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DISEASE NOTES

Bacterial Canker of Mango, Mangifera indica, Caused by Xanthomonas citri pv. mangiferaeindicae, Confirmed for the First Time in the Americas

G. Sanahuja, R. C. Ploetz, P. Lopez, J. L. Konkol, and A. J. Palmateer, Tropical Research & Education Center, University of Florida, Homestead USA 33031; and O. Pruvost, CIRAD-Université de la Réunion, UMR PVBMT, Saint Pierre, La Réunion, F-97410 France.

ABSTRACT

In June 2015, symptoms of what appeared to be bacterial canker (also known as bacterial black spot) were observed on mature fruits of mango, Mangifera indica, in the vicinity of Boynton Beach and Lake Worth, FL. Star-shaped lesions up to 2 cm in diameter erupted from the surfaces of ‘Keitt’, ‘Haden’, ‘Springfels’, and ‘Lemon Zest’ fruit, and oozed a sticky, clear exudate; symptoms were not observed on leaves or twigs. From lesions, a nonpigmented bacterium was recovered on yeast-peptone-glucose agar (YPGA) and characterized with efp and dnaK, two housekeeping genes used by Bui Thi Ngoc et al. (2010) to classify pathovars of X. citri. Amplicons from a representative isolate were sequenced (KU746336 and KU746337) and maximum likelihood analyses (Tamura-Nei model) with MEGA 6.06 placed the isolate among strains of Xanthomonas citri pv. mangiferaeindicae (Xcm). In incubator studies (30°C day, 26°C night, 12-h photoperiod), the mesophyll of leaves on potted ‘Keitt’ and ‘Haden’ plants were injected with a hypodermic needle and 1 x 10^5 CFU/ml of the isolate from 18-h YPGA colonies suspended in sterile deionized H_2O. After 7 days, black lesions developed on inoculated leaves, but not on leaves injected with sterile deionized H_2O. Diagnostic amplicons for Xcm were generated for isolates recovered from the lesions, and similar results were obtained when the experiment was repeated a second time. Bacterial canker is widespread in the Eastern Hemisphere (Gagnevin and Pruvost 2001), moved recently to West Africa (Pruvost et al. 2011), and was recently reported in Hawaii (Yasuhara-Bell et al. 2013). However, this is the first report of the disease in the Americas (prior reports of the disease in the region were erroneous (Ah-You et al. 2007)). Only two of the top 10 mango-producing countries...
are in the Americas, but the top exporter (Mexico) and three other countries in the region are among the top 10 exporters (Evans and Mendoza 2009). Environmental conditions in southern Florida appear to be ideal for an increased importance of bacterial canker in the region as well as other areas in the Americas in which production of this crop occurs.

References:


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