FIELD EVALUATION OF NOVALURON, A CHITIN SYNTHESIS INHIBITOR LARVICIDE, AGAINST MOSQUITO LARVAE IN POLLUTED WATER IN URBAN AREAS OF BANGKOK, THAILAND

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Abstract. Novaluron, an insect growth regulator, a benzoylphenyl urea insecticide, was evaluated in the field against the larvae of polluted-water mosquitoes. The study was carried out in highly polluted sites infested with populations of mosquito larvae, mostly *Culex quinquefasciatus* Say, in low-income communities in urban areas of Bangkok, Thailand. An EC10 formulation was premixed in water and applied by pressurized spray tank to plots ranging from 180 to 1,000 m^2 at the rate of 0.1 ml EC10/m^2 (equal to 10 mg a.i./m^2) of the breeding sites. Assessments were made by sampling mosquito larvae and pupae to determine the trends of immature populations before treatment and weekly after treatment. Reduction of the populations in percents were then computed by comparing counts of immature mosquitoes (larvae and pupae) to the pretreatment counts at each particular site. It was found that the immature populations of mosquitoes in the treated areas were dramatically suppressed and remained at extremely low levels for 3-7 weeks after the treatment depending on the prevailing conditions of each experimental site. No negative impact on fishes or aquatic plants in the treated areas were detected during the study period and three months after the experiment was discontinued. Novaluron is an effective agent to control immature populations of polluted-water mosquitoes, especially *Cx. quinquefasciatus* in habitats in urban areas. This IGR larvicide may play an important role in vector control programs in terms of effectiveness, environmental friendliness and strategies for insecticide-resistance management in vector mosquitoes.

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