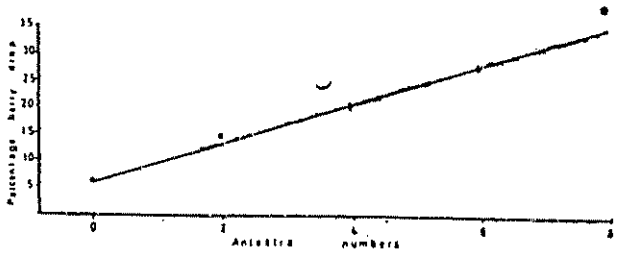

Fig 1.—*Effect of* Antestiopsis lineaticollis *numbers on berry drop.* Item description

for 2, 4, 6 and 8 bugs per cage respectively than the control, a very highly significant simulated berry drop that resulted from the infestations, reduced harvested and processed bean weights. Harvested and processed weights differed narrowly despite the fact that initial differences in berry numbers were 182, 211, 314 and 356 for 2, 4, 6 and 8, *A. lineaticollis* per cage respectively. The initial differences were obtained by subtracting from each predetermined berry number per branch, the 511 for no infestation. Shedded berries due to *A. lineatticollis* (Fig. 1), appeared to be among the major determinants for differences that existed in harvested and processed weights for the infestation levels used in the present study. The low economic thresholds already established for *A. lineaticollis* (3, 4) would appear to be justificable. Although it may appear unlikely that 1 or 2 bugs will probe and finally feed on the many coffee berries produced per trae, the high fecundity of *A. lineaticollis* (1, 3) enhances the probability of many green berries to be at risk during any infestation. There was a positive correlation between the percentage of ripe berries and processed weights at more than 2, *A. lineaticollis* per cage ($r = 0.409$).

Summary

Caging *A. lineaticollis* males and females under populations of 0, 2, 4, 6 and 8 per cage on green coffee berries resulted in 7-35 per cent berries shed under the above different populations. The berries were shed due to a mean of 7.69 wounds per probed berry. Although 182, 211, 314 and 356 more green berries were allowed, for 2, 4, 6 and 8 bugs respectively than the control, a very highly significant berry drop led to minimal variations in weights of harvested berries, 583 - 617.2 gm (mean 606.36 gm) and processed beans, 87 - 112 gm (mean 103.20 gm); as well as the proportion of processed weights to harvested weights, 14.92 - 18.87 per cent (mean 17.01 per cent). A small but positive correlation, $r = 0.409$ between percentage weights of ripe berries and *A. lineaticollis* infestation levels used was noted.

Acknowledgements

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Giemsa C-banded somatic karyotype of maize stock 'Sikkim primitive-1"

Sumario. El padrón c-banding de cromosomas somaticos de una raza de maiz "Sikkim primitive-1" fue analizado empleando la técnica de giemsa. Los diez pares de cromosomas mostraron distintas bandas, y la mayoría de estas bandas estaban localizadas en posiciones terminales y sub-terminales, aunque las bandas intersticiales no estaban totalmente ausentes. En las células en interfase fueron observados cromocentros intensamente coloreados.

There are several reports on chromosome banding in animals and plants. The various banding techniques have aided in the identification of individual metaphase chromosomes in the mitotic complement (2, 3). In the present paper, c-banding pattern of a maize stock collected from Sikkin is analysed and c-banded karyotype is presented.

Materials and methods

The seeds of maize stock 'Sikkim primitive-1' were placed on damp filter paper petri dishes and grown for 24 hrs. at 25°C, 12 hrs. at 4°C and back at 25°C till the root growth. The root tips of 0,5 - 1,5 cm length, were pretreated with 0,1 per cent colchine for 3 hrs and fixed in acetic alcohol (1:3) overnight. After washing in distilled water, the fixed roots were treated with enzyme (500 mg of pectinase + 500 mg

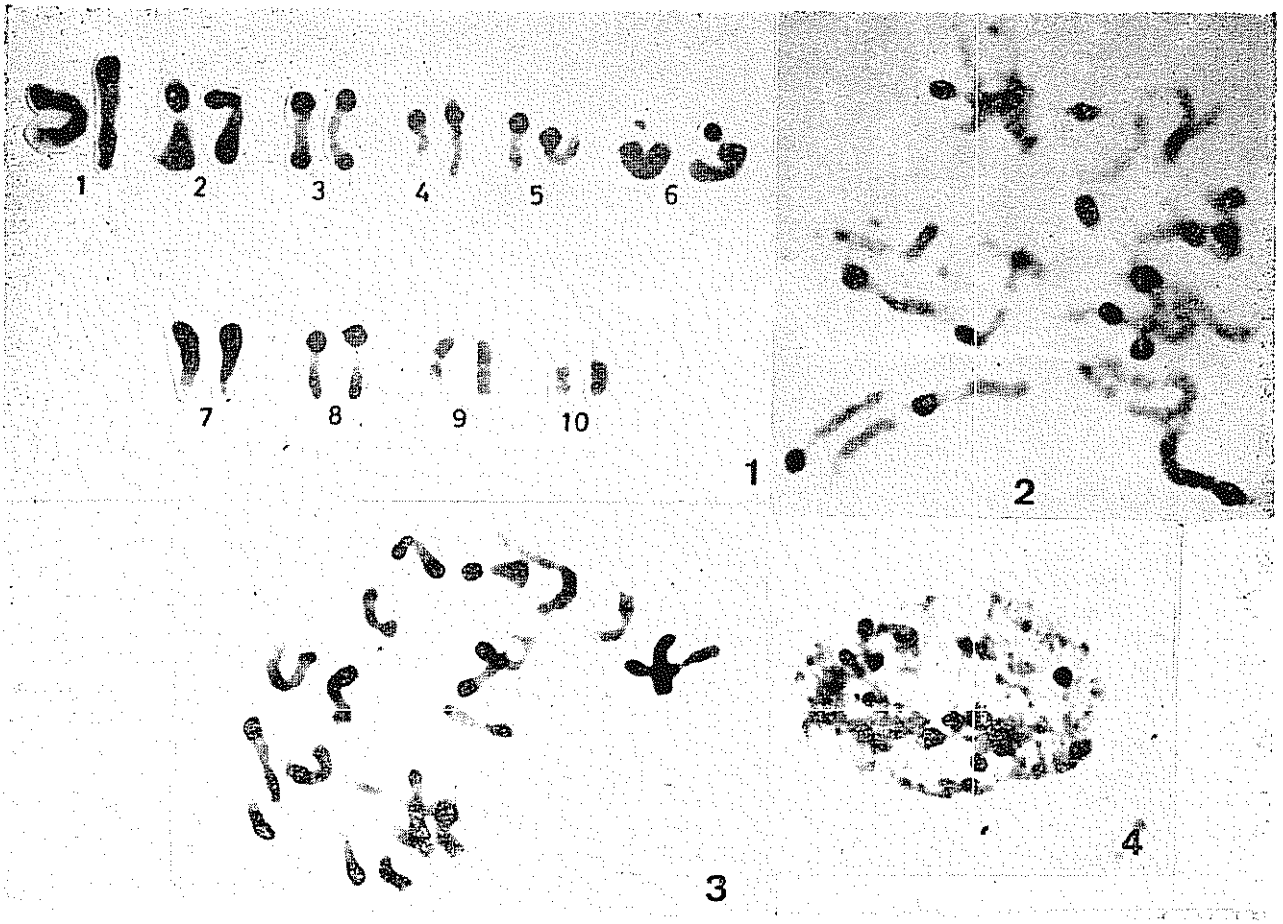

Fig 1-4.—1. *C-banded somatic karyotype of maize variety Sikkim primitive-1 2-3 C-banded chromosomes at prometaphase and metaphase stages. 4. Chromocentres in interphase cell.*

cellulase + 10 c.c distilled water) for 1 hour, re-washed in distilled water and root squashes were made in acetic acid. The further processing (denaturation in barium hydroxide and renaturation in s s c solution) and giemsa staining was done according to the method of Gill and Kimber (1). To avoid errors due to differential contraction of chromosomes in different cells, the c-banded karyotype was formed of the chromosomes from a single well spread methaphase cell and the banding pattern was verified from various cells. Feulgen squashes were made adopting the standard technique and the feulgen stained metaphase karyo type was used as an aid for the formulation of c-banded karyotype.

Resuts and discussion

By emploking the giemsa staining technique a good c-banding was obtained. It is observed from the c-banded prometaphase and metaphase chromosomes (Fig. 2 and 3) that most of the prominent bands are located at terminal and subterminal position though interstitial and centrometric bands are not altogether absent. Based on the position of the centromere, arm lengths and banding pattern, the individual chromosomes of the somatic complement were identified and grouped in 10 pairs (Fig. 1). The chromosome I has a large darkly stained terminal band on one arm and sub-terminal band on the other arm. Chromosome 2 has one distinct band on each arm of the chromosome covering the whole length excepting the region near the centromere. The chromosome 3 is characterised by two distinct terminal bands one on either end and the rest of the chromosome is lightly stained. Chromosome 4 has one sub-terminal band which is darkly stained and the rest of the chromosome is faintly stained. The chromosome 5 has a darkly stained terminal band and two faintly stained interstitial bands. Chromosome 6 is marked by a distinctly stained satellite (secondary constriction) and a large band on one arm and two smaller bands at interstitial and subterminal position respectively. The chromosome 7 has two darkly stained bands fusing together and covering a major lenght of the chromosome. Chromosome 8 has distinct terminal band on one arm and two darkly stained bands fusing together on the other arm. The chromosome 9 has four equally stained bands intercalated with lightly stained regions. The chromosome

10, the smallest in the complement, has two stained regions.

Besides the c-banding observed in the mitotic chromosomes, the interphase cells show distinctly stained globular chromocentres (Fig. 4). By using the giemsa method, dark stained bands were obtained in several positions on the chromosomes of teosinte and maize varieties from Brazil (4). According to these authors the number and position of these bands corresponds to that of pachytene knobs. The present study gives a similar indication and if so, the giemsa method is less time consuming compared to the pachytene analysis and can be utilised for the analysis of knob polymorphism and evolutionary studies of maize. The identification of individual chromosomes of materials of diverse origen will help accelerating these studies.

Abstract

C-banding pattern of the somatic chromosome of a maize stock "Sikkim primitive-1" was analysed employing giemsa staining technique. The ten pairs of chromosomes show distinct banding pattern, where majority of the bands are located in terminal and subterminal positions, though interstitial bands are not altogether absent. Well stained chromocentres were observed in the interphase cells.

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Thysanopteros en Pinus radiata **en Chile**

Abstract. In a survey of insects carried out during the summer of 1975, in **Pinus radiata** nurseries in the Tenth Region (Chile), many seedlings with needle crinkle and apical absortion caused by thrips were found. These insects were identified as **Ihrips tabaci** and **Heliothrips haemorrhoidalis**. The first was found in all of the nurseries, but the second only in one of them. Samples collected determinated a production loss of about 23 per cent due to these insects.

A partir del año 1973 se menciona en nuestro país la presencia ocasional, en viveros de pino insigne, de insectos (thrips) pertenecientes al Orden Thysanóptera. Estos agentes se suponía realizaban su acción dañina en la zona apical de las plántulas afectadas.

Durante el verano de 1975 se llevó a cabo una prospección de insectos en los nueve viveros estatales, de Pino insigne, de la Décima Región (39° a 45° Latitud Sur) con la finalidad de obtener una visión global de los problemas entomológicos que aquejaban a esta especie. En esa ocasión se detectó la existencia de una gran cantidad de plántulas que presentaban encarrujamiento de las acículas apicales (Fig. 1) atribuyéndose el daño en esa oportunidad por primera vez como ocasionado por insectos thysanópteros.

Parte del material entomológico colectado en la prospección, fue enviado a especialistas para obtener su identificación; estos determinaron la existencia de

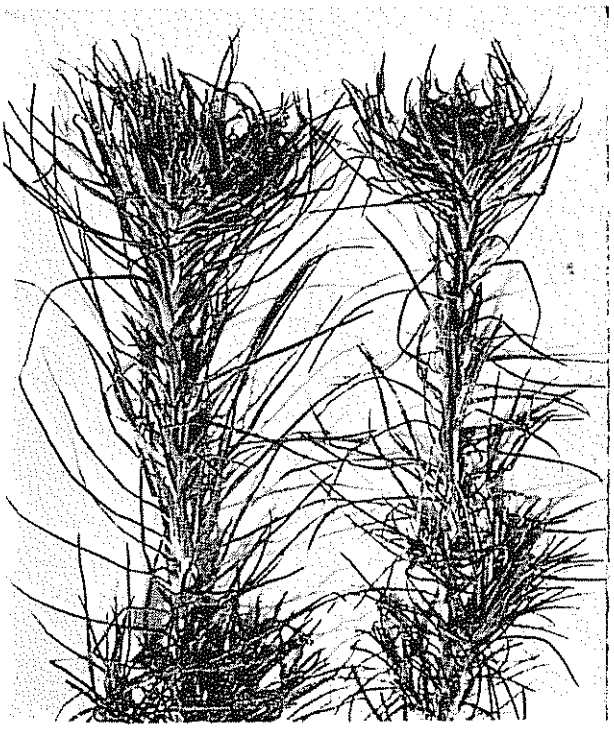

Fig. 1.—*Encarrujamiento apical, en plántulas de* Pinus radiata, *ocasionado por* Thrips tabaci *y* Heliothrips haemorrhoidalis