

SELECTION STRAINS OF *Bacillus thuringiensis* TOXIC TO *Helicoverpa armigera* AND POTENTIAL FOR PLANT GROWTH PROMOTION

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Abstrat

Helicoverpa armigera (Hübner, 1808) (Lepidoptera: Noctuidae) is an extremely polyphagous species, feeding from different types of crops with economic importance and has great adaptability to various climatic conditions (Srivastava et al., 2010; Bueno et al., 2014). *Bacillus thuringiensis* is a cosmopolitan bacteria that express different proteins with entomopathogenic activity, and may act as an important biological control agent, besides being capable to colonize the interior of plants, promoting its growth (Bravo et al., 1998; Praça et al., 2012). To know more and explore the potentials of this microorganism, the aimed of this work to select 100 strain of *B. thuringiensis* wick toxicity to *H. armigera* and potential for plant growth promotion. The strains were evaluated *in vitro* through a selective bioassay, the capacity of secondary metabolites to promote plant growth and the presence of genes. Twenty three strains showed 100% the mortality against *H. armigera*. Some strains exhibited the different profile proteins and amplicons for the *cry1* and *cry2* gene (table1). *In vitro* detection, showed that no strain had the siderophore production capability, phosphate solubilization and biological fixation of nitrogen, only in the production of índole acetic acid (table2). 45 of the 100 analyzed strains showed the expected amplicons for all the studied genes for the *acid phosphatase*, *siderophore* and genes involved in the biosynthesis of IAA hormone of *ipdC*, *iam1* and *iam2*. *B. thuringiensis* can be used in biological control against *H. armigera* and has a great potencial to promote plant growth, creating new perspectives for agronomic use.

Keywords: Biological control, secondary metabolite, genetic diversity.