

Stable Fly (Diptera: Muscidae) Distribution in Thailand

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ABSTRACT

Diurnal sampling of stable flies (*Stomoxys* spp.) was carried out in ten localities throughout Thailand in 2007. Vavoua traps were used to lure and capture flies in ten provinces of the country, representing four major ecological settings: six small local dairy farms; two large industrial dairy farms; one national park; and one wildlife conservation area. Six species of stable flies were identified: *Stomoxys calcitrans* (91.5%), *S. bengalensis* (4.7%), *S. uruma* (2%), *S. indicus* (1%), *S. sitiens* (0.6%) and *S. pullus* (0.2%). The number of stable flies collected differed significantly among different collection sites, with greater numbers from dairy farms ($\chi^2 = 360.15$, $df = 3$, $P < 0.05$).

Key words: stable flies, distribution, Vavoua traps, species, Thailand

INTRODUCTION

The genus *Stomoxys* (Muscidae: Stomoxyinae) contains 18 described species (Zumpt, 1973). They are obligate, bloodsucking insects with some species considered significant economic pests of livestock and other warm-blooded animals in many parts of the world (Zumpt, 1973; Mullens *et al.*, 1988; Masmeathathip *et al.*, 2006). *Stomoxys calcitrans* is the most important and cosmopolitan species. In addition to *S. calcitrans*, several other stomoxyine flies also readily attack animals in high densities, including *S. niger* (Afrotropical), *S. sitiens* (Oriental) and *S. indicus* (Asian) (Wall and Shearer, 1997). Both male and female stable flies feed on blood, once each day and they are often aggressive and persistent feeders; they will attack

humans in extreme conditions or in the absence of preferred hosts. Although they are most active and problematic around livestock farms, they are also a nuisance insect at coastal beaches and in residential areas used for or near agricultural production (Newson, 1977). Adult flies have a typical flight range of 1.6 km. The biology of stable flies is described in Labrecque *et al.* (1975), Berry *et al.* (1976) and Smith *et al.* (1985).

Stable flies may cause a severe problem in dairies and feedlots, where they breed in moist soil and similar substrates (Meyer and Petersen, 1983). Severe biting activity can result in a reduction in animal weight and milk production. Significant economic losses due to loss in the anticipated gross weight gain of up to 227 g and a 30-40% decrease in milk yields have been observed (Hall *et al.*, 1982; Mullens *et al.*, 1988).

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