7.8 The Identification and Distribution of Citrus Greening Disease in Jamaica

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Citrus huanglongbing (HLB), also known as citrus greening disease, is a devastating bacterial disease that affects all varieties of citrus, as well as citrus hybrids. Citrus HLB is caused by the \textit{Candidatus Liberibacter} ssp. bacteria, of which there are three known species. These are \textit{Ca. L. asiaticus}, \textit{Ca. L africanus}, and \textit{Ca. L. americanus} (Deng et al., 2008). Citrus leaf samples were collected island-wide from several varieties of citrus trees that appeared to be symptomatic. The symptoms observed were blotchy mottle and asymmetrical yellowing of the leaves, along with lopsided fruits and poor fruit quality. A total of 167 samples were tested for the presence of citrus greening using the primer pair OI1 and OI2c, of which 72% were positive. Positive samples were observed island-wide from all 14 parishes. The bacterium was found to be present in several species of citrus, including \textit{Citrus sinensis} (orange), \textit{Citrus aurantium} (sour orange), \textit{Citrus tangerine} (tangerine), \textit{Citrus × paradisi} (grapefruit), \textit{Citrus aurantifolia} (West Indian lime), \textit{Citrus latifolia} (Bearss lime), \textit{Citrus grandis} (pommelo), and \textit{Citrus jambhiri} (rough lemon). The HLB bacterium was also detected in the hybrids \textit{Citrus reticulata} × \textit{Citrus paradisi} (ugli) and ortanique. The most severe symptoms were observed in limes, and the least severe symptoms were observed in grapefruits. Select samples were cloned and sequenced, and blast analysis showed that the sequences were 99% similar to that of \textit{Ca L. asiaticus} from Florida, Brazil, and Cuba. The results obtained indicate that the disease is widespread across Jamaica, and therefore measures such as removal and destruction of infected trees should be employed as a means of disease control.

Reference