

CHARACTERIZATION AND BIOLOGICAL ACTIVITY OF THE EPICUTICULAR COMPOUNDS FROM SUGARCANE GIANT BORER TELCHIN LICUS LICUS

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Brazil is the largest producer of sugarcane in the world, with an estimated crop production for 2015/2016 a total of 654.6 million tons. The production of this crop suffers strong influence of climatic conditions and by the action of insect pests. It is estimated that about 10% of the crop losses are due to attack of insect pests. The sugarcane giant borer *Telchin licus licus* has become an important pest in sugarcane fields in Brazil and difficult to control because it develops inside the plant. Semiochemicals appear to be a viable possibility and environmentally friendly approach to control these pests. Amongst semiochemicals both volatile and non-volatile compounds can be highlighted. Several attempts have been made to identify the giant borers feromone composition, but no progress is reported. Among the non-volatile semiochemicals it is worth highlighting the epicuticular compounds (EC) that act on protection and appears to be involved in short distance communication between insects. This study aimed to characterize the epicuticular compounds (ECs) of the giant borer and verify the antimicrobial activity. ECs were extracted from larvae and adults (male and female) and identified by chromatography coupled to mass spectrometry (GC/MS). The antimicrobial activity of ECs from caterpillars were evaluated against four sugarcane endophytic microorganisms: *Pectobacterium corotovorum*, *Bacillus cereus*, *Bacillus pumilus* and *Bacillus sp.* Results showed that the ECs from caterpillars and adults (male and female) differ in chemical composition. The ECs from caterpillars presented mainly long chain esters, reaching 98% from the total composition. The ECs of adult males and females showed similar profiles composed mostly by n-alkanes (C-23 to C-30). The caterpillars ECs exhibited antimicrobial activity against both *Bacillus sp.* and *Bacillus cereus*. Moreover, the male presented ECs three unique compounds that may be involved in communication between the sexes.