

**ICPP
BOSTON**Plant Health in a
Global EconomyJULY 29 -
AUGUST 3 **2018**

Planthopper-transmitted tenuiviruses infecting rice in the Americas

Friday, August 03, 2018**14:30 - 14:50**📍 *Hynes Convention Center - Room 302*

Rice hoja blanca disease (RHBD) has a significant economic impact in the rice-growing regions of the Americas where it is endemic. Initial field reports date back to 1935 from the department of Valle del Cauca in Colombia. Then in the mid-1950s, it emerged in the state of Florida, threatening rice production in the southeastern USA. At the same time, wild grasses were identified as possible alternate hosts of the disease and symptoms including *Echinochloa* and *Brachiaria* hosts. Since then, RHBD has been reported affecting rice plantings in Brazil, Belize, Costa Rica, Cuba, Dominican Republic, El Salvador, Ecuador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Peru, Puerto Rico, Surinam and Venezuela. Nevertheless, partial sequence identification of isolates has been obtained only for Colombian, Costa Rican and Peruvian isolate and a full genome of the causal agent was just completed in 2017, for a Colombian isolate. RHBD is caused by the insect-borne tenuivirus *Rice hoja blanca virus* (RHBV), a multipartite single-stranded, negative sense RNA [ss(-)RNA] virus. It was first described in 1983 and partially characterized between 1992 and 1993. The vector of RHBV is the planthopper *Tagosodes orizicolus* Müir (Hemiptera: Delphacidae) which are known long-distance fliers. The capacity of RHBV and related tenuiviruses to infect the insect host, explain the cyclic nature of RHBD outbreaks and its broad geographic occurrence. The recent completion of a full genome of RHBV and its comparison with related tenuiviruses found in *Echinochloa* and *Urochloa* hosts, opens the door to more detailed epidemiology and recombination studies that will improve diagnostics and the early detection of RHBV and associated tenuiviruses.

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