## CORRELATION OF HOST SPECIFICITY, ENVIRONMENTAL FACTORS AND ORIENTAL RAT FLEA ABUNDANCE

Kruawan Chotelersak<sup>1</sup>, Chamnarn Apiwathnasorn<sup>1</sup>, Sungsit Sungvornyothin<sup>1</sup>, Chotechuang Panasoponkul<sup>2</sup>, Yudthana Samung<sup>1</sup> and Jiraporn Ruangsittichai<sup>1</sup>

<sup>1</sup>Faculty of Tropical Medicine, Mahidol University, Bangkok; <sup>2</sup>International College, Mahidol University, Nakhon Pathom, Thailand

**Abstract.** Fleas are the vectors of many communicable diseases that are normally found in oriental rats. Climate and environmental changes influence the habitat and migration patterns of vectors. In this study, the oriental rat flea abundance, represented as total flea index, was determined in correlation to host specificity and various environmental factors. The number of hosts and fleas calculated from 3 specific habitats (shipping area, decayed area, and market area) from July 2010 to June 2011. The results showed that the common hosts in the shipping area and decayed area were *Rattus rattus* and *R. exulans*, with the total flea indexes of 3.36 and 1.58. *R. norvegicus* was the most common host identified in the market area. Fleas were virtually absent in rat hosts collected from the market area. Both the density of reservoir hosts and the total flea index were positively correlated with the mean annual rainfall and temperature. These data could be useful for control of rat populations in each specific habitat.

Keywords: Xenopsylla cheopis, rat flea, rodent, flea index, climate, Thailand

E-mail: jiraporn.rua@mahidol.ac.th

Correspondence: Dr Jiraporn Ruangsittichai, Department of Medical Entomology, Faculty of Tropical Medicine, Mahidol University, 420/6 Ratchawithi Road, Ratchathewi, Bangkok, 10400, Thailand. Tel: +66 (0) 2354 9100 ext 1574; Fax: +66 (0)

<sup>2643 5582</sup>