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**BOOK OF ABSTRACTS**



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## Session 6

### Oral 54

#### **Risk assessment and management of Banana streak viruses in Guadeloupe**

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Several species of Banana streak virus (BSV) occur in banana. They cause a wide range of symptoms on leaves, pseudostem and fruits, although the impact of infections on yield and fruit quality has never been properly assessed. BSVs are naturally transmitted by mealybugs. However, spontaneous infections occur in interspecific varieties such as plantains, following stress-induced activation of infectious endogenous BSV sequences (eBSVs) integrated in B (*Musa balbisiana*) genomes.

The kinetics of activation of infectious eBSVs was monitored in Guadeloupe in an experimental plot, using a random block design. It showed that infectious eBSVs display differential activation potentials in plantain varieties French Clair and Pelipita, pointing to a role of plant genetic background in the activation process. It also showed that the multiplication mode of planting material influences activation levels monitored under field conditions and that infection had no significant impact on plant growth and fruit production of both varieties.

A wide range prevalence study of BSVs undertaken throughout Guadeloupe's plantations, Creole gardens, abandoned fields and wild areas among varieties representative of the main dessert banana and plantain types grown in Guadeloupe showed that overall BSV prevalence were low in dessert banana and cooking banana. Compared with a similar survey carried out in 2006, prevalence was very similar for dessert banana but significantly lower for plantains, which carry eBSVs that interfere with molecular diagnostic and cause frequent false positives. It is likely that the recent optimization of BSV molecular diagnostic increased the accuracy of detection.

Overall, these results suggest that BSVs have a low prevalence and unmeasurable impact on dessert banana and plantain in Guadeloupe, owing to low vector-borne transmission and low activation of infectious eBSVs. These results also lead to recommendation regarding the management of BSVs through safe multiplication modes of plantain planting material.

**Keywords:** Banana streak viruses; endogenous viral elements; activation; prevalence; risk assessment