

# FIELD EFFECTIVENESS OF PYRIPROXIFEN AUTO-DISSEMINATION TRAP AGAINST CONTAINER-BREEDING *Aedes* IN HIGH-RISE CONDOMINIUMS

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**Abstract.** Continued outbreaks of dengue in endemic areas, unabated despite use of conventional vector control methods, necessitate development of new control tools as existing dengue mosquito control technologies are effective only to a limited extent. An insect growth regulator (IGR)-treated auto-dissemination trap was developed against *Aedes* spp, in which a female mosquito ovipositing in the treated trap is contaminated with an IGR [0.004% pyriproxyfen (PPF)] and transfers the IGR to other containers as the mosquito continues to oviposit. Four PPF auto-dissemination traps were placed on each floor of a 3-block condominium complex in Sri Subang, Selangor, Malaysia for 44 weeks (February to December 2014). Traps were replenished with PPF solution biweekly. Dengue epidemiological monitoring was also conducted by national health authorities. Oviposition in auto-dissemination traps increased over the study period, indicating an attraction for gravid female *Aedes* spp. No single live larva was observed in any auto-dissemination trap, indicating complete larval mortality induced by PPF. Following introduction of eight additional treated traps on every floor from week 16 onwards, a reduction in ovitrap index from 90 to 33% by week 20 was observed. Correspondingly, number of reported dengue cases was reduced from 53 in 2013 to 13 cases in 2014 ( $p$ -value = 0.006). Although *Aedes* spp populations fluctuated over the course of the study period, the results suggest auto-dissemination traps as a promising dengue control tool. Future research should be directed to determine the optimal PPF concentration and number of PPF treated auto-dissemination traps required to be deployed for ensuring maximum control of dengue.

**Keywords:** *Aedes* species, auto-dissemination trap, dengue, insect growth regulator, pyriproxyfen

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