

Tree Fruit Diseases

Detection of *Erwinia amylovora* on Leaves in a Blighted Apple Orchard

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The spatial and temporal distribution of *Erwinia amylovora* on 2556 leaves in a mixed cultivar apple orchard in Utah was monitored during the 1997-98 seasons. Imprints of apparently healthy leaves from shoots within 0.3 m of shoot blight and greater than 0.3 m or from healthy trees were made on CCT differential media. Populations of *E. amylovora* were detected on usually less than 25% of the leaves near infections but once on 90% of the leaves during a rainstorm. The highest incidence was detected on leaves during or soon after rain storms but the populations declined rapidly during dry days. The bacteria were detected on only 2 of 732 leaves taken from a distance greater than 0.3 m. This is surprising because 26% of the "check" leaves were taken from trees that had blight or from trees where blight was present in adjacent trees. We propose that *E. amylovora* does not spread very far from oozing fire blight infections and that it does not survive very long on leaves. Prompt removal of infections and spot treatments of bactericides on adjacent foliage may help reduce the reoccurrence of fire blight in orchards. During the 1999 season Jonathan apple leaves were inoculated with bacteria recovered from ooze and a stock laboratory culture. Epiphytic populations of both bacteria types declined at similar rates. Unexpectedly, these populations did not decrease as rapidly as the populations did in the 1997-1998 blighted apple orchard study. At one week bacteria could still be recovered from inoculated leaves.