

Comparing methods for mosquito collection: Is Human Landing Catch (HLC) still relevant?

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ABSTRACT

Introduction: The distribution of mosquito species is essential in vector surveillance. It is the key component in initiating the specific vector control intervention for interrupting vector-borne disease transmission. The objective of this study is to compare the effectiveness of two methods in capturing vector mosquitoes at the recreational parks in Peninsular Malaysia, Malaysia. **Materials and methods:** This study was conducted at four selected recreational parks in Peninsular Malaysia from April 2017 until April 2018. Adult mosquitoes were collected using two techniques; Human Landing Catch (HLC) and CDC- Light Trap (CDC-LT). **Results and conclusion:** A total of 768 mosquitoes were captured from four recreational parks during this study consisting of 41 species belonging to five genera of mosquitoes: *Anopheles* (21 species), *Aedes* (4 species), *Culex* (8 species), *Mansonia* (3 species) and *Armigeres* (4 species). This study proves that mosquitoes' collection using the HLC technique was more significant compared to CDC-LT, where the HLC technique successfully captured 98% of mosquitoes compared to CDC-LT (mean significance 4.664 ± 16.636 , with $p < 0.05$). This study showed that HLC technique is an efficient technique in capturing mosquitoes compared to CDC-LT. Although HLC has proven to be the better method, its implementation requires humans as bait, and therefore it can raise safety issues related to accidental infection if this method is performed in an area that is endemic to mosquito-borne diseases.

Keywords: mosquito collection, distribution of mosquito, Human Landing Catch (HLC), CDC-Light Trap, vector surveillance