

## INTEGRATED *Aedes aegypti* MANAGEMENT IN CHINA

by

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*Aedes aegypti* was proved to be the main vector of dengue/dengue haemorrhagic fever in Hainan and Guangdong provinces and Guangxi autonomous region where it occurred. Integrated *A. aegypti* management was done both in Hainan and Guangxi.

In Guangxi, *A. aegypti* was found in several villages in the coastal regions and in Weizhou island. High Breteau indices were observed in these villages before the control. In 1981, integrated vector management was initiated in a village of Fancheng county by the writer and his colleagues and then extended to other places. In addition to environmental management, one or two Chinese cat fish, *Claris fuscus*, were released into water containers for domestic uses. The fish was found to be very effective in larval control (Luh and Xu, 1981; Wu *et al.*, 1987). Through the unremitting efforts of local workers, a recent report from the Sanitary and Anti-epidemic Station of the autonomous region indicated that this species had been nearly eradicated in these infested villages and the Breteau index had decreased to zero in Weizhou island.

In Hainan province, *A. aegypti* are common in most of the villages in the coastal regions almost throughout the island. Routine control was practised during the previous dengue epidemics. In 1988, the writer was entrusted by the Office of National Patriotic Health Campaign to be responsible for a project on integrated *A. aegypti* management with community participation in this island, in cooperation with Hainan Sanitary and Antiepidemic Station and others. Thus an experimental control area was established in Changmai county. Source reduction was adapted in the control area.

Since *A. aegypti* is a typical domestic species and breeds mostly in containers stored water for domestic uses, special attention was paid to these containers inside and around the premises. Routine change and cleaning of these water containers were encouraged. However, since water

supply was difficult in many places or in the dry season, the above practice was not feasible in many cases and larval control was an indispensable complementary measure in the island.

For this purpose, suspensions of Bacillus thuringiensis H-14 were applied to the water containers. The local strain of A. aegypti was found to be very sensitive to this biocide, with a LD<sub>50</sub> of 103.5 ITU/l, less than that of Bora Bora strain (133.5 ITU/l) (Xu et al., 1986). In the field trial, with the application of this biocide (local product, 180-300 ITU/mg) at a rate of 10-20 ppm weekly in a village, the Breteau index was reduced from 116 to less than 3 after two rounds of treatment (Wang et al., 1986).

Moreover, in order to enhance community participation, a system of so-called "dengue insurance" was organized in the control area, in addition to public education. Inhabitants were encouraged to join the "insurance" by paying Yuan 2.00 (about \$ 0.53) per person each year. The participants were obliged to inspect their premises for the presence of larvae and to get rid of them. They were also expected to undertake the disposal of all unused objects that might collect water. In return they were paid Yuan 30.00 towards medical care if they contracted dengue sickness. The funds thus accumulated were used for control.

The result of one year's control was encouraging. The Breteau indices of some villages had decreased to less than three or even zero.

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