

Helicoverpa armigera Hubner (Lepidoptera: Noctuidae) Susceptibility to Bacillus thuringiensis Crystal Toxins

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Abstract : *Bacillus thuringiensis* is a gram-positive spore-forming bacterium that belongs to the *Bacillus cereus* group of Bacilli and it produces ICP (insecticidal crystal protein) Cry toxins or Cysts toxins. Spores are produced as parasporal crystalline inclusions bodies (also known as endotoxins) at the onset of sporulation during the stationary growth phase. During vegetative growth that does not form crystals and is called vegetative insecticidal proteins (VIP) and secreted an insecticidal protein (SIP). *Bacillus thuringiensis* (Bt) is important for pest management either in the form of insecticides or through incorporated in the gene of the crop. Bioassays were conducted on the F2 generation of 1st instar larvae of *H. armigera* by the diet incorporation method to determine the susceptibility to Bt Cry toxins (Cry1Ac, Cry2Ab, Cry2A). The median lethal concentration (LC₅₀) of Cry1Ac, Cry2Ab, Cry2A ranged from 0.11 to 1.06 µg/ml and moult inhibitory concentration (MIC₅₀) of Cry1Ac, Cry2Ab, Cry2A ranged from 0.05 to 0.25 µg/ml. Cry1Ac was found most toxic to 1st instar larvae of *H. armigera* as compared to other Bt Cry toxins (Cry1Ac, Cry2Ab, Cry2A). The experimental results are important to policy-makers and technology providers to develop strategies for the exploitation of transgenic Bt cotton varieties as a component of integrated pest management.

Keywords : Bt toxin, Cry1Ac, Cry2Ab, Cry2A, susceptibility, *Helicoverpa armigera*

Conference Title : ICE 2018 : International Conference on Entomology

Conference Location : Paris, France

Conference Dates : October 29-30, 2018