

# Electrophysiological Studies and Identification of Possible Sex Pheromone Components of Brazilian Populations of the Sugarcane Borer, *Diatraea saccharalis*

Luciane G. Batista-Pereira<sup>a</sup>, Ellen M. Santangelo<sup>b</sup>, Kathrin Stein<sup>a</sup>,  
C. Rikard Unelius<sup>c</sup>, Alvaro E. Eiras<sup>d</sup> and Arlene G. Corrêa<sup>a,\*</sup>

<sup>a</sup> Departamento de Química, Universidade Federal de São Carlos,  
13565-905 São Carlos – SP, Brazil

<sup>b</sup> Department of Chemistry, Organic Chemistry, Royal Institute of Technology,  
SE-100 44 Stockholm, Sweden

<sup>c</sup> Department of Chemistry and Biomedical Sciences, University of Kalmar,  
SE-391 82 Kalmar, Sweden

<sup>d</sup> Departamento de Parasitologia, Universidade Federal de Minas Gerais,  
31270-901 Belo Horizonte – MG, Brazil. E-mail: agcorrea@dq.ufscar.br

\* Author for correspondence and reprint requests

Z. Naturforsch. **57c**, 753–758 (2002); received January 24/March 12, 2002

*Diatraea saccharalis*, Sex Pheromone, (9Z,11E)-Hexadecadienal

Virgin female gland extracts of sugarcane moth *Diatraea saccharalis* (Fabricius) (Lepidoptera: Pyralidae), from three locations in Brazil, have been analyzed. By GC-MS analysis and comparison of the chromatographic retention time of the components of the pheromone gland with those retention times of synthetic standards, we observed the presence of (Z)-hexadec-11-enal (**1**), hexadecanal (**2**), (9E,11Z)-hexadecadienal (**4**), (9Z,11Z)-hexadecadienal (**5**) and (9E,11E)-hexadecadienal (**6**), as minor components besides the major constituent (9Z,11E)-hexadecadienal (**3**) already reported. We found no variations in the composition of the gland extracts deriving from the three Brazilian populations and only two compounds, (Z)-hexadec-11-enal (**1**) and (9Z,11E)-hexadecadienal (**3**), elicited antennal responses (GC-EAD). In electroantennography (EAG), however, pure compounds **1** and **3**, a binary mixture containing **1** and **3**, and a mixture containing all of the six synthetic compounds **1–6** elicited a depolarization in male antennae of *D. saccharalis*, without any statistically different delay. The EAG responses to the other isomers of 9,11-hexadecadienal were small and not significantly different from the control, except for the (9Z,11Z)-isomer (**5**) which showed a relatively strong electroantennal activity.