



Analysis of the multiple coffee pathosystem in the South Pacific

Epidemiological research on *Coffea arabica* (var. *Typica* and *Bourbon*) has been conducted in the Plant Pathology Laboratory at ORSTOM's New Caledonia Centre since 1991. The aim is to understand the functioning of the 'pathosystem', which comprises coffee, its main pathogenic fungi (*Hemileia vastatrix*, *Colletotrichum gloeosporioides* and *Cercospora coffeicola*) and the environment, in order to model their interrelationships. More specifically, the goal is to identify the environmental conditions which influence the dynamics of coffee diseases. Regular epidemiological surveys are carried out in *arabica* coffee plantations for this purpose. The biometric evaluations of these data take into account the spatial and temporal dimensions of the events occurring. The ultimate objective of this research is to use modelling to devise a decision-making tool, permitting a forecast of the risk of an epidemic in a defined environmental context.

This research programme is mainly performed in New Caledonia, but also includes a regional research dimension, with the complementary investigations being carried out in Papua New Guinea (Coffee Research Institute, Kainantu, Eastern Highlands Province) and Vanuatu (Tanna Island).

The experimental approach is based on monthly epidemiological observations carried out in 20 traditional coffee-growing plots, using specific pathological survey methods (leaf-by-leaf inspection, etc.) and environmental characterisation procedures (weather station, soil analyses, etc.).

In a given annual cycle, surveys have confirmed the existence of a mosaic of highly-diverse pathological situations (disease distributions, infection and mortality kinetics, etc.) within the experimental design.

Analyses reveal significant trends:

- Anthracnose emerges as being closely linked to edaphic factors such as high pH values, a good soil structure or low shade.
- High pH and shade values, and to a lesser extent, low altitude are the main factors influencing the behaviour of Cercosporiosis.
- Rust differs from the two previous diseases, in that it is more likely to occur in sites featuring low soil pH values, low rainfall, quite high minimum temperatures, high shade and high altitude.

The concepts and methodologies developed under this programme are now being disseminated in the region and training programmes are being conducted for our partners in coffee-disease work. These tools may be of interest to teams working on other crops for which pathogen incidence has become a serious source of concern.



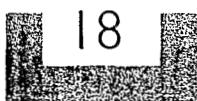
Improved seed-supply strategies for Pacific Island countries

The PRAP Seed and Planting Material Project (PRAP-3), in collaboration with the Asia and Pacific Seed Association (APSA) and the FAO-Danida project 'Establishment of an Asia and Pacific Seed Association', is organising a workshop on 'Improved seed-supply strategies for Pacific Island countries', to be held in Nadi from 25 to 29 November 1996. Participants will include heads of government agencies involved in variety testing, seed multiplication and distribution; private seed importers, retailers and producers; and NGOs involved in seed issues. It is considered essential for the success of this workshop that private entrepreneurs involved in seed supply participate actively.

Dr Mike Turner, a seed industry specialist from Edinburgh University, will visit Vanuatu, Solomon Islands and Fiji in August and September to prepare a position paper on 'Seed Issues in Pacific Island countries'. Dr Joe Cortez, Co-ordinator of International

Seed Programmes at Iowa State University, will present a paper on organising farmer collaboration in quality seed production and supply—formalising informal seed supply.

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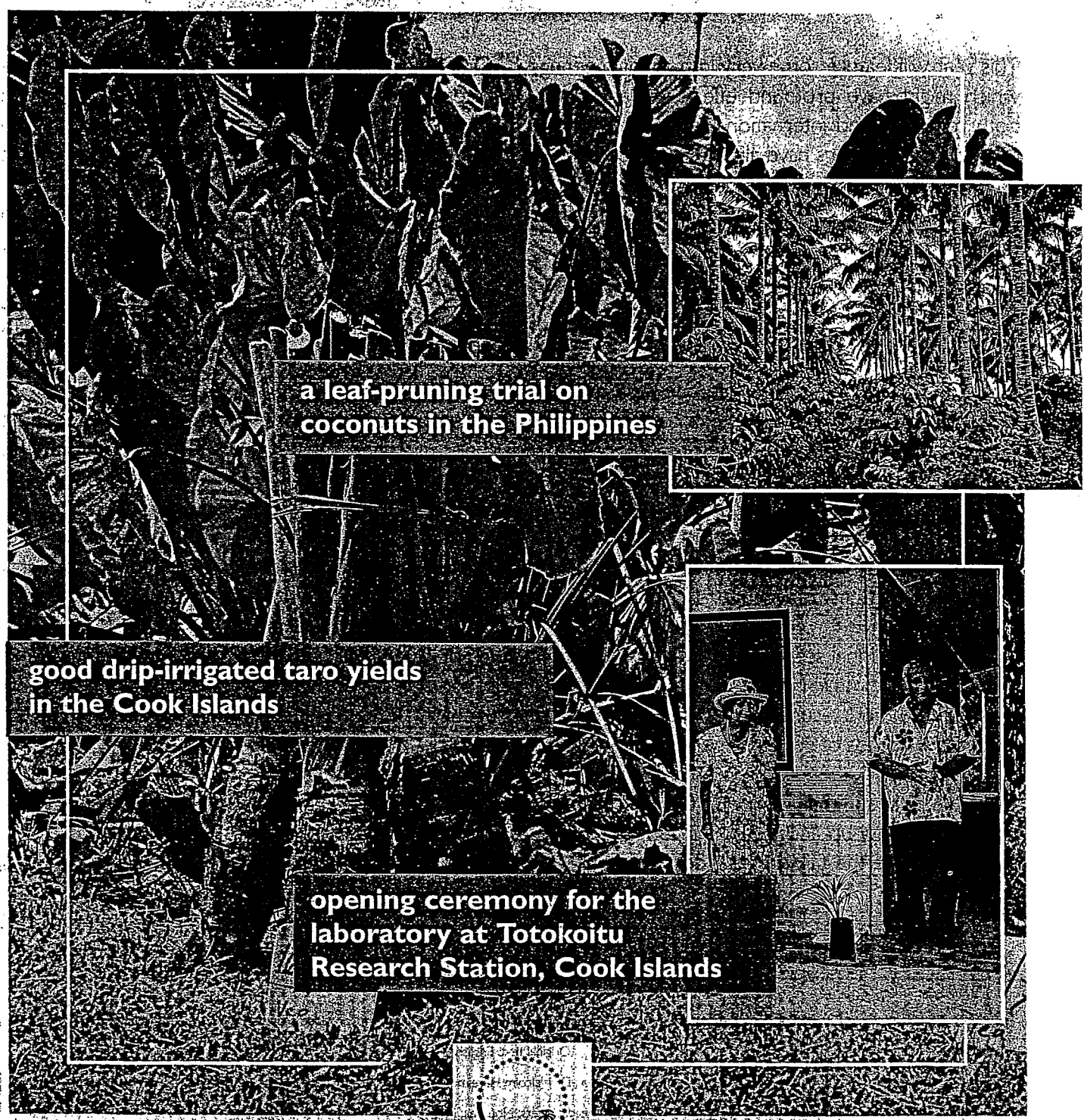
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coconuts in the Philippines**

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**opening ceremony for the
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