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# Evaluation of local *Bacillus thuringiensis* from the soils of Western Ghats, Karnataka and their biocontrol potential against white grub, *Holotrichia serrata* (F.) (Coleoptera) and house fly, *Musca domestica* L. (Diptera)

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The Western Ghats of India is one of the world's "biodiversity hotspots" that runs along the western part of South India through four states including Karnataka. As a result, Western Ghats are expected to yield high diversity of any taxon. With a view to understand this aspect study on the diversity of *Bacillus* spp. in the soils of Western Ghats was conducted. A total of 292 *Bacillus* isolates were identified as *Bacillus thuringiensis* which were recovered from 35 soil samples collected from different habitats of Western Ghats of Karnataka. Soils of different habitats varied tremendously in the natural load of *Bacillus* CFUs. Lowest CFU load was observed in soil W15 ($2.6 \times 10^6$) whereas the soils W13, W20, W24, W29 ($8.1 \times 10^6$) yielded the highest number of *Bacillus* CFUs/g of soil, with an overall mean of $6.07 \times 10^6$ CFUs per g of soil. On an average, 8.34 (± 1.95) colonies were picked from each soil sample. These colonies were subjected to standard biochemical tests to identify the *B. thuringiensis* colonies. On an average, 5.6 (67.12 %) of the picked colonies per soil sample were observed to be *B. thuringiensis* colonies. Tests of activity of these isolates against a species of white grub, *Holotrichia serrata* (F.) and a fly pest, *Musca domestica* revealed 14 isolates to be active against *H. serrata* and 10 against *M. domestica*, with three of these against both the species. The study thus demonstrated that there is potential for the use of these isolates in pest management.

**Key words :** *Bacillus thuringiensis*, Endospores, Toxicity, *Holotrichia serrata*, *Musca domestica*

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