

Semiochemicals to control the Walnut husk fly *Rhagoletis completa*



Landry Sarles, Agnès Verhaeghe, François J. Verheggen
(fverheggen@uliege.be)



Functional and Evolutionary Entomology, University of Liège, Gembloux Agro BioTech

Several European countries are important walnut producers and they have to deal with the recent introduction of the Walnut Husk Fly, *Rhagoletis completa* (Diptera, Tephritidae), that causes severe economic losses. We aim to identify the volatile organic compounds of the walnut husk and develop a semiochemical-based control. Volatiles would be used as an attractant component in a Push Pull strategy.



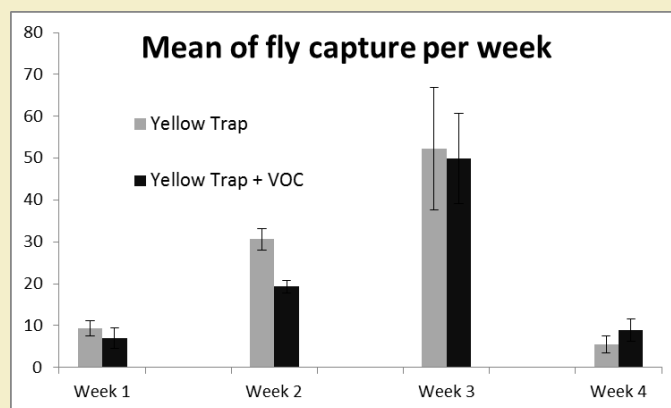
Volatile Collection and Identification : Walnuts were placed in clean glass chambers to collect their volatile compounds on a cartridge filled with 30mg HayeSeq Q. We found 12 major compounds representing 94% of the total volatile blend.

Compounds	Relative proportion (%)
α -pinene	3
β -pinene	4
limonene	1
2-ethyl hexanol	20
1.8 cineole	4
trans linalool	6
undecane	5
nonanal	6
propanoic acid	3
eugenol	38
tetradecane	1
β -caryophyllene	3

Formulation : A rubber septum was loaded with a synthetic blend that qualitatively mimics the volatile profile identified from the walnut husk.



Field experiment : Attraction between a yellow sticky trap with and without the blend was compared.



Conclusion : The number of fly captures for the two different traps were, however, similar during both field seasons. This may be due to the fact that the odors emitted by the dispensers do not overcome the general smell of the walnut orchard. We now aim at evaluating the potential of mating disruption, using the recently discovered *R. completa* sex pheromone.

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