



An overview of genetic resources of banana resistant to Sigatoka leaf spots in Kerala, India

Authors: R. Menon, A.K. Cherian, P. Patil
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Abstract:
The use of resistant cultivars with acceptable yield and quality is a key component in managing diseases and pests in an integrated cropping system. Among the various diseases affecting banana in Kerala, Sigatoka leaf spots constitute a major threat. Resistance to the leaf spot disease is a major breeding target of crop improvement programs across the globe and a number of resistant hybrids have been evolved. A total of 350 accessions conserved in a field genebank at the Banana Research Station, Kannara have been characterized and evaluated to identify resistant sources. 'Pisang Lilin', 'Pisang Madu', 'Pisang Jari Buaya', 'Pisang Berlin', 'Cv. Rose', 'Tongat' and 'Sanna Chenkadali' are the Sigatoka leaf spot resistant edible AA diploids identified and used as male/female parents in hybridization. 'Pisang Lilin' served as the male parent of two Sigatoka leaf spot resistant hybrids developed and released for cultivation in Kerala. Presently a number of resistant edible diploids and the highly resistant wild 'Calcutta-4' (*Musa acuminata* ssp. *burmannicoides*) are employed in the improvement of commercial French plantain cultivar 'Nendran' (AAB genome, Plantain subgroup). 'Dudhsagar' (AAB genome), a dual purpose cultivar with high productivity (30 t ha⁻¹) and 'Yangambi Km 5' (AAA genome, lbota subgroup), a small fruited dessert banana are two Sigatoka resistant selections from indigenous and exotic germplasm, respectively. Shade tolerance and multiple resistances make these cultivars ideal choices for homesteads, where they can be grown without any plant protection measures. Among 17 introduced tetraploid hybrids evaluated, 7 displayed high resistance to Sigatoka leaf spot in addition to good yield attributes, and are under multi-location testing to assess their adoption potential.

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