Survey on flies species and density in a restricted rural area of north-eastern Italy characterised by a high breeding concentration

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Introduction

In the last years population of a rural area of North-eastern Italy (Veneto region) has been complaining about an increasing of house flies. Therefore, Public Health Local Dep. has set up a study to estimate the real flies density. Data on type of species, annual distribution, correlation with territorial and climatic data were recorded.

Methods

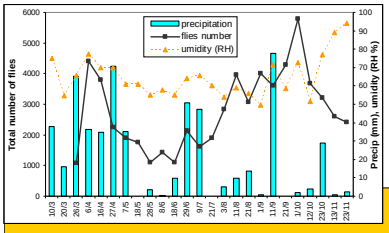
From March to November 2009 an area of 153 Km^2 (fig. 1) was split in 53 squares (1.5x1.5 km) and a sticky chromothropic Trap (SC Trap) (fig. 2-3) was put in each cell to estimate the flies density, along with 13 Iglu traps® (fig. 4) for species determination. Flies were collected every 10 days and only the species belonging to families Muscidae, Fanniidae, Calliphoridae, Sarcophagidae, Scatophagidae annoying to man were counted. The mean and total number of flies were correlated (ANOVA and linear correlation) with number and type of breeding, animal stabled, distance of the trap to the closer farm and climatic data.

Fig. 1 – Map of studying area

Fig. 2 - SC Trap

Fig. 3 - SC Trap in situ

Fig. 4 – Iglu Trap®



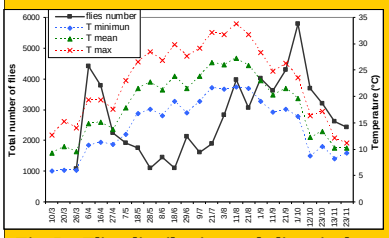


Fig. 5 – Flies distribution and climatic data

Results

Overall 63,945 flies were captured from March to November 2009. The main genera identified were: *Musca, Sarcophaga, Lucilia, Pollenia* and *Fannia*. Fly density has shown two peaks (April and October) but no correlation with climatic data (fig. 5), type and number of breeding and their distance from trap during the whole period. A positive correlation was found between total number of animal in poultry farm ($r=0.301$, $p<0.05$) and increasing fly numbers only in August and October.

Conclusions

The flies density peaks were apparently not influenced by climatic conditions but by agricultural management in specific months (i.e. spreading of the manure). This study has been useful to check "the fly problem" and stressed the importance of a correct management of dung, which is more important than the density of breeding and stabled animals.