

## SYNOPSIS

Investigation on seasonal occurrence of blowflies and fleshflies in Calcutta revealed that the differences in the distribution of blowflies at different trapping sites are due to the quality and quantity of breeding sources of blowflies at different seasons of the year. Chrysomya megacephala formed dominant species at all the trapping sites of the study area and was trapped throughout the seasons. The seasonal prevalence of blowflies and fleshflies showed bimodal peak of abundance in the annual population during the present study. Maximum number of blowflies occurred during winter seasons as the climatic condition is favourable for the activity of blowflies in the study area at that time of the year.

Diurnal activity of blowflies was studied hourly, from morning to evening, in the study area during summer and winter months in continuous daylight. Observations on diurnal activity of blowflies revealed that Chrysomya megacephala and Chrysomya rufifacies showed bimodal and unimodal diel periodicity curve during summer and winter months respectively. Similar diel periodicity curve, although not so sharp as in Chrysomya megacephala and Chrysomya rufifacies, was formed by Lucilia cuprina and Hemipyrellia ligurriens during the present study. Important ecological factors responsible for this diurnal activity of blowflies were high temperature and low

(b)

relative humidity. Light intensity and bright sunshine might also play a significant role during the activity of blowflies in the study area.

An attempt has been made to study the synanthropic index in respect of blowflies in West Bengal at three different latitudes, the southern part of the study area was Calcutta ( $22^{\circ}$ - $32^{\circ}$ N); while the northern part was represented by Siliguri town ( $26^{\circ}$ - $44^{\circ}$ N), data for which was obtained earlier by Roy and Dasgupta (1973). Collection was also made at Malda town ( $24^{\circ}$ - $48^{\circ}$ N) which occupies more or less the intermediate position between Calcutta and Siliguri. A comparative study of the catch in all these three points was made so as to have an idea about the differences in the synanthropic index of the same series of flies at three different latitudes in the State. At these three different latitudes of West Bengal synanthropic index was found to be positive in respect of all the blowflies trapped except in the case of Hemipyrellia ligurriens. In the case of other species the degree of liking varied from species to species. The synanthropic index in respect of Hemipyrellia ligurriens was positive in Calcutta but this species was synanthropic in Malda and in Siliguri. Chrysomya megacephala, which is dominant species, showed highest degree of liking to human association in all the three latitudes studied.

As regards photophilic behaviour it was observed that

(c)

these blowflies showed their preference to shade thus indicating their scotophilic nature in the study area. It was also revealed from this investigation that female of blowflies were more scotophilic than the males.

Results on relative efficiency of different types of baits used for collection of blowflies revealed that jackfruit was the most attractive bait for blowflies, following mango, stale fish, stale meat, fresh fish, fresh meat and molasses. Blowflies, because of their coprophilic habit, might be the potential transmitter of pathogens. Fish and meat, being the breeding media of blowflies, apparently larger number of female blowflies were attracted to such baits. Total number of male and female blowflies, trapped using ripe fruits as baits, apparently represented the actual picture of male and female population of blowflies in the study area.

Statistical analyses of the data, as obtained in the course of study on seasonal occurrence of blowflies, showed only an apparent seasonal variation of sex-ratio for the species of blowflies trapped, with fish and meat baits. Statistical analyses of the data so obtained on relative efficiency of baits, revealed that the Chi-square values for each pair of fruit baits showed insignificant thus pointing possibly to real proportion of sex-ratio of blowflies in the study area.

(d)

The combined result of statistical analysis of the data so obtained on seasonal occurrence of blowflies trapped on fish bait showed real differences in the distribution from each other among 4 distribution corresponding to the four seasons of the year. It was also revealed from the statistical analysis that the species does occur in varying proportion in the distribution of flies from one season to another.

Study on the duration of developmental stages of flesh flies revealed that Parasarcophaga misera, Parasarcophaga ruficornis and Parasarcophaga perigrina were the common flesh flies occurring in the study area. Investigation on duration of developmental stages of these three species of flesh flies revealed that the baits used for collection of blowflies might be exhausted by the larvae deposited by those common flesh flies within 4 to 7 days, depending on the number of larvae deposited by females in a single batch. The rate of various stages of development also depended on temperature and humidity of the experimental days. No remarkable differences were observed on the duration of developmental stages of those common flesh flies when bred on meat and fish baits.