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A. TIITS

FURTHER INVESTIGATIONS ON THE VIRUS CAUSING PLUM POX-LIKE DISEASE*

II. A comparison of the plum pox-like virus and plum line pattern virus on *Cerasus tomentosa* (Thunb.) Wall.

A. TIITS. SARKATAOLIST HAIGUST PÕHJUSTAVA VIIRUSE EDASISEST UURIMISEST.

II. Sarkataolist haigust põhjustava viiruse ja ploomi-paellaiksuseviiruse võrdlemine kirsililgil *Cerasus tomentosa* (Thunb.) Wall.

A. ТИИТС. ДАЛЬНЕЙШИЕ ИССЛЕДОВАНИЯ ВИРУСА, ВЫЗЫВАЮЩЕГО БОЛЕЗНЬ СЛИВ, ПОДОБНУЮ ШАРКА

II. Сравнение с *Cerasus tomentosa* (Thunb.) Wall. вируса, вызывающего болезнь слив, подобную шарка, и вируса, вызывающего линейный узор слив.

A recent publication (Tiits, 1967) described the reaction of *Cerasus tomentosa* plants to virus causing plum pox-like disease in Estonia. Because of the existence of the plum line pattern disease in Estonia (Tiits, 1965), it was likewise necessary and interesting to carry out comparative investigations on these two viruses.

In 1966 and 1967, *Cerasus tomentosa* seedlings were infected, by budding or grafting, simultaneously with the plum pox-like disease causing virus (source 'Opatha') or plum line pattern virus (source 'Emma Lepperman'). The following results could be observed.

Symptoms of the plum pox-like virus infection on *Cerasus tomentosa*. Leaf symptoms on *Cerasus tomentosa* plants infected with the plum pox-like virus consists, as described earlier (Tiits, 1967), of areas with reduced growth rate of the veinal tissue causing curling or crinkling, and greenish-white or yellowish-white chlorotic bands connected with main veins (vein-banding).

It is very characteristic of this virus infection on all the seedlings of *Cerasus tomentosa* in our experiment that all the symptoms were associated with the main veins of the leaf (Fig. 1).

Flower symptoms occurred only on the *Cerasus tomentosa* forms that had pink flowers. There was a dark breaking on the pale pink flowers (Fig. 2). The white flowers had no breaking.

Fruit symptoms occurred on the greater part of the seedlings of *Cerasus tomentosa* in our experiment. These were of the same type as described on plums (Yossifovitch, 1956; Tiits, 1964) (Fig. 3).

Symptoms of plum line pattern virus infection on *Cerasus tomentosa*. Only leaf symptoms were observed on *Cerasus tomentosa* seedlings inoculated with the plum line pattern virus. There were irregularly

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Fig. 1. Light-green chlorotic bands bordering the main veins (vein-banding) on the leaves of *Cerasus tomentosa* infected with the plum pox virus.

Fig. 2. Dark breaking of pink flowers of *Cerasus tomentosa* infected with the plum pox virus.

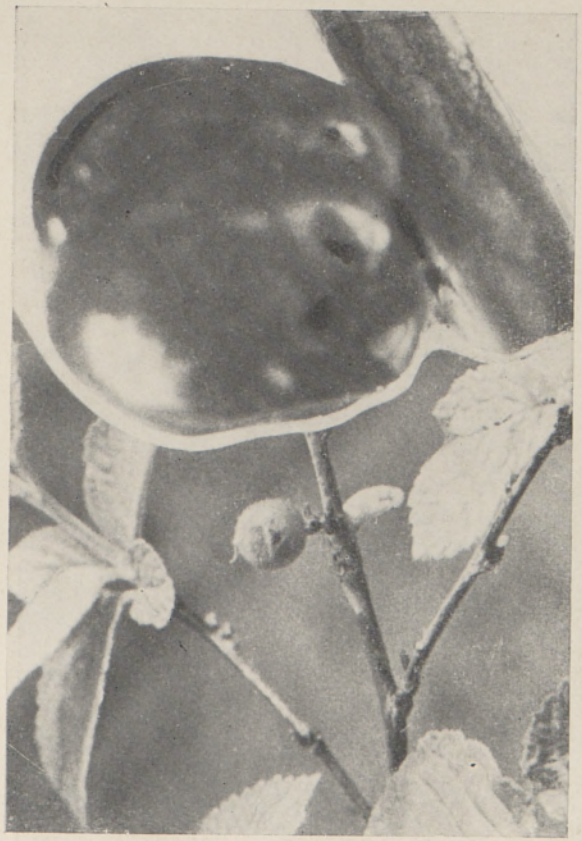

Fig. 3. On the mature fruit of *Cerasus tomentosa* infected with the plum pox virus, there are dark brown sunken areas, "tooth-traces" or "pock-marks".

Fig. 4. Interveinal spotting on the leaf of *Cerasus tomentosa* infected with the plum line pattern virus.

distributed discolorations (pale-green spots) over the leaf lamina. The pale-green areas were not associated with the main veins of the leaf, they were of the interveinal type, bordered by small veins (Fig. 4).

Leaf deformations, such as rugosity, crinkling and curling ascribed to a reduced growth rate of the veinal tissue, associated with the plum pox-like virus infection, were not observed on the occasion of the plum line pattern virus infection.

Flower and fruit symptoms were not stated with the plum line pattern virus infection on *Cerasus tomentosa*.

Discussion

According to fruit symptoms, the virus disease on plum variety 'Opatha' was regarded to be the plum pox disease (Tiits, 1964); as there were some doubts about it, it was named the "plum pox-like disease" (Tiits, 1965, 1967). Leaf symptoms on plum indicator-varieties 'Požegača' and 'Black Goldan', and pox-like fruit symptoms on *Cerasus tomentosa* seedlings draw attention to the probability that in Polli in the Estonian SSR the plum variety 'Opatha' was really affected by the plum pox virus which is spread in Yugoslavia, Bulgaria, Roumania and elsewhere in the regions near the Balcans.

The plum pox virus is evidently capable of causing plum pox symptoms on fruits of all drupaceous species susceptible to the mentioned virus.

Taking into account (1) the limited possibility of using herbaceous indicator-plants and (2) the very long period of time before noticing fruit symptoms on plum indicator-varieties, Manchu cherry *Cerasus tomentosa* (Thunb.) Wall. may be recommended as a good indicator-plant for the plum pox virus.

The *Cerasus tomentosa* plants (1) are very easily infected with the plum pox virus, which is transferred on it with plum graft, (2) its seedlings, growing in pots, bear flowers and fruits in the third year of age, and (3) they show differing symptoms for the plum pox virus and the plum line pattern virus.

It is possible to select such a good vegetative propagated clone of *Cerasus tomentosa* which reacts very clearly and shows distinct leaf symptoms on both of the mentioned viruses, and in the case of the plum pox virus it shows fruit symptoms as well.

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