

Selection of an attenuated strain of Papaya ringspot virus with protective capacity in integrated an manegement conditions

A. González¹, G. Trujillo² y A. Vegas³

Abstract

Twenty five *Papaya ringspot virus* (PRSV-P) isolates coming from mutagenesis *in vitro* were preselected as attenuated strains T6-2, T6-4, T6-6, T6-10 and T6-13, in insect protected shed conditions, taking into account absence of symptoms and delay of the typical symptoms of disease in plants protected and challenged with severe strains. After 30 days protected plants were challenged and 15 days later non protected controls showed 53 % infection rates, while protected plants exhibited no symptoms; demonstrating the protective effect of attenuated strains. After 22 days, non protected controls showed 100 % infection rates and the protected plants with T6-2 and T6-10 presented 10 % infection rates, while the rest had an average 56,6 % infection rate. After 30 days, protected plants with promisory T6-10 strain showed 70% of infection rates and other protected plants exhibited an average of 85%. Isolate T6-10 was selected as attenuated strain due to its protector capacity shown by the lowest infection percentage in challenged plants under shed conditions. Fifty *C. papaya* cv Cartagena Amarilla plants protected by the T6-10 strain were planted in the field at a density of 3x3m, spraying with 1% mineral oil every 15 to 21 days and 10% of infected plants were eliminated to diminish the pressure of inoculum. After 5 months the strain T6-10 offered total protection to plants, while the reference control had already reached 100 % of infection. The protected plants showed 2.2%, 4.4 %, 11.1%, 28.8%, 50% infection rates after 6, 6.5, 7,7.5 and 8 months, respectively. The high protective capacity of strain T6-10 was demonstrated in shed and field conditions and is recommended for use in semi-commercial operations.

Key words: *Carica papaya*, cross protection, attenuated strain, *Papaya ringspot virus*.

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1. Fundación DANAC. Apdo 182. San Felipe. Yaracuy. E-mail: gonzalexda@yahoo.com.

2. Universidad Central de Venezuela, Facultad de Agronomía. Instituto de Botánica, sección de Fitopatología. Apdo. 4579. Maracay 2101. E-mail: gus202@cantv.net.

3 Instituto Nacional de Investigaciones Agrícolas INIA, Laboratorio de Biotecnología, Apdo. 588. Maracay 2101. E-mail: vegaslux@yahoo.com