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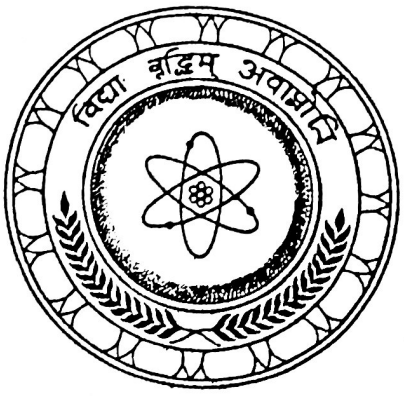

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Part I: Abstracts

408/D

Acute oral toxicity of *Bacillus thuringiensis Bt* SB 67 Sri Lankan isolate

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Biological control has been considered as an alternative to conventional chemical control methods as a means of mosquito control. Mosquito larvicidal potential of local isolates of *Bacillus thuringiensis* (*Bt*) has been identified. Thus, the aim of the present study was to scientifically investigate the acute oral toxicity of *Bacillus thuringiensis Bt* SB 67 Sri Lankan isolate using Wistar rats. The experiments were conducted using Wistar rats (n=30, weight: 170–320 g, aged 8 weeks). The rats were randomly divided into 3 groups (n = 10 rats per group; 6 males + 4 females, control:test =1:1). Test animals of each group were orally administrated with a maximum challenge dose equivalent of 1×10^9 spores/mL of *Bt* SB 67 diluted with normal saline. Volume of administration was 1.0 mL. Normal saline was used as the control. Overt signs of clinical toxicity were observed for 48 hours randomly following administration. Mortality and body weight effects were observed for 25 days. Blood was drawn for biochemical and hematological studies prior to dissection and abnormal tissue necropsy and histology of vital organs observed on 5th, 12th and 25th days of each of the groups of test and control animals respectively. Organs were collected for histological studies. Blood urea, AST, ALT, random glucose and packed cell volumes (PCV) were determined. A microbial assay to confirm the fecal clearance of *Bt* SB 67 spores at 5th, 12th and 25th day following administration was performed. No mortality following administration of *Bt* SB 67 was observed up to 25 days. Abnormal behavior or any external signs of toxicity in the test compared to control group during the first 48 hrs following administration of *Bt* SB 67 were not observed. Body weights of the test rats and control rats were not significantly different ($p>0.05$) at any stage of the study. Organ weights (liver, kidney and lung) of the test rats and control rats were also not significantly different ($p>0.05$). No significant differences ($p>0.05$) were observed in the PCV, blood glucose, AST, ALT and urea in test compared to the control rats. After the 5th day all fecal test samples were positive for *Bt* SB 67. On day 12, 4 out of 5 test rats had *Bt* SB 67 in fecal matter. On day 25, none of the rats had *Bt* SB 67 in the feces. No abnormalities (color, size, any other observable changes) in liver, kidney and lung tissues were observed on visual examination or in histology sections. It can be concluded that *Bacillus thuringiensis Bt* SB 67 Sri Lankan isolate has no acute oral toxicity on rats at doses used as biological control.

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