



## Cixiids and lethal yellowings of palms, a threatening quarantine disease for latin america: what we know what could be done?

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Coconut palms (*Cocos nucifera*) and other palms suffer from vector borne diseases, such as the Coconut foliar decay transmitted by the cixiid *Colvanalia taffini*, or the Dry bud rot transmitted by *Sogatella kolophon* and *Chloriona (Sogatella) cubana*, Dephacidae. *Recilia mica* (Cicadellidae) transmits the phytoplasma disease, "Blast", of coconut and oil palm. But other phytoplasma diseases, the Lethal Yellowing Type Syndromes (LYTS), pose the most serious threat to coconut plantations worldwide and especially in the Caribbean where it is known as Lethal Yellowing, inducing considerable damages. Phytoplasmas are unculturable phloem-limited prokaryotes. Most of them are transmitted by planthoppers and leafhoppers. Among the different LYTS, only one insect vector has been identified, in Florida: *Haplaxius (Myndus) crudus* (Cixiidae). Recently we proved *H. crudus* was involved in Mexico. But in our transmissions, *H. crudus* transmitted LYTS to *Pritchardia pacifica* and not to coconut. This difference in transmission may be linked to the existence of different haplotypes. Other planthoppers could be involved in the transmission, other *Haplaxius* species or *Nymphocixia caribbea* or *Oecleus sp.* LY is an absent quarantine pest (A1) for Brazil, and in the same way as the red palm mite *Raoiella indica* (Tenuipalpidae) invaded Venezuela and Brazil from the Caribbean, LY can invade Brazil and adjacent countries (Venezuela, Colombia, Guyana, Suriname or French Guiana) anytime. That is why we are trying to implement action plans to, either prevent its introduction, or contain it as soon as it is spotted for the first time. For this purpose we study the establishment of sentinel plantations in Roraima for the detection of potential insects vectors and cases of LYTS. Roraima state was recently invaded by several pests from the Caribbean, because its borders with countries strongly linked with the Caribbean (Venezuela and Guyana), is a main target of our projects.

**Keywords:** Phytoplasma, Insect Vectors, Sentinel Plantation.

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## Estratégia de RNA interferente para o controle de insetos-praga na agricultura

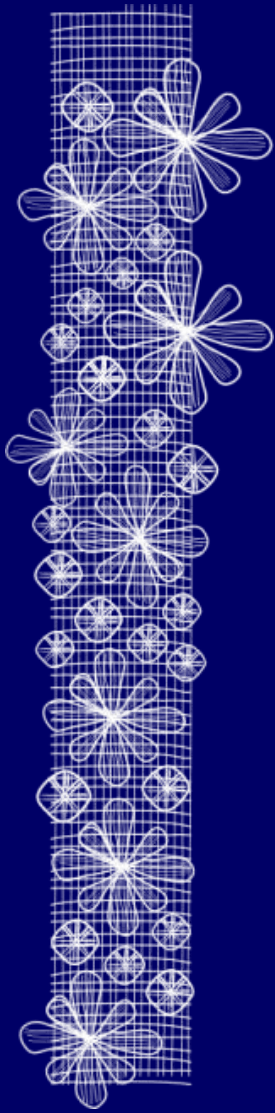
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RNA interference (RNAi) comprises a natural mechanism of gene regulation and antiviral defense system in eukaryotic cells, and results in sequence-specific degradation of RNAs. Recent scientific studies demonstrate the feasibility of use RNAi-based strategies to control pest and pathogens in plants. RNAi technologies are more environmentally friendly, as the technology provides greater specificity in pest targeting, which we called "Highly Specific Pest Control" (HiSPeC), which means, control of desired target specie, while reducing the potential negative effects on ecosystems and leaving beneficial insects and other organisms unharmed in crop ecosystems. It's important to point out that the breakthrough of the RNAi technology has other advantages and applications: (1) possibility to customize the product to control different insect pest; and (2) broaden his use in other crops to control, insect and pathogens; and (3) to protect beneficial insects. In this presentation, some research aspects and considerations that are important towards the development of RNAi-based strategies to control will addressed.

**Palavras-chave:** Silenciamento Gênico, Rnai, Dsrna.

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