A NEW DISEASE OF COCOA IN KERALA

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A new disease of cocoa was observed at the District Agricultural Farm, Koothali, Calicut District during February, 1979 on 2-7 year old Cocoa plants of Forastero type. The cocoa plants are grown under established coconut plantations. All the plants are raised under identical conditions of management.

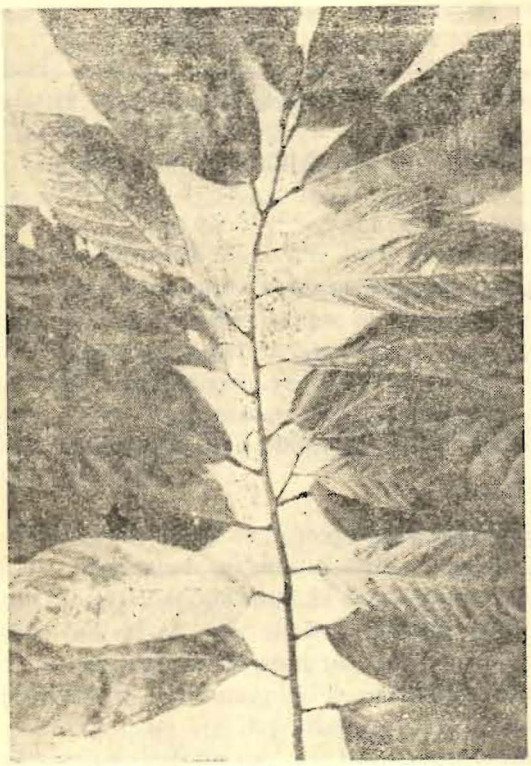

Fig. 1.—*Affected fan branches showing typical symptoms of sickling and interveinal chlorosis of leaves.*

Symptoms:—In the farm, the diseased plants were observed in a compact block of about one hectare area. Almost all the plants in this block are diseased. However, the indensity of disease varied considerably. The symptoms (Fig. 1 & 2) of the disease were observed on cocoa plants of all age groups. The initial symptom was the appearance of small chlorotic patches between the veinlets on newly formed leaves. Subsequently, a typical interveinal chlorosis developed. The diseased leaves were very narrow in proportion to length and in some plants leaves showing 'shoestring symptom' was observed. The margin of affected leaves were often wavy and under severe conditions affected leaves resembled a sickle. There was no reduction of marked increase in the number of leaves on diseased plants. However, since the internodal distance was reduced, the top of the affected plants gave a bushy appearance. In some cases the diseased plants put forward some healthy leaves in between the diseased ones. Flowering and fruit setting were considerably reduced in diseased plants.

Fig 2.—*Fan branch showing healthy and effected leaves occurring intermittently.*

Neither coconut trees nor other weeds grown in the area where the diseased cocoa plants were present showed symptoms resembling those observed on cocoa plants.

From the symptoms, the disease appeared to be due to virus infection or nutritional disorder. However, sap transmission and graft transmission were not successful. Symptoms similar to those observed here were observed by Evans & Murray (1951) on cocoa plants grown on zinc deficient soil. Spraying the affected plants with 1 to 1.5 per cent solution of zinc sulphate at three months interval may therefore be helpful to correct this disorder.

(*Contd. on Page* 20)

Production of Cardamom seedlings.

During the current season about 17.70 lakh Cardamom seedlings are estimated to be available in the Board's nurseries in Kerala, Tamil Nadu and Karnataka for supply to growers. In addition another 4.74 lakh seedlings are expected to be available from the certified nurseries. The demand for Board's seedlings from growers was about 28.75 lakh during the season. The quality and acceptability of Board's seedlings among growers is the main reason for this rush for seedlings.

Improvement of Cocoa production and primary processing.

The FAO contribution for the project is US $ 41,000 for a period of nine months from March, 1980.

The objective of the project is to investigate the cause of the low productivity and quality of cocoa beans in Kerala and Karnataka States and to identify and introduce suitable planting material, demonstrate improved practices of cultivation and primary processing and train counterparts in these skills.

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ACKNOWLEDGEMENT:

The authors express their grateful thanks to Dr. U. P. Bhaskaran, Director of Research and Dr. P.C.S. Nair, Associate Dean, College of Horticulture for encouragement. Authors also thank Officer in Charge of District Agricultural Farm, Koothali for granting permission to conduct studies in the farm.

REFERENCES:

EVANS, HAND MURRAY, D. B. A. colour-illustrated guide to the Diagnosis of mineral deficiencies in cocoa. Report on Cocoa Research ICTA, Trinidad, 1945-51.

How nutritive are chocolates.

In normal amounts, chocolate provides a number of nutrients the body needs daily. A milk chocolate bar weighing 1.5 ounces contains at least four per cent of the U.S. Recommended Daily Allowance (RDA) of protein. The bar also provides two per cent of the RDA of thiamine, four per cent of the RDA of riboflavin, six per cent of the RDA for calcium and two per cent of the RDA for iron. Some chocolate bars with peanuts or almonds can provide up to 15 per cent of the RDA of protein and up to 10 per cent of the RDA for certain vitamins.

—*Chocolate Manufacturers Association of the U.S.A. INC.*