

# MOSQUITO LARVICIDAL AND RESIDUAL ACTIVITY OF CAPSULAR TEMEPHOS

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**Abstract.** Temephos sand granule formulation is an organophosphorus larvicide used effectively in dengue control program to control container-breeding vector *Aedes* mosquitoes. However, conventional sand granule formulation is difficult to apply to hard-to-reach breeding sites, such as roof gutter, flat roof and awning. In order to overcome this problem, a water-soluble capsular preparation of temephos in a two-part capsule (TEMEBATE® C) was tested during 2016 - 2018 for efficacy and residual activity in indoor and outdoor conditions, and for efficacy in hard-to-reach breeding sites. In indoor plastic containers, a temephos capsule (1 mg ai/l water) induced complete larval mortality in three field strains of *Ae. aegypti* for up to 28 weeks and up to 48 weeks in one field strain. In outdoor plastic containers and flower pot trays, complete larva mortality against *Ae. aegypti* field strains was achieved for up to 28 weeks. In outdoor rain gutter trials, complete mortality of *Ae. albopictus* and *Culex quinquefasciatus* larvae in a porous container was achieved after 48-hours of exposure to a temephos capsule (0.67 or 2.00 mg/l water), and this was maintained for up to six weeks, with placement of a container of new larvae every week. In conclusion, capsular temephos proved to be as effective as conventional sand granule formulation in terms of bioefficacy and residual activity, and could be disseminated into difficult-to-reach mosquito breeding sites.

**Keywords:** *Aedes aegypti*, *Aedes albopictus*, dengue vector, temephos capsule

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