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PSEUDOMONAS SOLANACEARUM STRAINS IN THE NORTHERN PART OF TRINIDAD

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During our two visits in Trinidad (July and September 1968), we tried to identify and to characterize the *Pseudomonas Solanacearum* strains present in the North part of the country and causing the bacterial wilt of tomato, egg-plant and some varieties of Musa.

For the study of each strain, the work's scheme was :

— Sampling in the field of infected plants.

— Isolation of the bacterium in the laboratory.

— Characterization of the bacterial isolate by the study of the Pathotype and of the Biotype (1).

Our work permits now to affirm the existence of several different strains in the North part of Trinidad.

We hope therefore that the obtained results can be useful in the orientation of the varietal selection of tomato, egg-plant and varieties of Musa to control the bacterial wilt.

On the other hand, these results could interest the banana's planters which are concernedby the possible extension of the « Moko » disease.

VIRULENT STRAINS FOR THE SOLANACEOUS CROPS

In Trinidad, as in the other countries of the Caribbean zone, the losses caused by the bacterial wilt of tomato and egg-plant are obvious specially during the wet season.

However, these losses are less heavy than in the neighbouring territories of the French West Indies.

If the ecological conditions are excluded, that difference of the importance of the losses can be explained particulary because :

1° The tomato varieties grown in Trinidad are frequently small or medium-sized fruit, native varieties become tolerant to the disease.

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On the contrary, in Guadeloupe and in Martinique big fruit varieties (as Marglobe, Saint-Pierre, etc...) are the most estimated for the local market but also are the most susceptible to the disease.

2° The same strain (A1) is always found (see table 1 and map) in the different localities from the North part of Trinidad, except at Sangre Grande « El Reposo » Station (A3).

The virulence of this A1 strain is moderate and very much less high than that of the A1 strains of Guadeloupe and Martinique.

TABLE 1

Specifical characters of the virulent strains for the solanaceous crops in trinidad (north part)

Area of sampling	Host-plant	Pathotype *	Biotype *
Aranguez Market Garden estate.....	Tomato	A	1
Caura valley	Tomato Egg-plant	A	1
Saint Helena, Piarco	Tomato Egg-plant	A	1
Sangre Grande « El Reposo » Station...	Tomato	A	3

* : For the legend, see.

DIGAT (B.). Why and How to distinguish the *Pseudomonas solanacearum* strains, causal agent of the bacterial wilt of Solanaceous and Musaceous crops in the Caribbean zone ? Proceedings of the Caribbean Food Crops Society, 6th annual meeting, Trinidad, 1968, pp. 86-91.

VIRULENT STRAINS FOR THE MUSACEOUS

In Trinidad the incidence of the Moko disease is so high that the banana production is becoming very difficult. Moreover some plantain varieties, used only for shade, are now attained by the disease. It is noticeable that the other neighbouring islands (as Saint-Lucia Martinique, etc...) are not yet invaded by the pathogen.

Scientifically, it was interesting to know if there were only one or several strains for the Musaceous and also to know the distribution of the strains.

Practically, it was important to localize the strains in order to do a better choice of the varieties of Musa in function of the virulence of the present strains.

The results of our prospections are summarized in the map and in the Table 2. We found two virulent strains for Musaceous in the North part of Trinidad. These two strains are distinguishable by their different biotype (1 et 3).

1° The first strain, with biotype 1, seems to be the oldest in Trinidad. Its virulence is moderate and on the « Mysore » variety it don't cause fruit rot.

2° The second strain, with biotype 3, is very virulent for numerous varieties of Musa (Moko Fig, Giant Cavendish, Lacatan, Horse plantain, Mysore). In the « Mysore » variety it causes a severe fruit rot. Consequently its dissemination is ensured by the insects present on the infected fruits.

Some strains are virulent also for tomato see the table (C + *a*, *c* + A).

TABLE 2

Specifical characters of the strains virulent for the musaceous in Trinidad (north part)

Area of sampling	Host-plant	Pathotype *	Biotype *
La Réunion Trinidad Government Cocoa propagation unit	Musa « Myrose »	C + *a*	3
Las Lomas	Musa « Moko Fig »	C	3
Matura estate	Musa « Giant Cavendish »	C	3
Matura estate	Musa « Lacatan »	C	3
Sangre grande « El Reposo » Station	Musa « Horse plantain »	c + A	?
Sangre grande Sainte-Marie	Musa « Mysore »	c + A	1

* For the legend, see as table nº 1.

SUMMARY

A survey was made of the *Pseudomonas Solanacearum* strains present in the Northern part of the Island. Bacterial wilt of tomato is less severe than in French West Indies. The isolated strains are less agressive on tomato than strains from Martinique and Guadeloupe, they belong to the same type A1. The varieties of tomato grown in Trinidad, producing little fruits, are also somewhat tolerant to the disease.

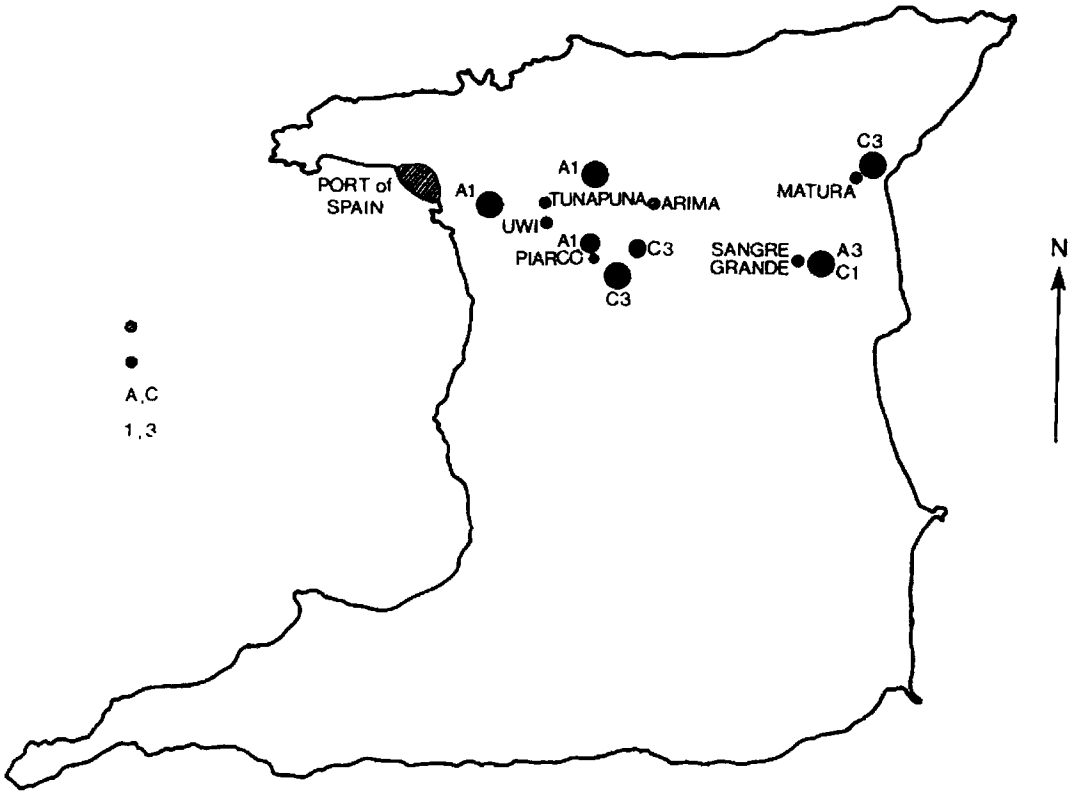
On the contrary were found on banana (varieties Lacatan, Moko fig, giant Cavendish, and especially Mysore, very sensitive) strains of B1 and B3 types. The B3 strain causes a very severe disease on Mysore banana, with fruit rot, and can be disseminated by insects. Such strains are unknown in Santa-Lucia, Martinique, Guadeloupe.

RÉSUMÉ

ETUDE DE DIVERSES SOUCHES DE PSEUDOMONAS SOLANACEARUM DANS LE NORD DE TRINIDAD

Une enquête a été réalisée sur les souches de *Pseudomonas Solanacearum* présentes dans le Nord de l'île. Sur tomate, le flétrissement bactérien est moins grave qu'aux Antilles françaises. Les souches isolées sont moins agressives sur tomate que celles de Martinique et Guadeloupe, elles appartiennent au même type A1. Les variétés de tomates à petits fruits cultivées à Trinidad sont d'ailleurs tolérantes.

Au contraire, sur bananiers (var. Lacatan, figue Moko, giant Cavendish et surtout Mysore, très sensible), ont été isolées des souches virulentes de type C1 et C3. Les souches B3 provoquent sur Mysore une très grave maladie avec pourriture des fruits et peuvent être disséminées par les insectes. De telles souches sont inconnues à Sainte-Lucie, en Martinique et en Guadeloupe.



Pseudomonas solanagerum strains in Trinidad.
○ Chils and towns.
● Infected areas
A, C Pathotypes
1, 3 Biotypes.