

ABSTRACT

EPIDEMIOLOGY OF WITCHES' BROOM DISEASE OF COCOA
(THEOBROMA cacao L.) IN TRINIDAD

STEVE MOHAN

Epidemiological experiments on witches' broom disease of cocoa (Theobroma cacao L.) in Trinidad were conducted and data collected over a period of two years were analysed. Field observations were carried out at Santa Cruz valley on various aspects of the host plant, the pathogen and the environment.

Basidiocarp production by the pathogen Crinipellis perniciosa Stahel (Singer) was restricted to the wet season from week 25 to 52 (June to December). They were produced mainly on necrotic vegetative and cushion brooms.

Rainfall appeared to be the principal environmental factor associated with basidiocarp production. The quantity and distribution of the rainfall having different effects on the productivity of suspended vegetative brooms from one year to the next.

Patterns of host growth were consistent between the two years and within the ten experimental trees for shoot growth, flowering and pod production.

The flushing pattern for the two Trinidad Selected Hybrids (TSH 919 and 1188) showed that peaks of flushing occurred primarily during the dry season, from week 01 to 23 (January to May/June). Quantitative assessments of vegetative infection were quite low. This was attributed to the small amounts of susceptible vegetative tissue available for infection when basidiocarp numbers were high.

Cushion activity and flowering peaked during week 28 to 35 (July/August) and declined towards the start of the dry season. Infection on cushions reached as high as 23 % on individual trees. The TSH 919 clone appeared to be more susceptible to cushion infection than the TSH 1188 clone.

Pod set and development took approximately 20 to 22 weeks and pod infections averaging up to 34 % were noted.