trees on the island of Crete.

Psorosis diseases. Trees of local mandarin, sweet orange, and lemon varieties were found to be about 40 per cent infected, on the average, and those of navel varieties (Navelina, etc.) almost 100 per cent, as shown by observations of oak-leaf patterns and vein flecking on indicator plants.

Concave gum, often associated with blind pocket, is the most frequently encountered disease in mandarin and sweet orange in Poros as well as in other parts of Greece (Crete, Arta, Nafplion and Rhodes). Trunk symptoms of Psorosis A were found in a few sweet orange and grapefruit trees in Poros and in some parts of Crete.

Crinkly leaf. Crinkly leaf was detected in Poros on two lemon trees, variety Carystinie, in combination with infectious variegation. The extent of its occurrence is not known.

Cachexia - xyloporosis. Cachexia was found on Mediterranean mandarin and Satsuma in Poros and Nafplion, but the extent of its occurrence is not precisely known.

Impietratura. Of the navel and Valencia selections examined at the Station, 6 and 4 per cent, respectively, were infected. Trees of mandarin, lemon, and grapefruit varieties did not show any symptoms.

Gummy bark of sweet orange. Preliminary observations indicated that this disease does not seriously affect citrus trees in Greece. Gummy bark was, however, found on some sweet orange trees, varieties Shamouti and Lainati, in Poros and Crete (Keramidas, 1972).

Cristacortis. Field observations on 3,500 trees at the Poros Station gave the following percentages of incidence: for sweet oranges, Moro (68), Jaffa and Tarocco (16), local blood oranges (3); for Clementine (6.5); and for various local varieties of lemon (1.5). Most of the symptoms (stem pitting) are restricted to the sour orange rootstock, but they can also be found on the scion. Indexing is in progress.

Leaf variegation - ring spot. This disease was found recently on a single Navelina sweet orange tree at the Station. Both leaves and fruits of the same branch showed symptoms. The tree is also infected with concave gum, exocortis, and cristacortis viruses.

Seedlings of sweet orange, Rangpur lime, grapefruit, common and Cleopatra mandarins, sour orange, Troyer citrange, Carystinie lemon, and Mexican lime were inoculated in the greenhouse. All developed severe symptoms of the disease.

DISCUSSION

Psorosis diseases constitute the major hazard for citrus orchards all over Greece, for the bulk of the citrus population belongs to old varieties of sweet orange, lemon, and mandarin. The existence of more than one virus in many trees, resulting from repeated grafting, makes the problem more complex.

The occurrence of tristeza virus was not confirmed, after indexing 100 trees of various species, at Poros Station. However, because sour orange is extensively used as a rootstock, the importance of tristeza as a potential hazard to citrus orchards in Greece can not be overestimated.

LITERATURE CITED

KERAMIDAS, C. Z.
1972. Observations on citrus virus diseases in Greece. Poros Arboriculture Station, Greece.