

BIOACTIVITY PROSPECTION OF *BREVIBACILLUS* STRAINS AGAINST *MUSCA DOMESTICA* (DIPTERA: MUSCIDAE) (LINNAEUS, 1758)

Autores: Barcellos, I.S.^{1,2,3}, Baía, V.S.F.², Queiroz, M.M.C.², Zahner, V.²

Instituição: ¹ Colégio Pedro II *Campus* Humaitá II (Rua Humaitá, 80 - Humaitá – CEP: 20715-003 - Rio de Janeiro/RJ);

² IOC – Instituto Oswaldo Cruz/Fiocruz (Avenida Brasil, 4365 – Manginhos CEP: 21040-360 – Rio de Janeiro/RJ);

³ EPSJV – Escola Politécnica de Saúde Joaquim Venâncio/Fiocruz (Avenida Brasil, 4365 – Manginhos CEP: 21040-900 – Rio de Janeiro/RJ).

Resumo:

The housefly *Musca domestica* has major health, medical and veterinary importance as it can cause diseases in humans and animals. As the fly develops itself in different types of organic matter, it can transport and disseminate different pathogens. Due to its high population density, in the rural area the housefly can cause annoyance and loss of weight in animals what gives it economic importance. These factors have made *M. domestica* an important target to the population control of pests and insect vectors. In order to minimize the negatives effects of chemical insecticide, *Brevibacillus laterosporus* have been used as biologic insecticide due to the toxicity and insecticidal effect of their spore or parasporal body. The aim of this research is the evaluation of the effects of different strains of *Br. laterosporus* against adults of *M. domestica*. The adults used in the bioassays came from laboratory colonies maintained with 60% sucrose solution and putrefied meat with wheat bran on the proportion of 5:1 grams to obtain eggs. The selected bacterial strains were maintained in a stock and plated in Petri dishes contained nutrient agar. Isolate colonies were striated into slants until they have reached nearly 95% of sporulation. Distilled water was added to each tube forming a bacterial spore suspension, which was used in the bioassay in different concentrations ($1,63 \times 10^9$; $8,16 \times 10^8$; $4,08 \times 10^8$; $2,04 \times 10^8$; $1,02 \times 10^8$ UFC/mL and diluted in 60% sucrose solution); control group was fed with 60% sucrose solution. During four days of the bioassay, the diet was renovated and the mortality calculated. The bioassay was performed in a climate chamber at $25 \pm 1^\circ\text{C}$ relative humidity of $70\% \pm 10\%$ and photofase of 12h. *M. domestica* adults showed sensibility to all tested concentrations and the highest presented the best efficiency causing mortality of 70%. Our data shows that *Brevibacillus laterosporus* strains are a promising insecticidal control agent against muscoid dipterans.

Palavras chave: biological control, housefly, *Brevibacillus laterosporus*

Agência Fomento: PROVOC/CNPq and IOC/Fiocruz