

Supatta Keawayup 2012: Species Diversity and Diurnal Activity of Stomoxyine flies, *Stomoxys* spp. (Diptera: Muscidae) in Wang Nam Khiao District, Nakhon Ratchasima Province, Northeastern Region, Thailand. Master of Science (Entomology), Major Field: Entomology, Department of Entomology. Thesis Advisor: Professor Theeraphap Chareonviriphap, Ph.D. 61 pages.

A study of species diversity of *Stomoxys* spp. and diurnal variations of activity of the most abundant was performed during a 1-yr period at a local dairy cattle farm in Wang Nam Khiao District, Nakhon Ratchasima Province, Thailand. Four species of stomoxyine flies were identified by morphological, including *Stomoxys indicus* Picard 1908, *S. calcitrans* (Linnaeus 1758), *S. sitiens* Rondani 1873 and *S. uruma* Shinonaga and Kanao 1966. The most common species were *S. indicus* (50.2%) and *S. calcitrans* (49.5%). *Stomoxys sitiens* and *S. uruma* were found in small proportions (<1%). Seasonal abundance of stomoxyine flies was determined during three different climatic seasons: cool summer rainy. The number of captured flies was significantly different among the three seasons with the greatest number in the rainy season (mean=66%, $df = 2$, $P < 0.05$). A major seasonal peak of abundance of *S. indicus* and *S. calcitrans* was found in this season. Statistically significant difference between the number of males and females of *S. indicus* and *S. calcitrans* ($P < 0.05$) was observed.

Diurnal activity of *S. indicus* and *S. calcitrans* during three seasons were observed from different periods of two days a month with 2 hr interval, beginning from 06.00 to 18.00 hr by using Vavoua trap. Both sexes of *S. indicus* and *S. calcitrans* showed unimodal activity pattern in cool season. Similarly in summer period, both sexes of *S. indicus* and males of *S. calcitrans* showed also unimodal activity pattern. Whereas, a bimodal activity pattern was recorded in rainy season for both sexes of *S. indicus* and males of *S. calcitrans*. For females *S. calcitrans*, activity was observed throughout the day during summer and rainy season. A better understanding of stomoxyine fly behavior, especially the daily flight activity, can assist in prioritization and design of appropriate vector prevention and control strategies.

Student's signature

Thesis Advisor's signature