Sanitary status of stone fruit industry in the Mediterranean countries: Turkey

Caglayan K., Cali S.

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Kadriye ÇAGLAYAN
Mona H. GAZEL
Plant Protection Department
Mustafa Kemal University
Antakya, Hatay (Turkey)

Salih ÇALI
Plant Protection Research Institute
Adana (Turkey)

The total land area of Turkey is about 80 million ha supporting 27.5 million ha of agricultural and 20.2 million ha of forest land. The climatic conditions give Turkey the opportunity to cultivate many different crops, even subtropical crops as tea, banana, loquat, citrus, pistachio, and pomegranate.

Stone fruit production and the number of trees (bearing and non-bearing) in Turkey were 2,193,500 tons and 132,555,000, respectively (Anonymous, 1993). The most common species of stone fruits is peach with 12,059,000 trees and a production of 350,000 tons in 1990. It is followed by apricots, plums, sweet and sour cherries with 9,778,000; 8,322,000; 6,294,000 and 4,314,000 of bearing and non-bearing trees, respectively (Anonymous, 1993).

The sanitary status of stone fruit trees (SFTs) does not show a stable picture in Turkey and virus and virus-like diseases of SFTs have not been studied rigorously (Çali,1991). Plum pox was one of the most studied virus diseases of SFTs. The first plum pox virus (PPV) recorded was by Sahtiyanci (1968) and a second by Kurçman (1973). Both studies were based on symptomatological observations, the former in Edirne (Thrace) and the latter in Ankara (Central Anatolia). Yürektürk (1984) made a survey of peach, plum, apricot, and almond. He did graft inoculations on GF 305 in Marmara region and 34 of 345 samples were found to be infected with PPV. Dunez (1986, 1988) who visited Turkey stated that the disease was not very common compared to neighbouring countries with PPV. Excessive dropping of apricot and plum fruits in Ankara were investigated in terms of virus diseases and PPV was detected by mechanical inoculations to herbaceous hosts and serological tests (Erdiller, 1988). Symptomatological observations, mechanical inoculations, inclusion bodies, and serological

tests were used to detect PPV in Ankara region by Elibüyük and Erdiller (1993). In this study, some apricot and plum cultivars were found susceptible and one plum variety was tolerant.

Other than PPV, an interesting disease of cherry trees grown in Amasya, in the Central Black Sea region, was investigated by different researchers starting from 1965 (Demirören *et al.*, 1971; Alay *et al.*, 1973 and Çitir, 1987). The first study highlighted that the causal agent was a pollen transmissible type of ring spot virus according to indexing and serological tests, and the disease was spreading very rapidly. The second study lasted 6 years (1965-1970) and concluded that the agent was a graft transmissible virus. This destructive sweet cherry disease prevailing since 1959 caused the death of thousand trees and showed symptoms of chlorotic spots on leaves, reduction in size and quality of fruit. Low yield was also investigated by Çitir (1987). Electron micrographs indicated that the agent was a rod-shaped bacterium instead of a virus. Therefore, the Amasya cherry disease need more detailed investigations before any conclusion can be drawn.

Sweet and sour cherries were surveyed for virus diseases in Afyon in the early 1970's. Symptomatological observations and some indexing studies revealed that the trees were found to be infected with viruses. Later studies conducted with mechanical inoculations to herbaceous indicator plants showed that the sweet and sour cherry trees and some nursery plants were infected by prunus necrotic ringspot ilarvirus (PNRSV), cherry leaf roll (CLRV) and raspberry ringspot (RRSV) nepoviruses.

Recently, a study on the occurrence and detection of virus and virus-like diseases of SFTs were carried out in the East Mediterranean Area. Çaglayan Yildizgördü and Çali (1994) found that 8 of 61 plum and apricot trees were infected with PNRSV, prune dwarf (PDV) and apple chlorotic leaf spot virus (ACLSV) according to ELISA tests. In the same area Baloglu *et al.* (1995) tested plum and peach trees against only PPV and found no infection.

Another work was done by Çaglayan and Hurigil (1996) in the same area with peach trees. The results of ELISA showed that 15.5 % of the plants were infected with PNRSV and 5.2 % had a mixed infection with PNRSV and PDV. Only 3.4 % of trees were found to be infected with ApMV. All tested plants were free of PPV and ACLSV.

The sanitary status and virus and virus-like diseases of SFT were summarised in this paper. Since Turkey has a big potential in stone fruit production, all modern agricultural techniques and disease-free (tested) propagation material, quarantine and certification schemes should be taken into consideration.

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