

## Sanitary status of stone fruit industry in the Mediterranean countries: Tunisia

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# TUNISIA

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Tunisia is a Mediterranean country characterized by flourishing tree crops among which stone fruit trees play a leading role totalling an area of about 380,000 ha and 145,000 tons of fruit production in 1994 (Direction Générale de la production Agricole, 1994). Among the stone fruits, almond is the most important with 310,000 ha, peach second with 40,000 ha, and apricot third with 17,000 ha.

The phytosanitary status of stone fruit industry in Tunisia with respect to virus and virus-like diseases was limited to information stemming from a few surveys conducted in the past (Dunez, 1989; Boulila, 1992).

Within the framework of the collaboration between IAM-Bari and Tunisian institutions, virological studies were carried out to evaluate the sanitary status of stone fruit trees. Test materials were collected from commercial orchards, experimental collections of INRAT, and mother block stands.

Different viruses affected fruit trees. The diseases associated to these viruses exhibited a wide range of symptoms that consisted of mosaic, chlorotic spots, stunted growth, and cup-shaped leaves. The more common viruses found affecting fruit trees in Tunisia were those belonging to the ilarvirus group (prunus necrotic ringspot, PNRSV; prune dwarf, PDV; and apple mosaic, ApMV), and apple chlorotic leaf spot (ACLSV). Neither the plum pox virus (PPV) nor the nepoviruses (tomato ringspot, TomRSV; arabis mosaic, ArMV; raspberry ringspot, RRSV; Tomato black ring, TBRV; strawberry latent ring spot, SLRV; cherry leaf roll, CLRV) were detected.

In recent studies carried out in the traditional areas of stone fruit tree growing areas (Zeramdini *et al.*, 1996; Edhib, 1996), almond has the highest infection rate with 34%, followed by peach (12.6%), plum (10%), cherry (7%) and apricot (4.7%).

From 1,130 almond trees tested, 387 (34%) were infected with one or more viruses. Most of the infected plants hosted a single virus (25%), mixed infections accounting for the remaining 9%. PNRSV was detected in 53% of the infected trees, followed by PDV at 18% and ApMV at 1.8%. ACLSV was very rare. Mixtures of PNRSV and PDV were found in about 25% of infected trees, and a combination of three virus infections was detected in 1% of the cases.

Only PNRSV and ACLSV were detected in 550 apricot samples analysed (4.5% and 0.2%, respectively).

Out of 1,048 peach samples analysed, 132 (12.6%) were affected by at least one virus. The levels of infection were 8.3% for PNRSV, 1.8% for PDV, and 1.6% for ACLSV. Double infections were observed in 7% of the infected trees, the most common combinations being PDV+PNRSV (3%) and PDV+ACLSV (2.3%).

The peach samples collected either in a central-west orchard or in oases showing a diffused mosaic, were positive for peach latent mosaic viroid (PLMVd).

In 570 Japanese plum trees tested, virus infections detected were as follows: 35.7% with PNRSV, 30.3% with PDV, and 18% with ACLSV. Among the 16% mixed infections detected, 10.6% was PDV+ACLSV and 5.4% was PNRSV+ACLSV.

Out of 170 European plum trees tested, only 12 (7%) were infected by PDV (5.3%) and ACLSV (1.7%), all single infections.

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