

*Citrus Virus Diseases in the Region of Fondi, Italy*

**T**HE REGION OF FONDI (Province of Latina) is largely cultivated with citrus trees. Predominant among these are the Biondo variety of orange and the Avana of mandarin that are easily sold on the market of Rome, only 120 km away. Apart from some investigations of Ruggieri, very few studies have been made of the citrus diseases of the area, particularly the virus diseases.

One of the most widespread virus diseases of citrus in Italy is psorosis, with its various manifestations. In 1931, surveys for this disease in Italy were made by Fawcett (1) and in 1952 by Klotz (2). Though Fawcett and Klotz explored various regions, they made no mention of the area of Fondi, which apparently was not visited by them.

The disease undoubtedly occurs in Fondi, at least so far as foliage symptoms are concerned.

In Fondi, as elsewhere in Italy, xyloporosis is very prevalent. Reichert (3) first reported the presence of this disease at Fondi, where observations were afterwards carried out by the writer (4). Xyloporosis attacks all the types of rootstocks of bitter orange trees examined, as well as the different varieties of oranges, lemons, and mandarins. The disease, however, does not seem to be of severe importance, though some trees show signs of deterioration.

The most frequent symptoms observed on the diseased plants are: formation of small cones or small crests on the inside of the bark weighing on and impressing the wooden zone, and asymmetric fruits. More rarely, one finds also pitting of the wood, inverse xyloporosis, appearance of small gum sacks in the thickness of the bark, and diffused chlorosis of the foliage.

Further observations at Fondi have revealed a few cases of exocortis. The disease, which appears some years after grafting only when sick grafts were transplanted on *Poncirus trifoliata*, seems to be rare, owing to the fact that only rarely are citrus plants grafted on *Poncirus*, but also because not all the trees show the disease.

The most obvious symptom is the basal cracking of the bark of the graft bearer, which often oozes gum. The crevices, however, do not penetrate very deeply into the tissues, but when taking away small parts of the bark one observes a slightly brighter colour on the damaged basal zone than on the rest of the trunk, which is a dark salmon pink colour.

Another symptom of the disease is an inferior development of the crown, which is estimated to be almost 1/3 less than that of healthy trees grafted on *Poncirus*. Color variations of the leaves have not been observed; leaves appear to be normal green.

Fruiting is normal on sick trees, except that production is proportionally less than that for healthy trees because of the inferior development of the crown of the exocortis-affected trees.

The small citrus garden on *Poncirus* under discussion was constituted by the proprietor in 1935 to utilize the resistance of the rootstock to cold. It seems that resistance to cold has been achieved, because during the past 25 years damages due to cold have been limited, and because in the winter of 1956 the severe low temperatures caused but moderate damage, from which the trees soon recovered.

#### *Literature Cited*

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