

Mycoplasmalike Bodies Associated with Likubin-Diseased Ponkan Citrus

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ABSTRACT

Mycoplasmalike bodies were found in the sieve tubes of leaves from Likubin-diseased Ponkan citrus. Most bodies were spherical, oval, or filamentous. The bodies contained an electron-dense ground substance, and were surrounded by double membranes. *Phytopathology* 61:598.

In an earlier paper (1), we pointed out that citrus plants used in investigations on the Likubin disease should be protected from tristeza virus infection, because tristeza virus particles were observed frequently in the phloem tissue cells of Likubin-diseased *Citrus reticulata* Blanco 'Ponkan' or *C. tankan* Hayata 'Tankan'. H. J. Su & T. Matsumoto (*unpublished data*) recently pointed out the similarity of the Likubin disease to the citrus greening disease in South Africa and the citrus leaf mottling disease in The Philippines. The citrus greening disease also resembles the stubborn disease found in California. Su (*personal communication*) and T. T. Lo (*personal communication*) have observed mycoplasmalike bodies in ultrathin sections of Likubin-diseased citrus plants. We have also detected mycoplasmalike bodies in ultrathin sections

of Likubin-diseased Ponkan, and wish to confirm their findings.

Young seedlings of healthy Ponkan citrus were bud-inoculated with Likubin-diseased Ponkan. About 2.5 months after bud inoculation, young leaves showing irregular vein-chlorosis (Fig. 1) were obtained. Veinlets of diseased and healthy leaves were compared by thin-sectioning as described previously (1).

Pleomorphic bodies were found in some of the sieve tubes in Likubin-diseased leaves (Fig. 2). Some bodies were spherical or oval; others, filamentous. The bodies contained an electron-dense ground substance with ribosomelike particles, and were surrounded by double membranes. In addition to the pleomorphic bodies shown in Fig. 2, spherical or oval bodies containing light central areas were also found, though they were few. The pleomorphic bodies observed in this study are similar to the mycoplasmalike bodies observed in greening-, stubborn-, and decline-diseased citrus plants (2, 3, 4).

LITERATURE CITED

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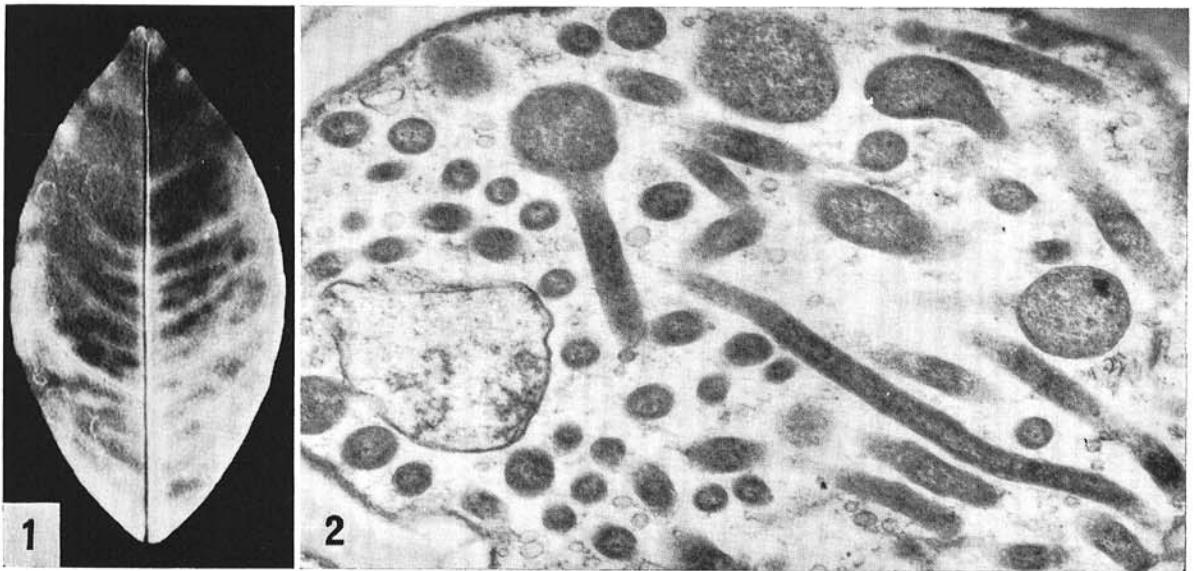


Fig. 1-2. 1) Leaf of Likubin-diseased *Citrus reticulata* 'Ponkan' showing irregular vein-chlorosis. 2) Mycoplasmalike bodies in a sieve tube of a Likubin-diseased Ponkan citrus leaf. ($\times 22,000$)