

Disease Notes



First Report of *Rice yellow mottle virus* in Rice in The Gambia

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Abstract

Rice yellow mottle virus (RYMV) of the genus *Sobemovirus* is a major biotic constraint to rice (*Oryza sativa*) production in Africa. First reported in Kenya during 1966, RYMV was later found in most countries in Africa where rice is grown (1). In countries in westernmost Africa (The Gambia, Guinea-Bissau, Mauritania, and Senegal), plants with leaf yellowing and mottling symptoms were observed, but RYMV was never isolated. Rice is the staple food in The Gambia. In 2006, four samples were collected from local rice varieties in the Kuntaur Region in the center of The Gambia. Mechanical inoculation with leaf extracts from all samples caused typical yellow mottle symptoms on the susceptible rice varieties BG90-2, Bouaké 189, and IR64.

RYMV was detected in the four samples collected by ELISA with polyclonal antisera (2). The 720-nt coat protein gene was amplified for each isolate by reverse-transcriptase-PCR with primers 5'-CAAAGATGGCCAGGAA-3' (sense) and 5'-CTCCCCACCCATCCCGAGAATT-3' (antisense) (2). The RT-PCR products were directly sequenced (EMBL Accession Nos. AM765810, AM765811, AM765812, and AM765813) and then aligned using ClustalW with a pool of RYMV coat protein sequences from West African isolates (EMBL Accession Nos. AJ279905, AJ279901, AJ885137, AJ885124, and AJ279935). Phylogenetic reconstruction by maximum-likelihood with PAUP indicated that the isolates from The Gambia formed a monophyletic group with over 97% nucleotide identity and are closely related to isolates of other countries in West Africa (Burkina Faso, Côte d'Ivoire, Guinea, Mali, and Sierra-Leone) with 91 to 94% identity. Detection of RYMV in The Gambia indicates that RYMV is present in westernmost Africa, which is referred to as the 'rice belt' of Africa, and shows that RYMV is widely distributed from eastern Africa (Tanzania) to the western part of the continent.

References: (1) N. K. Kouassi et al. Plant Dis. 89:124, 2005. (2) A. Pinel et al. Arch. Virol. 145:1621, 2000.



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