

**Evaluation of insecticidal activity of *Bacillus thuringiensis* strains against cattle pests**

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Parasitic diseases stand out among animal health problems that affect cattle industry, being particularly important in tropical countries such as Brazil. The economic impact caused by two major livestock pests, the horn fly (*Haematobia irritans*) and the stable fly (*Stomoxys calcitrans*), approaches US\$ 1 billion yearly. Control of the horn fly, a pest of extensively raised beef cattle, became a nationwide problem because insecticide resistance, a major challenge for agriculture worldwide. Primarily a pest of dairy cattle and feedlots, the stable fly also became an issue for beef cattle because the recent expansion of the sugarcane industry. Massive stable fly production in sugarcane residues and byproducts has led to impressive outbreaks affecting animals and humans, with no efficient method of control. This proposal meets a demand for innovative strategies for control of livestock pests and aims to evaluate the efficacy of *Bacillus* entomopathogenic toxins on horn flies and stable flies. *Bacillus* strains will be evaluated against immature stages of both fly species. A screening bioassay will select strains with insecticidal activity and a concentration-response bioassay will further measure their toxicity. Fly eggs and larvae will be inoculated in bovine feces (horn fly) or rearing medium (stable fly) treated with a sporulated bacterial culture. Larval survival (% pupation) and pupae survival (% emergence) will be monitored. *Bacillus* bioinsecticides are non-toxic to mammals and plants, highly specific to insect orders, and show a distinct mode of action from conventional insecticides, thus making them a promising approach for integrated control of livestock pests.

Key-words: horn fly, stable fly, biological control

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