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Project Title: Promoting the Accuracy on the Vectors Density Investigation of Dengue Fever in the Community

Project Number:DOH95-DC-1007

Executing Institute:TAJEN University

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Abstract:

The results of surveillance in 2008 indicated that source reduction of dengue vectors should focus on the old communities and public employee residency in Fengshan and Pingtung county. In addition to the health education, the source reduction should be noted in city and old residency area of ZuoYing, Kaoshung. The most egg numbers were collected in city among four community types, i.e. city, redesign area, old residency and public employee residency. Due to the long term chemical control and source reduction, the reproductive strategy of vector mosquitoes could be changed. It made a phenomenon that 0 Breteau Index in surveillance and still many eggs can be found in ovitrap. The comparison of the occurrence of *Ae. aegypti* in 4 community types indicated that higher ratio of vector can be found at ZuoYing, Kaoshung than that at Fengshan and Pingtung city. There were few *Ae. aegypti* in March and its density peak occurring during June and September. We recommend that the community-base source reduction should be conducted at May.

There are no relationships found between weekly precipitation and dengue cases by analyzing the data through 2002 to 2004. However, the significant relationship before 2002 can be found between the dengue cases and 11 week precipitation with $r=0.3212$ ($p=0.020$). In Pingtung city, the dengue cases in 2002 was positively correlated to the precipitation of 10 weeks (2.5 month) before, and that in 2004 was positively correlated to the precipitation of 6 weeks before ($r=0.328$, $p=0.0175$). Also, the positive relationships in Pingtung at 2004 were found between the dengue infestation frequency and epidemic duration, intensity as well as the dengue ratio.

Vegetation and vacant land are two major factors influencing the occurrence of dengue vector mosquitoes after the impact analysis of the community environment on Breteau index. Surveillance data from “City” and “Old community” types showed significantly correlate to the egg number in and *Aedes aegypti* adults emergence from the ovitrap. Breteau index calculated from “Reorganize area” was correlated to the egg numbers in and *Aedes albopictus* adults emergence from the ovitrap. Moreover, the precision of Breteau index can be increased by concerning with the numbers of egg and adults of both *Aedes* species.

Keyword: *Aedes aegypti*, Breteau Index, ovitrap, precipitation.