CIRAD Invasive Species Initiatives in the Caribbean Basin

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CIRAD develops several initiatives on invasive plant pests and pathogens that are present in the Caribbean. These are primarily focused on *Ralstonia solanacearum*, Black Sigatoka, coconut lethal yellowing and viral diseases of sugarcane and banana. They include research activities, transfer of diagnosis techniques to plant protection and quarantine services and participation to surveillance networks, either existing or under construction.

Epidemiological studies are the key component of many of our research activities, which are often carried out in the frame of collaborative projects. This is best examplified by the surveys that were recently carried out in Grenada and that are in progress in St Lucia on banana Moko disease, whose causal agent is a specific strain of *R. solanacearum*. Analyses of collected samples lead to a better understanding of the epidemiology of the disease. A similar work carried out in Martinique on strains of *R. solanacearum* causing tomato bacterial wilt provided evidence that more aggressive strains have emerged, causing increased symptoms on tomato. Epidemiological studies were also carried out in Guadeloupe and Martinique on several pathogens affecting sugarcane, such as *Sugarcane yellow leaf virus* and leaf scald disease. They helped implementing strategies for controlling installed and emerging diseases and pest of sugarcane. Likewise, epidemiological and diversity studies carried out on coconut lethal yellowing, Black Sigatoka and *Banana streak viruses* helped establishing control strategies.

Diagnosis and monitoring tools and techniques are one of the major outputs of our research activities. Transfers of these tools and techniques towards plant protection and quarantine services of Caribbean countries are achieved through collaborative projects and courses. Such courses were recently organised in Guadeloupe in order to transfer techniques for the detection and monitoring of Black Sigatoka and the detection of several viruses infecting *Musa* spp e.g. These technological transfers are a key component of CIRAD's strategy to promote the control of pathogens in the Caribbean, in order to increase food security in the region.

CIRAD also plays an active role in several projects and global surveillance networks such as PANDOeR and the current USDA / CARICOM joint initiative for promoting plant health in the region through existing networks (CISWG, CISSIP). Its current projects involve the development of a regional Black Sigatoka surveillance and control network and a participatory database on major diseases of banana, coconut, horticultural crops, sugarane and yam.