

Tree Fruit Diseases

Fire Blight and Plum

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An extensive incidence of blighting of young shoots and cankers was observed in a plum orchard in the Malheur County, Oregon, during the summer of 1993. The two principal varieties involved were Fortune and Friar, both Japanese-type plums (*Prunus salicina*). All the 1200 trees of the cv. Fortune and about 70 trees of cv. Friar (pollenizers) planted in 1991 in a 5.8 acre block were found to be infected. The principal symptoms were blighting of young, succulent terminal shoots with reddish brown to black necrotic lesions on the stems and petioles, wilting and drying of leaves above the girdled regions, often presenting a shepherd's hook-like appearance. Cankers on one-year-old shoots were brown with the stem split along the long axis of the shoot. No symptoms were found on fruits. There were susceptible cultivars of apple with severe fire blight symptoms in the immediate vicinity of this plum block. Weather conditions were very conducive for fire blight during 1993.

Symptomatic tissues showed abundant ooze on microscopic examination. Isolations from infected tissues yielded pure cultures of a bacterium on nonselective (KB agar, nutrient sucrose agar) and selective media (MSS, CCT). Based on the colony characteristics on different media, Gram reaction, pathogenicity to green pear fruit, hypersensitive reaction in tobacco leaf, results of Biolog Bacterial Identification System, fatty acid analysis and the results of Polymerase Chain Reaction using specific primers, the bacterium was identified as *Erwinia amylovora*. Inoculations on plum (cv. Fortune), apple (cv. Jonathan) and pear (cv. Bartlett) shoots gave positive results of pathogenicity, and the bacterium was reisolated from the infected tissues.

Although there are some earlier reports (1895, 1928) of fire blight in Japanese plums, there are no records of its natural occurrence in the recent literature, and there are no type cultures of the pathogen. This report confirms the susceptibility of Japanese plums to fire blight, and type cultures are now available.