

AEDES CONTROL IN DESERT COOLERS THROUGH A LONG-LASTING PYRIPROXYFEN BASED FORMULATION

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Abstract Dengue control in India relies heavily on chemical vector control. Treatment of breeding sites for immature mosquito stages is a common practice. Desert coolers appear to be one of the preferred breeding sites for *Aedes* mosquitoes. Insect Growth Regulators like pyriproxyfen have been studied as an effective and efficient alternative to conventional larvicides. Several formulations of pyriproxyfen have been assessed for efficacy and duration of action, and with modern microencapsulation technology, pyriproxyfen is also being used as a ready to use formulation against the *Aedes* mosquito. We evaluated a novel pyriproxyfen based microencapsulated formulation (INESFLY LARVA IGR) regarding residual efficacy through semi-field trials against *Aedes aegypti* immature stages. Four treated desert coolers were cleaned and sprayed with the larvicide formulation at the recommended dosage. The product was applied only to the inside surfaces which were to be in contact with water. After 24-48 hours drying period, the coolers were filled with water and operated regularly. Larval density and adult emergence were assessed over five months from August to December 2018 for the treated (4) and control coolers (2). Breeding in the treated coolers was noticed on day 22, while the control showed larvae on the fifth day. Larval density was reduced in the treated coolers from 93.8% in the first month to 13% at month 5. No adult emergence was recorded during the five-month follow up in the pyriproxyfen treated coolers, while a 58.5% adult emergence was obtained in the control coolers. This advancement in insecticide formulation technology promises to make Dengue control more effective and efficient. We recommend trials at the community level to assess this promising technology further.

Key words Dengue, *Aedes*, Pyriproxyfen, desert cooler, breeding