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Dipteran flies in poultry houses in and around Bhubaneswar, Odisha

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Abstract

The study was conducted in different poultry farms in and around Bhubaneswar, Odisha for a period of ten months to determine the diversity of fly population. Out of 239 flies collected from poultry houses, *Musca sp.* had the highest abundance followed by *Culex sp.*, *Aedes sp.*, *Stomoxys sp.* and *Anopheles sp.* Higher abundance of flies were observed during the month of June while lowest during January.

Keywords: *Musca sp.*, Dipteran fly, abundance, poultry house

Introduction

Poultry bird is one of the most reared animal in many part of the world owing to its productivity and profitability. They are exposed to many endo as well as ectoparasitic infections. In tropical countries like India, fly menace is an important drawback affecting the poultry industry. In modern high-density poultry production facilities worldwide, flies are considered one of the major arthropod pests along with other ectoparasites (Axtell, 1984) [3]. The presence of excessive numbers of flies in poultry houses creates annoyance and may disperse to nearby areas where they can transmit pathogens to humans (Greenberg 1973) [5]. Dipteran flies can also act as intermediate hosts for parasitic worms infecting poultry birds and they acts as carriers of various disease causing agents like bacteria (*Escherichia coli*, *Shigella*, *Salmonella sp.*) Since information regarding fly diversity is scarce, the investigation was aimed to determine the major dipteran flies in poultry houses across the city.

Materials and Methods

The study was conducted in government and commercial poultry production facility in and around Bhubaneswar, Odisha. The samples were obtained by sweeping hand nets for about three to four minutes over the various sites inside the poultry house as well as *manure, vegetation and wiring*. The investigation was carried out for a period of ten months (Sept-16 to June-17). The samples were collected mostly during afternoon.

Result and Discussion

Out of the total 239 number of dipteran flies collected from poultry houses, 107 number of *Musca sp.*, 116 number of mosquitoes (73 *Culex sp.*; 28 *Aedes sp.*; 15 *Anopheles sp.*) and 16 belonging to *Stomoxys sp.* were recovered (Figure 1). Out of a total number of 239 flies collected from poultry farm amongst which the highest relative abundance was observed in the month of June while the least during December and January (Figure 2). *Musca sp.* was prevalent all throughout the year, declining only during the month of December. *Culex sp.* was dominant during April- May while *Aedes sp.* was more prevalent during the month of June and September (Figure 2).

Our study in poultry houses confirmed the findings by Jin and Jaal (2009) [6] who found high prevalence of *Musca* flies in poultry houses of Malaysia and by Dogra and Aggarwal (2010) [4] in India. This could be due to availability of poultry manure which gives off by product like ammonia and carbon dioxide, which attracts number of flies to breed. In Brazil, *Musca* and *Stomoxys* fly were found in poultry houses (Avancini and Silveria, 2000) [1].

During our investigation *Musca* fly was recorded throughout the year with slight decline during the months of December. Jin and Jaal (2009) [6] found a higher population of *Musca* fly from March to September and lowest during November and January in two poultry farms in

Penang, Malaysia. Ponnudurai and Harikrishnan (2011) [7] reported high prevalence during the month of October with onset of North East monsoon and lower prevalence during

winter from December to March. The presence of flies recorded all throughout the year could be due to the warm temperature recorded for most of the time of the year.

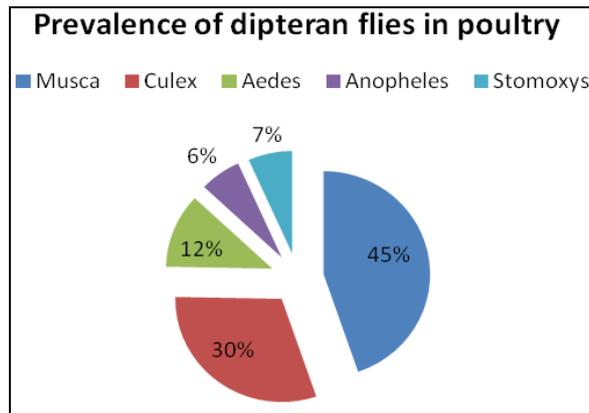


Fig 1: Prevalence of Dipteran flies in Poultry birds

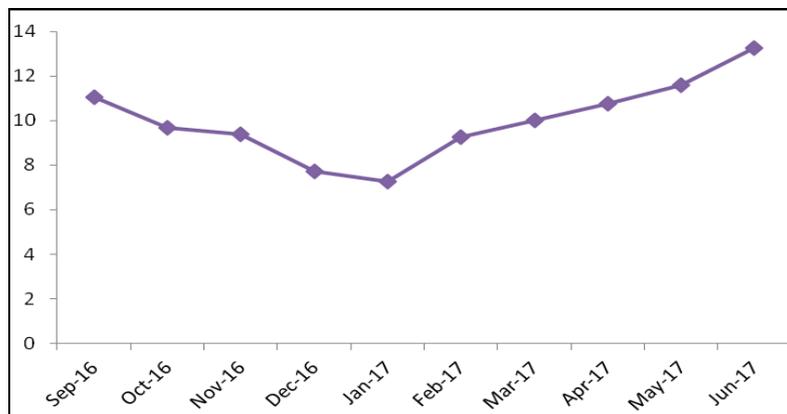


Fig 2: Overall abundance of dipteran flies month-wise

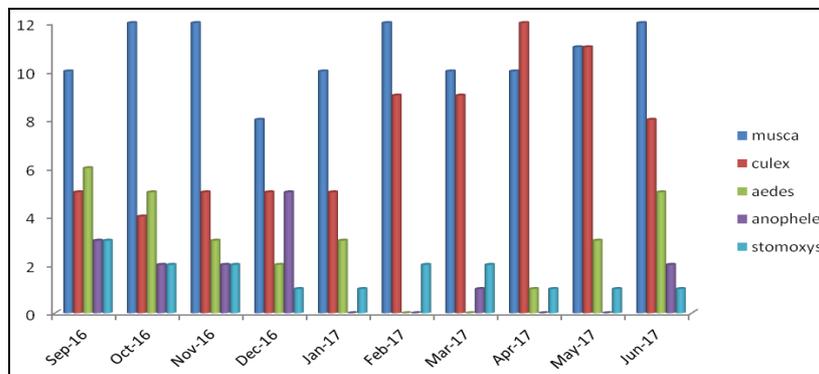


Fig 3: Month wise prevalence of different dipteran flies in poultry

Conclusion

Fly problem is an important concern in areas where poultry farming is an important economic activity. The poultry house keepers and owners might control vegetation around the poultry houses to inhibit fly infestations. Additionally, manure, electric wiring and other important resting sites for the flies should be preferential targets for adult control, either by chemical or physical measures. Environmental sanitation must also be maintained to check fly menace.

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