

Title: IDENTIFICATION AND ENTOMOPATHOGENIC POTENTIAL OF ACTINOBACTERIA ISOLATED IN MARINE ENVIRONMENTS

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ABSTRACT

The cabbage aphid, *Brevicoryne brassicae*, is a major pest of brassica, being controlled with systematic spraying with chemical insecticides. An alternative to chemical control is the use of actinomycetes isolated from terrestrial environments as biological control agents. Microorganisms isolated from marine environment, however, can also be promising for the control of pests. In this sense, the objective of this paper was to evaluate the effect of marine isolates of actinomycetes, *Streptomyces variabilis* / Genbank: JX997144, JX997143, *Streptomyces seoulensis* / Genbank: JX997141, *Streptomyces cavourensis* / Genbank: JX997146, JX997147, *Streptomyces parvus* / Genbank: JX997139 and *Streptomyces bacillaris* / Genbank: JX997140 on the parameters of population growth, feeding behavior and mortality of *B. brassicae*. Were used actinomycetes isolated from marine sediment collected from the intertidal region of Ilha do Mel, Paraná (25°20'S - 48°20'W and 5°35' - 48°35'W). The isolate with higher mortality of *Brevicoryne brassicae* was characterized. *Streptomyces variabilis* showed greater toxicity, with 100% mortality in 96 hours. The estimated LC50 was 0,20 × 10⁷ cells.mL⁻¹, and the LC25 (0,12 × 10⁶ cells.mL⁻¹) did not affect parameters of increase of *Brevicoryne brassicae*. However, there was a significantly reduction (75%) of the aphids feed rate, demonstrating an effect in reducing the damage to the plants infested by them. These results point *Streptomyces variabilis* as promising biological control of pests. Furthermore is their ability to grow in extreme environments, with salinity, pressure, UV radiation very high, large temperature fluctuations and provision of food, allowing compete with other microorganisms in relation to the agricultural environment, which also feature extreme conditions.

Keywords: Bioprospecting, biological control, actinobacteria, cabbage aphid

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