LARVICIDAL EFFICACY OF NEW FORMULATIONS OF TEMEPHOS IN NON-WOVEN SACHETS AGAINST LARVAE OF *AEDES AEGYPTI* (L.) (DIPTERA: CULICIDAE) IN WATER-STORAGE CONTAINERS

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Abstract. Three new formulations of temephos (LAVIFOS SG 1%, MOSQ SG 1% and AZAI-SS ZG 1%) were evaluated for larvicidal efficacy against larvae of *Aedes aegypti* (L.) in water-storage jars under field-simulated conditions. LAVIFOS SG 1% and MOSQ SG 1% are sand granule formulations, whereas AZAI-SS ZG 1% is zeolite granule formulation. Each formulation contained 1% temephos as an active ingredient. Each formulation was packed in a non-woven sachet at quantity of 20 g per sachet and placed in a 200-liter glazed clay jar to obtain a dosage of 1 mg/l (one sachet per jar). Each treatment and control (jar without larvicide) was replicated four times. A concurrent set of treatments and controls were carried out in parallel, but the water in each treated and control jars was removed and refilled weekly. All jars (treatment and control) were challenged weekly by adding 25 third-instar larvae per jar and assessment was made of larval mortality by counting pupal skins one week after the addition of larvae. The three formulations provided complete larvicidal efficacy (100%) for at least 24 weeks post-treatment (the length of this study). In the jars where all the water was removed and refilled weekly, LAVIFOS SG 1%, and MOSQ SG 1% provided complete larvicidal efficacy for at least 24 weeks post-treatment, whereas AZAI-SS ZG 1% showed complete larvicidal efficacy for 16 weeks post-treatment. AZAI-SS ZG 1% still demonstrated a high degree of larvicidal activity (93-99%) from 17 to 24 weeks post-treatment. The present study reveals an excellent residual efficacy of the three new formulations of temephos against larvae of *Aedes aegypti* in water-storage jars lasting for at least 16 to 24 weeks post-treatment. These new formulations will make the control of DHF vectors in Thailand more cost effective as they are removable and retrievable sachets that can be reused after cleaning the water-storage containers.

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