PERSISTENCE OF *BACILLUS SPHAERICUS* STRAIN 1593 AGAINST LARVAE OF *CULEX QUINQUEFASCIATUS* IN POLLUTED WATER

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ABSTRACT

The microbial control agent, *Bacillus sphaericus* 1593, was evaluated against the *Culex quinquefasciatus* larvae in roadside ditches and artificial pools at Din Daeng and Huay Kwang areas from October 1984 to October 1985. The objective of this study was to examine the residual activity of *B. sphaericus* 1593 in polluted waters under field conditions. The persistence of larvicidal activity of *B. sphaericus* 1593 varied considerably according to environmental conditions. It persisted about 3-10 days in the test plots containing polluted waters contaminated with surfactant. The direct effect of surfactant against *Cx. quinquefasciatus* larvae was also studied in the laboratory, and it was found that surfactant alone at the concentration of 1 mg/l MBAS could reduce the larvicidal activity of *B. sphaericus* 1593 about 1 log. At high concentrations (above 10 mg/l MBAS), the surfactant alone had lethal effect against *Cx. quinquefasciatus*. Moreover, the surfactant was degraded rapidly with the degradation rate about 12.5% in 5 days. In the artificial pools containing polluted water located under direct sunlight, the larvicidal activity of *B. sphaericus* 1593 persisted for more than 3 months.

The populations of *B. sphaericus* 1593 in the second and third experiments were fluctuated indicating that *B. sphaericus* 1593 could recycle in certain conditions.