
Presence of endogenous Badnavirus sequences in yam genome: Implication for tropical crops exchange

Marie UMBER

French National Institute for Agronomic Research, French West Indies

Abstract:

The French West Indies Biological Resources Centre for Tropical Plants (CRB-PT) maintains several germplasm collections of tropical crops and wild relatives, including a collection of more than 450 yam accessions (*Dioscorea* spp). The purpose of this Centre is to conserve and distribute virus-free germplasm to end users. Yam is the third most important staple food crops in French Caribbean islands, after banana and sugarcane. Cultivation of this crop is almost exclusively by vegetative propagation, which presents challenges in the sharing and exchange of plant material because of the vertical transmission of viruses. To this aim, virus populations infecting conserved accessions are characterized and appropriate detection tools are created or optimized, then implemented for the sanitation of infected germplasm. Several Badnavirus species have been reported in yams. Recently, endogenous *Dioscorea* badnaviral sequences (eDBVs) were described in the genome of African yams of the *D. cayenensis* subsp., rotundata complex. The genome of the other two main cultivated yam species, *D. alata* and *D. trifida* has also been investigated by the analysis of BAC libraries. The major constraint of these sequences is to interfere with Badnavirus PCR-based detection methods and prevent from the accurate diagnostic of Badnavirus in yams. Moreover the occurrence of endogenous sequences from extant Badnavirus species in yams should suggest that some eDBVs could be infectious as some eBSV (endogenous Banana streak virus) sequences in banana. Conversely, molecular evidence supporting the role of

these EVEs (endogenous viral elements) in antiviral defense will also be presented.

Biography :

Marie UMBER has completed her PhD from Strasbourg University in France and Postdoctoral studies in Guadeloupe (French West Indies), working on endogenous viral sequences in yam and banana. Since 2013, she is the person in charge of the viral sanitation of the yam collection from the Biological Resources Centre for Tropical Plants (CRB-PT) in the French National Institute for Agronomic Research (INRA).