

## SECTION A

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### Entomological and sociological investigations in dengue transmission areas in the Matale district

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Entomological and sociological surveillances were carried out, to determine the key premises and containers suitable for *Aedes aegypti* and *Aedes albopictus* breeding in the selected dengue and Dengue Hemorrhagic Fever (DHF) transmission areas of the Matale District from 2004 to April 2006. Serologically or clinically identified dengue/DHF cases were collected from the Regional Epidemiologist, Matale. All the cases were investigated and 124 indigenous cases were randomly selected. Entomological surveillance was carried out around these cases, covering an area of 100 m radius of each case using standard methods. A sociological survey was carried out at the same time using a questionnaire.

A total of 9133 water filled containers positive for *Aedes aegypti* and *Aedes albopictus* were encountered around 9661 places consisting of houses, dumping yards, government institutions and commercial sites. Eight types of artificial and natural containers namely, indoor and outdoor ground level water storage tanks and barrels, discarded receptacles, tyres, leaf axils of some plants and ornamental containers, refrigerator trays and roof gutters served as breeding places of vectors. Of all the types of water filled containers, a high proportion of outdoor ground level water storage cement tanks (48.47%) and discarded receptacles (34.39%) were infested by *Aedes aegypti* and *Ae. albopictus* larvae. The containers left outdoors (96%) showed a higher frequency of breeding vectors than those kept indoors. Middle income houses were significantly more likely to have *Aedes* larvae-infested containers than high ( $W=213$ ,  $n=12$ ,  $P=0.003$ ) and low income premises ( $W=78$ ,  $n=12$ ,  $P<0.001$ ). These results suggest that *Ae. aegypti* and *Ae. albopictus* control programmes could be more cost effective and sustainable by concentrating efforts on key premises and key containers to control mosquito densities and dengue transmission while reducing manpower needs and insecticide use.

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