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MAIZE VIRUS AND VIRUS-LIKE DISEASES IN FRENCH WEST INDIES

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In French West Indies maize is not cultivated in large surfaces. Nevertheless in 1969 *Messiaen* et al, observed the virus diseases. Since this time, these diseases have not been studied. Since 1975 severe attacks of virus diseases on maize have been observed, However.

SYMPTOMATOLOGY.

Distinction between different viruses on the base of disease symptomatology is very difficult. Yet, However our observations permit to distinguish four types of symptoms which approximate those described by Castillo-Loyza, Exconde, Fajemisin, Gamez, Martinez-Lopez, Lastra. (1976).

These symptoms are:

Stripes regular and continuous,
Stripes irregular and discontinuous,
Clear bands,
Stunting and deformation,

(fig 1)

(fig 2)

(fig 3)

(fig 4)

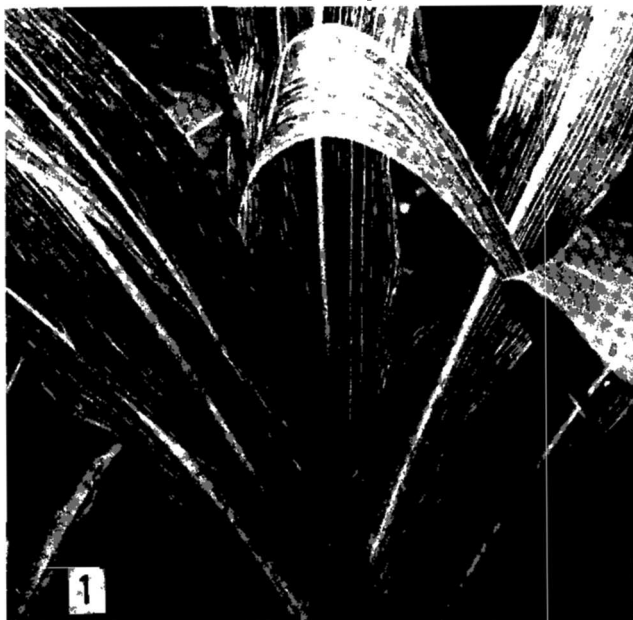


Fig 1 Maize plant infected, stripes regular and continuous.

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Fig 2 Maize plant infected, stripes irregular and discontinuous.



Fig 3 Maize plant infected, clear bands.



Fig 4 Stunting and deformation.

VECTORS.

Peregrinus maidis is present in French West Indies Bonfils et Delplanque 1970) and *Dalbulus maidis* (DeLong et Wolcott) has been observed in Guadeloupe only once this year (Bonfils, personal communication). The first species of leafhopper is numerous in healthy or diseased maize crops.

TRANSMISSION OF VIRUS DISEASES.

Forty infected samples of many varieties of maize and sorghum were tested by mechanical transmission but did not succeed. Young infected samples of maize colonized by the leafhoppers *Peregrinus maidis* were put in a cage with about 15 seedlings of maize. After 18 days plants showed to be infected.

PLANTS HOSTS.

In Guadeloupe *Rottboellia exaltata* L (Graminaceous) is often infected. In Venezuela Lastra (1976) describes this plant as a host of Maize Mosaic Virus (MMV) and Maize White Leaf Virus (Hoja Blanca del Maiz). But this plant is a host of Maize Dwarf Mosaic Virus, (MDMV) (Martinez-Lopez 1976) Maize Streak Virus (MSV) (Guthrie 1976) and Corn Stripe Virus (CSV) too (Exconde 1976). *Pennisetum purpureum* is another graminaceous plant which is rarely been found infected in Guadeloupe. The *Pennisetum* genus perhaps infected with Maize Chlorotic Dwarf Virus (MCDV) (Nault and al 1976) and Sugarcane Mosaic Virus (SCMV) (Sutabutra and al 1976)

RESISTANCE.

The local varieties of the Carribeans seem less susceptible than European varieties to the different viruses. The varieties Revolution and Mayorbella were observed to be tolerant or resistant to the maize viruses like in Guadeloupe (by Messiaen, Jacqua in 1974, personal communication).

At present studies are carried out to determine which viruses are responsible for the diseases of maize.

REFERENCES

- Bonfils J. et Delplanque A. 1971. Distribution des principales cicadelles des prairies aux Antilles Francaises (Homoptera).
Ann. Zool. Ecol. anim. 3 (2), 135-150.
- Castillo-Loayza J. 1976. Maize Virus and Virus-Like Diseases in Perou.
- Exconde O.R. 1976. Viral Diseases of Maize and National Programs of Maize Production in the Philippines. Proceedings International Maize Virus Diseases Colloquium and Workshop, O.A.R.D.C. Wooster. (USA)
- Fejamisin J.M. and Shoyinka S.A. 1976. Maize Streak and Other Maize Virus Diseases in West Africa. Proceedings International Maize Virus Diseases Colloquium and Workshop, O.A.R.D.C. Wooster. (USA)
- Gamez R. 1976. Leafhopper transmitted Maize Rayado Fino Virus in Central America. Proceedings International Maize Virus Diseases Colloquium and Workshop, O.A.R.D.C. Wooster. (USA)
- Guthrie E.J. 1976. Virus of Maize in East Africa.
Proceedings International Maize Virus Diseases Colloquium and Workshop, O.A.R.D.C. Wooster. (USA)

Maize -- Pests, diseases and weeds.

- Lastra R. and Trujillo G. 1976. Enfermedades del maíz en Venezuela causadas por virus y microplasmas.
Agronomía Tropical 26 (5), 441-445
- Lastra R. 1976. Maize Mosaic and Other Maize Virus and Virus-like Diseases in Venezuela. Proceedings International Maize Virus Diseases Colloquium and Workshop, O.A.R.D.C. Wooster. (USA)
- Martinez-Lopez G. 1976. New Maize Virus Diseases in Colombia. Proceedings International Maize Virus Diseases Colloquium and Workshop O.A.R.D.C. Wooster. (USA)
- Messiaen C.M., Quiot J.B. and Jailloux F. 1969. Nécessité d'adaptation au climat et de tolérance aux maladies pour les variétés de maïs destinées aux Antilles. CR. 7e Congrès CFCS. Martinique Guadeloupe 339-341
- Nault L.R. Gordon D.T. Robertson D.C. and Bradfute O.E. 1976. Host range of maize chlorotic dwarf virus. Plant Dis. Reporter 60 (5), 374-377
- Sutabutra T. Kornkanhaeng P. Sirithorn P. and Kositaratana W. 1976. A Mosaic Virus Disease of Maize in Thailand. Proceedings International Maize Virus Diseases Colloquium and Workshop, O.A.R.D.C. Wooster (USA)