

weight of the seedling. Girth at collar as the most important selection characters has been reported by Menon and Pandalai (1958) also. Hence, the heritability of these physiological factors suggest that in WCT palms the efficiency of dry matter production is a heritable factor. Since it has already been shown that the girth at collar is mostly contri-

buting to seedling vigour, the suitability of choosing girth at collar alone as the seedling selection character is worth exploring.

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Seasonal Fluctuation of Population and Habits of the Adults of *Longitarsus nigripennis* Mots. on Black Pepper*

The pollu beetle of black pepper (*Piper nigrum* L.) was earlier reported to be present in the field upto the harvest of pepper berries and absent thereafter till the early monsoon rains. The adults were suspected to go under aestivation during the period (Ayyar, Susainathan and Muliyl, 1921; Rao and Ramaswamiah, 1927). The additional information obtained on the occurrence of the pest in the field during different seasons in two different

tracts of Kerala is presented in this paper.

The observation on the occurrence, habits and population of the adults of *L. nigripennis* was made at two locations, viz., Calicut and Kottayam representing two agroclimatic conditions. The fields were visited at regular intervals for this purpose. Populations were estimated in terms of the counts of adults found on 200 random leaves at each time of

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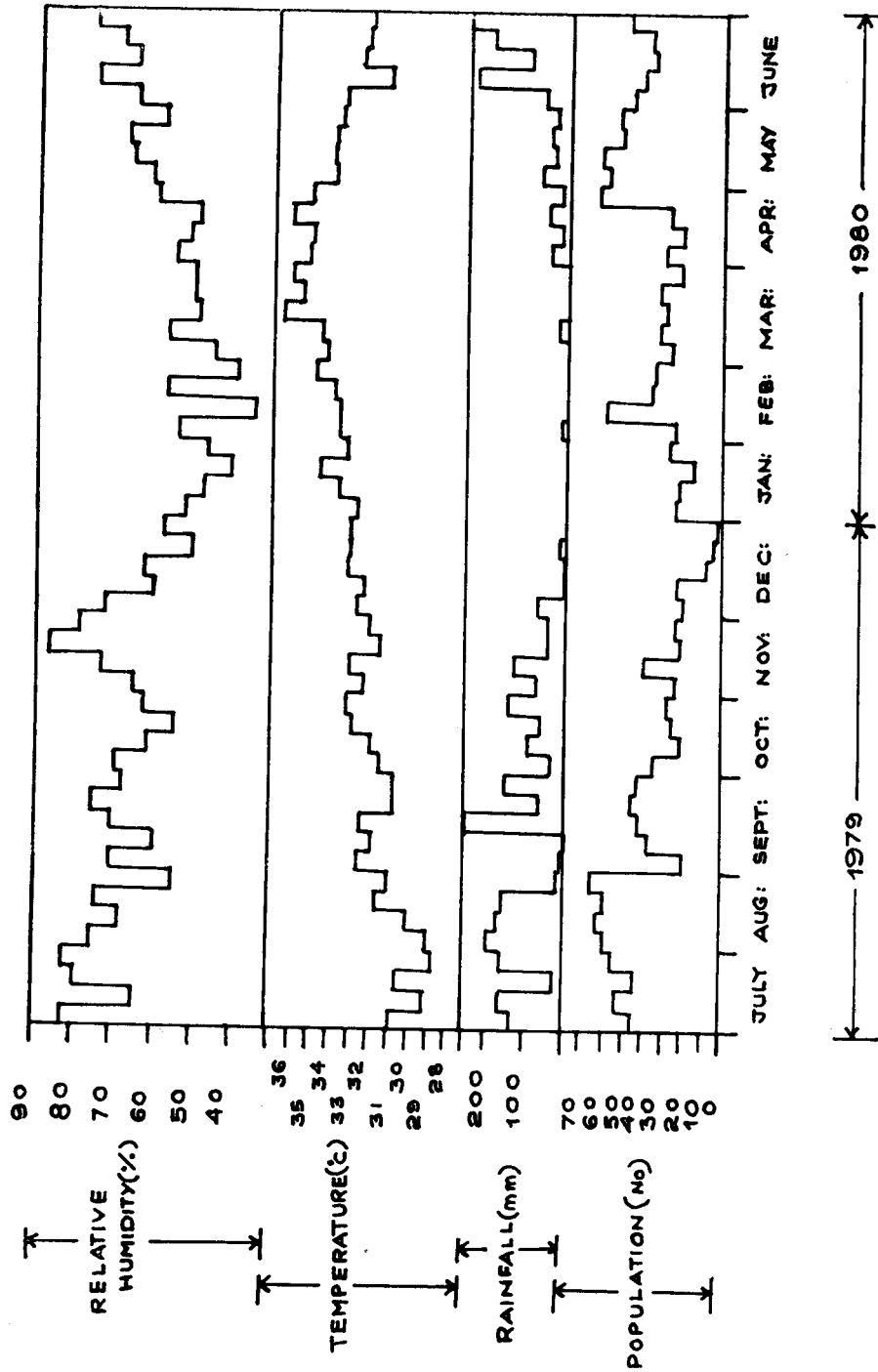


Fig. 1. Population fluctuation of adults of *L. nigripennis* in relation to different climatic factors (Kottayam)

the visit. The pepper cultivar under these studies was 'Arakkulamunda' at Calicut and 'Karimunda' at Kottayam. Meteorological observations were also recorded.

The adults of *L. nigripennis* were present in the field throughout the year. In the Kottayam tract (Fig. 1) during the period of maturation and harvest of the crop (December-January) and thereafter

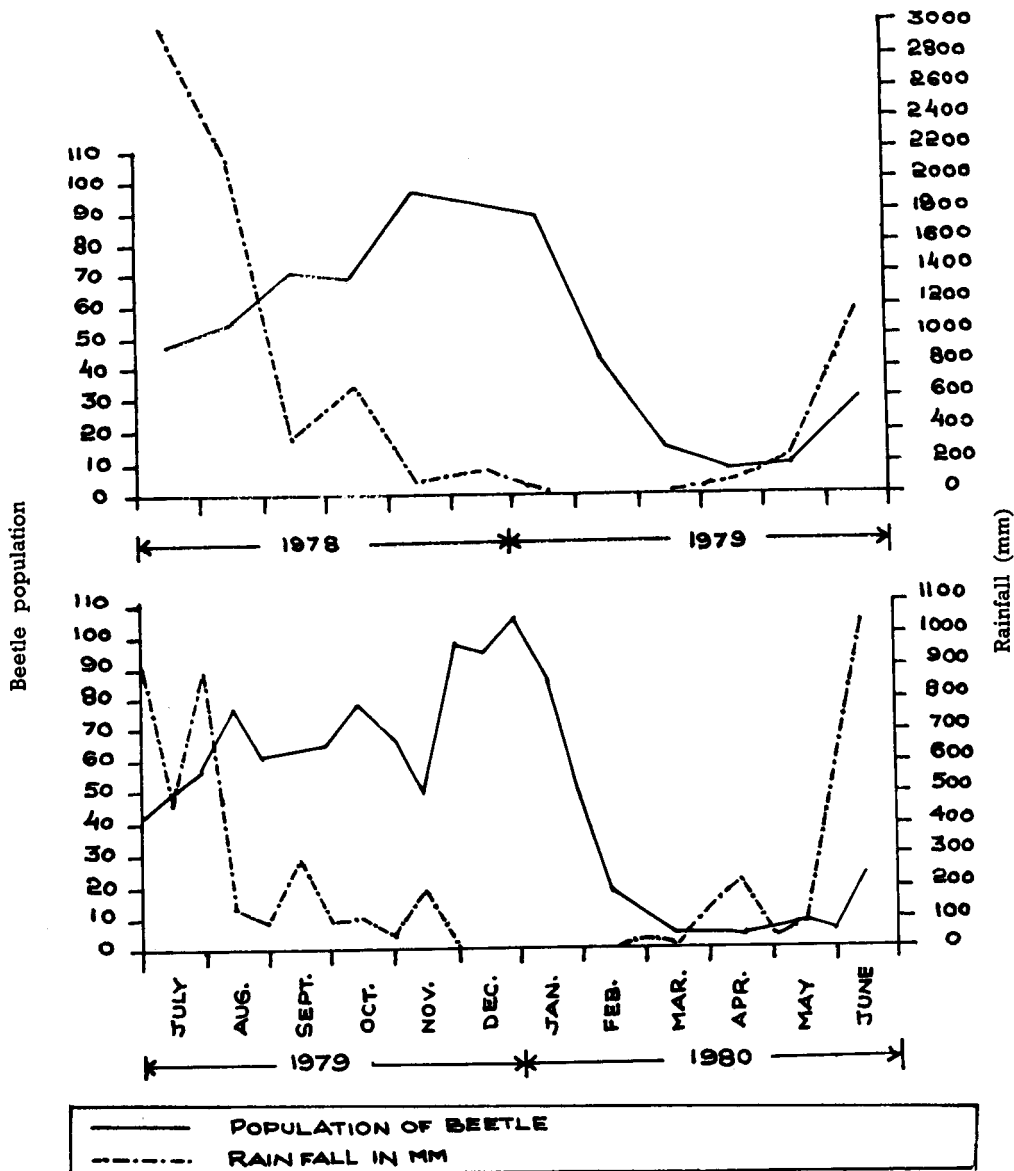


Fig. 2. Population fluctuation of adults of *L. nigripennis* during different months in relation to rainfall (Calicut)

the adult population in the field was very low. The beetles sustained themselves by feeding on the green surface tissues of mature leaves. During these warm months the adults could be seen clustered on the under surface of the leaves especially in the shaded places of the plantation. No mating or egg laying could be observed during this period and there appeared to be a suspended reproduction which could be attributed to adverse climatic and nutritional factors.

When new flush was put on with the premonsoon showers in April–May, there was a sudden triggering of the activities of the beetle. They clustered on the tender leaves and fed on them voraciously. Mating pairs could be seen in good numbers and the females laid eggs on the growing tips of the new fruiting vines. When spikes appeared, the beetles fed on them and within them as well as within the tender berries. The population appeared to be built up rapidly during this period and damages due to feeding and breeding activities to the plant parts were in evidence upto September–October, thereafter there was a gradual reduction in the pest population which coincided with the maturation of the crop and harvest.

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In the Calicut tract (Fig. 2) the adult population remained high in the field upto the end of January, there being a decrease thereafter and the population remained low till early June followed by an increase from July onwards.

Correlation studies showed that the coefficient of correlation of -0.33 between adult population and temperature was significant. The high temperature affected the population adversely (Fig. 1). The coefficient of correlation between pest population and relative humidity was 0.05 and this was not significant showing that the variation in humidity had no effect on the population density of the pest. The coefficient of correlation between population and rainfall was 0.35 which was significant. Rainfall was thus a favourable factor for the population build up of the pest which did not appear to be a direct correlation. Rainfall helped the plants to put out new flushes of tender leaves and fruiting parts provided adequate feeding and breeding media. The anomalous observation of high population during the dry months of November to January in Calicut might be due to the availability of adequate food media for the maintenance of a high population.

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