

FLAT LIMB OF APPLE IN IRAN

FEREYDOUN AFSHARPOUR

Plant Pests & Diseases Research Institute, Evin, Tehran

Summary

Some other common names:

Crinkle wood; Flachaestigkeit; Gravenstein gnarl; Rillenkrankheit; Twisted limb.

Flat limb of apple is one of the most important fruit tree viruses, which was first found and investigated in U.S.A. on the variety Gravenstein in 1906. Although this variety seems to be very sensitive, many others, such as Stahls Winterprinz, are also susceptible, and some are affected as severely as Gravenstein. Flat limb of apple have also been observed on the apples Glockenapfel, Golden Pearmain, Ingrid Marie, James Grieve, Lord Lambourne and Ontario. Furthermore, the disease is transmitted experimentally to the apple rootstocks MI, MII, MIV, MVIII, MIX, MXIII and MXVI, infection being proved by retransmission to healthy Gravenstein.

The disease can be transmitted by grafting and budding. Other trials for transmission the flat limb, using Aphids and other vectors, have yielded negative results. According to different reports flat limb have been found also in pear and quince and could be transmitted from apple to peach, walnut and some stone-fruit indicators. In the transmission of the disease the virus is reported to move only upwards and usually more than one year and in some cases up to 15 years may be needed before any symptom appears.

The external symptoms of the disease consist of slight linear depressions of the shoots. This depressions later develop into deep furrows and the branches become flattend, twisted and brittle.

Flat limb was first found in the apple variety Shemirani in Tehran area in 1968. Experiments were carried out in 1969 by grafting the scions of infected trees on Gravenstein rootstocks with control in three replications. The symptoms of the disease have been developed on the older branches of tested trees in 1971. According to the sensitivity of different apple varieties and for confirming the above experiment, another trial was also carried out by choosing the apples Gravenstein and Stahls Winterprinz as indicators. These have also been grafted with materials of the diseased trees. The results of this trial may soon show the sensitivity of the above mentioned varieties.

The economic importance of the disease is rather difficult to assess. Some trees are slightly affected and some show severe symptoms. This may depend on different factors such as virus strains, growing conditions and the scion varieties and rootstocks involved. It is clear, that in countries in which the sensitive apple varieties were widespread in orchards, the disease will become serious.

All trees showing any symptom of flat limb should be removed from nurseries. It should be also necessary to develop trees that have been proved free of flat limb virus, and nurseries should be supplied with tested material, in future.

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