
16th Workshop on

SUSTAINABLE HORTICULTURAL PRODUCTION IN THE TROPICS

Special Topic

*Strengthening the Experimental Research
Environment – Laboratory Techniques*

Chuka University, Chuka - KENYA

28th November – 2nd December 2016

PROGRAM AND ABSTRACTS

Organizers:

Horticultural Association of Kenya (HAK), Kenya

Chuka University, Kenya

Institute of Horticultural Production Systems, Leibniz Universität Hannover,
Germany

Sponsor: German Academic Exchange Service (DAAD), Germany

30. Volatile compounds from coffee berries elicit responses in the coffee stink bug, *Antestiopsis thunbergii* (Heteroptera: Pentatomide)

Njihia T^{St,1,2, ✉}, Torto B¹, Murungi LK², Irungu J¹, Mwenda D¹ and Babin R^{1,3}

¹ International Centre of Insect Physiology and Ecology (icipe), Nairobi, Kenya

² Jomo Kenyatta University of Agriculture and Technology (JKUAT), Juja, Kenya

³ Centre de Coopération Internationale en Recherche Agronomique pour le Développement (Cirad), Montpellier, France.

✉: tnjihia@icipe.org

Abstract

International trade of coffee from the great lakes region of Africa is threatened by the coffee stink bug, *Antestiopsis thunbergii* and its association with poor quality liquor, often called the “potato taste defect”. Previous studies have reported that immature coffee berries are strongly preferred by the pest unlike other coffee parts in the field. To test whether olfactory cues mediate the coffee bug’s host selection process, behavioral and electrophysiological assays were conducted using headspace volatiles from coffee berries at two different stages of maturity. Additionally, coupled gas chromatography/mass spectrometry (GC/MS) was used to analyse the chemical composition of the volatiles emitted by the two coffee berry stages. In behavioural assays, whereas volatiles of immature berries attracted the coffee bug, volatiles of mature berries repelled it. Various chemical groups including; aldehydes, esters, hydrocarbons and terpenes which contribute to the divergent behavior of *A. thunbergii* towards coffee berries of different maturity stages and their possible use in pest management will be discussed.

Keywords: coffee, *Antestiopsis thunbergii*, immature, mature, attractant, repellent