

# FIELD EVALUATION IN THAILAND OF SPINOSAD, A LARVICIDE DERIVED FROM *SACCHAROPOLYSPORA SPINOSA* (ACTINOMYCETALES) AGAINST *AEDES AEGYPTI* (L.) LARVAE

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**Abstract.** Two formulations of spinosad, direct application tablet (DT) and 0.5% granules (GR), at 3 dosages (0.25, 0.5 and 1.0 mg/l) in 200-liter earthen jars were evaluated against the larvae of *Aedes aegypti*. Two water regimens were used in the jars: jar full all the time and a full jar in which half the volume of the water was removed and replaced at each assessment interval. All treatments and controls were replicated 4 times and challenged with cohorts of 25 third-instar larvae of *Ae. aegypti* at weekly intervals during the study. The number of pupal skins (indicating successful emergence of adults) in the treated and control regimens were counted 7 days post-addition and they were used to calculate inhibition of emergence (% IE) based on the original number of larvae used. The DT formulation at the highest concentration (1.0 mg/l) yielded 79-100% IE for 34 days in the full jars, efficacy declining beyond this period. However, the longevity of this dosage was much longer with 90-100% IE for 62 days post-treatment in the water exchange regimen. The target and manufacturer-recommended concentration of 0.5 mg/l of DT gave good control (92-100% IE) for 20 days, declining below 92% IE thereafter in full jars. This dose also yielded good control with IE of 97-100% for 27 days in the water exchange regimen. The 0.5% GR formulation at all 3 dosages showed higher efficacy and greater longevity in the jars than the DT. In the full jars, all 3 dosages produced IE of 76-100% for 55 days post-treatment. In the water exchange regimen, the efficacy and longevity were increased by about one week, up to 62 days post-treatment. It is clear that the DT formulation can be used effectively against *Ae. aegypti* larvae at a target dose of 0.5 mg/l in 200-liter jars. This dose can be increased to 1.0 mg/l if slightly longer residual activity is desired. In containers where water is consumed and more water added, the longevity of efficacy will be longer for the DT than in jars which remain full all the time. GR (0.5%) gave longer control than DT. GR (0.5%) floated on the surface and produced scum and an oily film, features not desirable in stored water.

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