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IMPROVING THE BLEND: ADDITIONAL BEHAVIOURALLY ACTIVE GLAND CONSTITUENTS IDENTIFIED IN FEMALE *Diatraea saccharalis* (LEPIDOPTERA: CRAMBIDAE).

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ABSTRACT: The sugarcane borer, *Diatraea saccharalis* (Fabricius) (Lepidoptera: Crambidae), is the major pest insect attacking sugarcane crops in Brazil. Population control of this moth by insecticide treatment is not efficient due to simultaneous presence of all developmental stages throughout the year, and larval feeding inside the sugarcane stalk, so alternative control methods are needed. Two female-produced sex pheromone components, (*Z*,*E*)-hexadeca-9,11-dienal and (*Z*)-hexadec-11-enal, have previously been reported to elicit antennal activity and behavioural response of males in flight tunnel experiments. However, the attractiveness of these compounds in field tests has been very low. Via chemical, electrophysiological and behavioural analyses, we have identified two additional female-produced compounds in *D. saccharalis*, which are active to conspecific males, as (*Z*)-hexadec-9-enal and hexadecanal. In analyses with coupled gas chromatography and electroantennography, these compounds elicited consistent antennal response in males. In flight tunnel assays, the behavioural response to a quaternary blend was significantly higher when compared with the previously identified binary blend. In addition, the ternary mixtures containing (*Z*)-hexadec-9-enal or hexadecanal were as attractive as the quaternary blend, indicating some redundancy in the use of active compounds in this species. We conclude that additional compounds are part of the sex pheromone of *D. saccharalis*, which may improve the efficiency of trap lures for monitoring of this pest.