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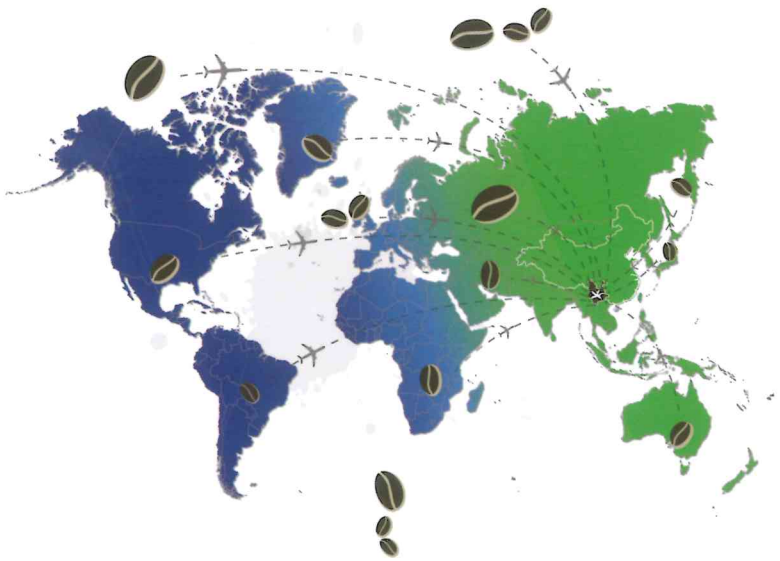
第26届世界咖啡科学大会
会议论文集



NOVEMBER 13rd-19th. 2016

KUNMING CHINA 中国·昆明

PA159 Pheromones of the Coffee Antestia Bug, *Antestiopsis thunbergii* and Their Potential Application in the Management of the Pest.

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Rationale

Antestia bugs, *Antestiopsis thunbergii* (Hemiptera: Pentatomidae), are major pests of coffee in Africa. They feed on coffee shoots, flower buds and growing berries leading to crop losses. In the African Great Lakes region, Antestia bugs infestation and damage on coffee are linked to liquor quality defect, also known as "potato taste defect". Currently, Antestia bugs are controlled mainly by pesticides, which is often inefficient and/or pollute the environment. Pheromones are known to mediate chemical communication in many insects and often contribute to behaviours such as aggregation and mate finding. Integration of pheromones in the control of Antestia bugs is recommended as they are biodegrable and effective in small amounts. This study investigates the pheromones of the coffee bug and explores their potential application in the monitoring and mass trapping of the pest.

Methods

Behavioural assays were conducted in a dual choice olfactometer, to test responses of unmated sexually mature *A. thunbergii* males and females to either sex. The pheromones produced by both sexes were collected by headspace on an adsorbent and direct extraction from metathoracic glands. Pheromones were analysed by gas chromatography/mass spectrometry (GC/MS) and gas chromatography/electro antennographic detection (GC/EAD).

Results

Behavioural assays showed that *A. thunbergii* males attracted both males and females. More than 30 compounds including aldehydes, esters and alkanes, have been identified from Antestia bugs, most of which are common pheromones associated with pentatomids. Preliminary, GC/EAD analysis isolated five antenally-active components that have been screened for pheromonal activity.

Conclusions & Perspectives

Antestiopsis thunbergii produce male-specific compounds that attract both sexes. Plans are underway to field test these pheromones for their potential in monitoring and mass trapping of Antestia bugs.

References

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2. Millar, J.G., (2005). Pheromones of True Bugs. *Top curr chem*. 240:37–84.