

Banana and environment

Towards cleaner production in 10 years time

Harvested for twelve months of the year, banana (together with plantain) is a major foodstuff for hundreds of millions in the Southern countries and also a favourite fruit in the northern hemisphere. In international trade, dessert banana exports total sales of some 4.9 billion USD. The internationalisation of this fruit measured by the ratio volume

exported:volume produced is one of the largest in the agricultural world at 30% for banana against 20% for wheat. The world banana market is expanding strongly. Demand has increased rapidly for more than 30 years—from 3.9 million tonnes in 1960 to more than 16 million tonnes in 2007.

The limits of the productivist model of past decades

The intensification of the production process has been one of the answers of the sector to increasing demand in the Northern countries under satisfactory economic conditions. As in all tropical or temperate cropping systems, this intensification led to monoculture zones—in time and space—by concentrating a single crop on areas sometimes exceeding thousands of hectares. This productivist strategy has caused biological imbalances by concentrating pathogens specific to the crop. Banana growing, like other crops, is subjected to strong pest pressure. The control of fungal diseases

such as leaf spot diseases—especially Black Sigatoka—is best known. But it is not the only concern. Control of soil parasites (nematodes), banana borer weevils, viruses and Panama disease also receives the full attention of the industry and research centres.

These imbalances were managed for a long time—and often still are—by massive spraying of pesticides. Classic phenomena of resistance to these appeared, calling certain conventional control strategies into question. The cost impact of the use of pesticides is accompanied by growing awareness of its harmful effects on plantation workers, the environment and possibly consumers. Inflamed by past food and sanitary crises, public opinion in the Northern countries demanded stricter public and private regulations. This new awareness among growers and large operators and also retail distributors and consumers means that innovation is needed. The challenge is a simple one: conserve or even improve net return per hectare while reducing pesti-

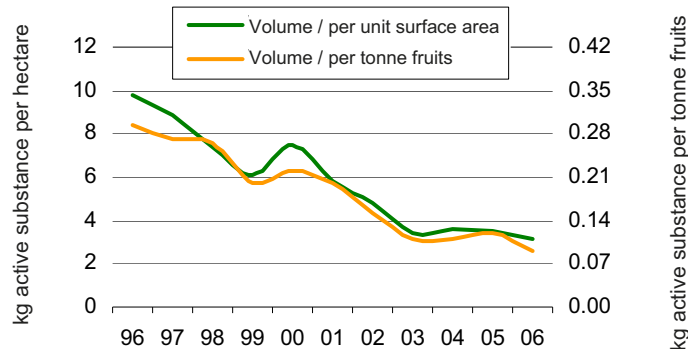
cide use—all this being in a context of strong international competition and regulations limiting the use of crop chemicals.

The PRPB project

A feasibility study project on an international programme for a reduction in the use of pesticides in intensive banana growing ('Pesticide Reduction Plan for Banana', PRPB) has been initiated by several research institutions (University of Wageningen, Bioversity International, CIRAD, Embrapa, University of Leuven, etc.) and is funded by the CFC (Common Fund for Commodities). This has been the framework of a preliminary study of the present situation with regard to pesticide use in banana plantations (2006-2007) conducted in several producer countries and based on surveys of national banana production experts. The first results presented at the end of 2007 in Costa Rica at a conference attended by banana professionals from a great number

A world initiative by research centres and banana producers may enable a considerable reduction in pesticide use in 10 years time. The concept has shown its validity in the French West Indies. Pressure from regulations and from society is now strong enough to encourage producers and the major players on the international market to innovate in this respect. There remains the question of convincing donors of the issues and the feasibility of the project.

Banana - Martinique
Evolution of the use of pesticides - Insecticides and nematicides



Source : Chabrier et al, Phytoma 2005, 584 (7-8)

of zones and various international research centres reveal considerable differences between regions and between countries. Differences of from 1 to more than 10 were observed with, for example, the quantities of active substance applied ranging from 7 kg per ha per year to more than 70 kg per ha per year depending on the production zone. The differences result first of all from differences in pressure from Black Sigatoka (*Mycosphaerella fijiensis*). They are also related to differences in the pressure of other pests (generally related to climate and especially rainfall and the length of the dry seasons), to the more or less virtuous cultural practices used by growers and finally the greater or less severity of national regula-

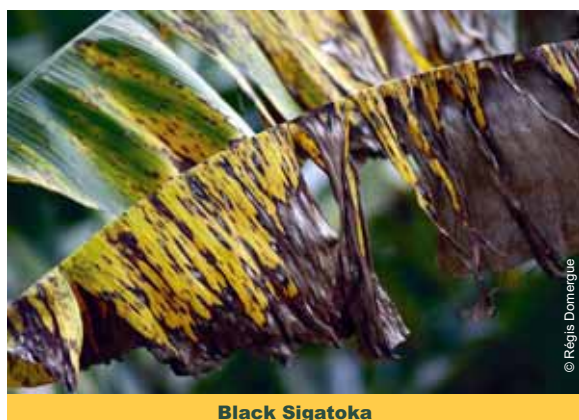
tions in producer and importer countries with regard to pesticide use.

French West Indies: precursors

In addition to the great variety of situations, the study confirms in the field that technical solutions have already made it possible to meet the challenges and produce dessert bananas while respecting the environment. Indeed, the production chain in the French West Indies has reduced pesticide use by more than 50% in the last decade (Chabrier *et al.*, Phytoma 2005, 584 (7-8)).

The West Indian banana production sector even announced on the occasion of the recent Fruit Logistica show in Berlin that it intends to continue its efforts by setting an ambitious target—a further 50% reduction in five to ten years time. Even if soil and climate conditions, pest pressure and the economic context vary from one zone to another, this experience demonstrates the feasibility of the approach. It is now the time to federate energy and ideas and assemble funding to build the future of international banana production ■

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Black Sigatoka

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