

## Prevalence of Banana streak viruses in Guadeloupe

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A prevalence study of *Banana streak virus* species BSOLV, BSGFV and BSIMV was carried out in Guadeloupe in 2014-2015. A total of 1500 leaf samples were collected throughout Guadeloupe, in plantations, Creole gardens, abandoned fields and wild areas. Samples were representative of the main banana types grown in Guadeloupe, including dessert banana (AA, AAA and AAB genotypes) and plantain (AAB and ABB genotypes). Each leaf sample was indexed separately for BSOLV, BSGFV and BSIMV by immunocapture PCR [1, 2].

A total of 15 samples were indexed positive for BSOLV and 13 for BSGFV, with no mixed infection registered. No sample was indexed positive for BSIMV, confirming previous results suggesting that this BSV species may not be present in Guadeloupe [3]. Overall BSV prevalence levels were low, with only 1.05% (6/570) of the analyzed AAA dessert banana, 2.57% (19/737) of the AAB types (plantain and Fig Pomme) and 1.87% (3/160) of the ABB plantain types infected. Compared with a similar survey carried out in 2006 on a more reduced number of samples [3], prevalence levels were very similar for dessert banana but significantly lower for AAB and ABB genotypes, which carry infectious endogenous BSV (eBSV) sequences that interfere with PCR-based diagnostic and cause frequent false positives. It is likely that the recent optimization of IC-PCR based diagnostic of BSVs [2] resulted in a more accurate detection of episomal BSVs.

Plantain and Fig pomme types with an AAB genome accounted for 66.7% (10/15) and 69.3% (9/13) of the samples infected by BSOLV and BSGFV, respectively, whereas dessert bananas with an AAA genome accounted for 20% (3/15) and 23% (3/13) of the samples infected by BSOLV and BSGFV, respectively and plantain types with an ABB genome accounted for 13.3% (2/15) and 7.7% (1/13) of the samples infected by BSOLV and BSGFV, respectively.

Overall, these results show that BSVs have a low prevalence in Guadeloupe in both dessert banana and plantain. Furthermore, none of the infected plants showed symptom, suggesting that BSV infections have a very limited (if any) impact on production in Guadeloupe. These results also provide insights into the epidemiology of BSVs in Guadeloupe, which will be discussed.

**Keywords:** *Banana streak virus*; prevalence; Guadeloupe

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