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Resistance of different Musa varieties to some strains of *Fusarium oxysporum f. sp. cubense (Foc)* with particular focus on Foc Tropical Race 4 (Foc TR4) in Philippines

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Musa cultivars of different genomic groups were tested in the field and screenhouse against Foc strains. Three Vegetatively Compatible Groups (VCGs) namely, VCG 1213/16 (Foc TR4 strain), VCG 0123 and VCG 0126 were tested against 5 banana cultivars. Resistance was assessed on incidence of plants showing external symptoms and internal vascular discoloration index. Results showed that common commercial Cavendish (AAA) and local cultivar Lakatan (AAA) were susceptible to VCG 1213/16 but resistant to VCG 0123 and VCG 0126. On the other hand a local cultivar Cardaba (BBB) was resistant to VCG1213/16 but susceptible to VCG 0126 (Race 1 strain). This indicates a variety by Foc strain interaction. Results of field trials where more varieties were assessed against VCG1213/16, showed that genomic constitution based on balbisiana or acuminata, in diploid or triploid forms were not clearly related to resistance nor susceptibility to Foc TR4. Some AA diploids were highly resistant while some were susceptible. Similarly AAA, AAB and ABB triploids responded differently to Foc TR4 in the field. While VCG 1213/16 is highly virulent to many commercial cultivars, several cultivars were highly resistant. The variety by strain interaction is contrary to earlier belief that varieties susceptible to Race 1 strain are also susceptible to Race 4, pointing to the deficiency of the old Race classification system. This underscores the importance of more studies to understand field resistance of the many banana cultivars in relation to different Foc strains in different agroecosystem for practical purposes.

Biography

Agustin B Molina was a Senior Scientist and Regional Coordinator for Asia of Biodiversity International since 1998 and is currently an Honorary Research Fellow and Acting Regional Coordinator after his retirement in 2014. He spent more than 15 years of research on banana Fusarium wilt with regional partners in the Banana Asia Pacific Network. His career transcended the academe, industry and international R&D. He was a Plant Pathologist/Director of Research of Chiquita Brands Inc in Central America for 10 years; Former Professor and Chair of Department of Plant Pathology at University of the Philippines, Los Banos. He has obtained his PhD degree in Plant Pathology at Pennsylvania State University in 1983. He has published and presented many papers in his field.

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