18. Prevalence and diversity of *Banana streak virus* species in Guadeloupe

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Banana streak viruses (BSV) are mealybug-transmitted members of the plant pararetrovirus genus *Badnavirus*. They infect banana and plantain worldwide, causing characteristic chlorotic and necrotic leaf streak symptoms, pseudostem splitting and necrosis. Although originally not considered an economically important virus, BSV has raised strong concern over the past 15 years due to the ability of *Musa acuminata* (A) x *Musa balbisiana* (B) genotypes, including a number of newly created hybrids, to produce BSV-infected propagules from virus-free source plants propagated by tissue culture. Such spontaneaous infections arise from the activation of infectious endogenous BSV sequences integrated into the genome of *M. balbisiana*, and called BSV endogenous pararetroviruses (EPRVs).

In order to assess the risk of spreading BSV through large scale distribution of *M. acuminata* x *M. balbisiana* genotypes, CIRAD is undertaking multilocal studies of the prevalence levels of BSV species in distinct *Musa* genotypes and under various cultural conditions, which both affect the activation of infectious BSV EPRVs. Such a study was carried out in Guadeloupe, where no synthetic interspecific hybrid species has been distributed but where both natural interspecific triploid AAB plantain or dessert banana species and triploid AAA Cavendish type dessert banana cultivars are widely grown for local consumption and export, respectively. Over 900 leaf samples were collected from Guadeloupe main banana growing areas. No BSV symptom could be observed. Each sample was indexed separately for the presence of four BSV species (BSOLV, BSGFV, BSImV and BSMysV). Results show that BSV species have an important level of prevalence (> 25%) in AAB plantains, resulting either from the widespread use of non certified (hence possibly infected) suckers or the activation of infectious BSV EPRVs. On the opposite, the prevalence of BSV species in AAA dessert banana is negligible (< 1%), showing that the use of virus-free certified vitroplants is a very efficient strategy for controlling the spread of BSV, and that vector borne transmission of BSV from plantain to dessert banana is very low in Guadeloupe. Our study also shows that BSGFV is the most prevalent species in Guadeloupe, with species BSOLV and BSMysV present at much lower levels.
Attempts to identify new BSV species in Guadeloupe, using M-IC-PCR and degenerate primers, were unsuccesful.