The Pathogen and Disease Symptoms

Speck rot, a postharvest fruit rot disease of apple, is caused by the fungus *Phacidiopycnis washingtonensis*. Stem-end rot and calyx-end rot are the two major symptoms of speck rot on apple fruit (Fig. 1). Decayed tissue is spongy to firm and not readily separable from the healthy tissue. The coloration of the decayed areas varies from light brown to dark brown or occasionally black. Brown to black specks with white to light tan centers may appear around the lenticels of *P. washingtonensis* decayed fruit, especially on red apple cultivars.

Sources of Pathogen Inoculum

*P. washingtonensis* inoculum responsible for apple fruit infection is present in affected apple orchards. The fungus is associated with dead tissues on apple trees. It can also cause twig dieback and canker disease of the crabapples used as pollinators. *P. washingtonensis* is a weak canker pathogen to apple trees. The fungus causes small black dots (fruiting bodies) to form on infected twigs and tree branches. Fruiting bodies contain millions of spores which serve as inoculum for fruit infection. The fungal spores are then spread by rain, irrigation water or over-tree cooling. Infection of apple fruit occurs in the orchard, but fruit rot symptoms develop during storage or at the market.

Disease Control Recommendations

‘Manchurian’ crabapple used as pollinators in apple orchards are very susceptible to twig dieback and cankers caused by this fungus, serving as an important source of inoculum (Fig. 2). Removal of twigs with dieback and cankers will help reduce inoculum of the fungus in the orchard.

Water spreads the fungal inoculum and creates conditions conducive for fruit infection. Therefore, it is recommended that overhead irrigation be avoided and that over-tree cooling be limited in duration to only the amount necessary for sunburn prevention.

Preharvest fungicides such as Ziram, Topsin M or Pristine applied near harvest as a ground application reduce speck rot caused by *P. washingtonensis*. Good coverage is important to the effectiveness of preharvest fungicide sprays.

A postharvest fungicide drench with Penbotec (pyrimethanil), Scholar (fludioxonil) is highly effective in controlling this disease on apple fruit. A postharvest drench with Mertect (thiabendazole) is also effective. These three postharvest fungicide treatments are more effective than the preharvest fungicide sprays.

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