Survey of potential insect vectors of Rice Yellow Mottle Virus in the Southern and Central rice basin of Benin

Augustin KOU DAMI LORO1, Abou TOGOLA2, Angelo Cocou DJIHINTO3, Ouorou Kobi DOURO-KPINDOU4, Martin AKOGBETO1

1Département de Zoologie, FAST, BP 526 Cotonou, Université d’Abomey-Calavi, Abomey-Calavi, Benin, 2International Institute of Tropical Agriculture, PMB 3112 Kano, Kano State, Nigeria, 3Institut National des Recherches Agricoles du Bénin (INRAB), 01 BP 884 Cotonou, Benin 4International Institute of Tropical Agriculture (IITA), 08 BP 0932, Cotonou, Benin

Corresponding Author: Augustin KOU DAMI LORO, Address: BP 526 Cotonou (Bénin)
Tel: + 229 97 86 99 64; Email: koudaugus@yahoo.fr

Original submitted in on 3rd October 2018. Published online at www.m.elewa.org on 31st January 2019
https://dx.doi.org/10.4314/jab.v133i1.3

ABSTRACT
Objectives: Insects are considered as the main vectors of Rice Yellow Mottle Virus (RYMV) in Africa. However, in Benin, little is known about the abundance and diversity of potential insect vectors of RYMV in rice fields to prevent and manage disease impact on rice production.
Methodology and Results: The inventory of the potential insect vectors of this disease was carried out in the rice basin of the Southern and Central of Benin where three sites namely AfricaRice station, Koussin and Ouedeme, were prospected. The sweep net technique, visual observation and yellow plates trap were used to conduct the surveys. Eighty insect species belonging to 28 families and 8 orders were recorded at rice tillering, booting, heading and maturation stages. Variation of insect diversity was low among the sites. The short-horned grasshopper Oxya hyla (Serville), the ladybird beetle Chnootriba similis (Mulsant), the rice white leafhopper Cofana spectra (Distant) and the stalk-eyed fly Diopsis thoracica (Westwood) were the most important species considering their relative abundance (10.62%, 5.19%, 7.99% and 7.01%, respectively) and frequency of occurrence (90%, 80%, 73.33% and 80%, respectively). These insects were mostly present at tillering and booting stages.
Conclusion and application of results: Seventy-five (75 %) of the recorded species were not identified as RYMV vectors before. Special attention must be paid to the distribution and importance of these insects in the fields. Studies on their ability to transmit RYMV according ecological conditions should be done to know high-risk production areas and to prevent large epidemics of RYMV.

Keywords: Rice-feeding insects, West Africa, virus transmission, relative abundance, occurrence, rice ecology