



Abstract

Tephritids Gut Microbionts: Diversity, Volatile Emissions and Their Impact on Fly Behaviour [†]

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Abstract: The interaction between insects and their gut microorganisms is an interesting and promising field of ecological and entomological research. The importance of microbionts in the life history traits of fruit flies has been well-studied in several tephritid species belonging to the genera *Anastrepha*, *Bactrocera*, *Ceratitis* and *Rhagoletis*. However, the production of microbial volatile organic compounds (mVOCs) and their role in tephritid fruit fly–microorganism interactions has been overlooked. As the symbiosis of tephritids with their associated gut bacteria could be a promising pathway for biocontrol, the potential use of mVOCs for Tephritidae fruit fly pest control management is of particular interest. This presentation demonstrates the known information regarding the composition and diversity of the microbial community in tephritid fruit fly guts and their effect on fly attraction. It also presents information about the mVOCs identified in attractive gut bacterial odours. The overview of fruit fly–microbe chemical relationships identifies knowledge gaps and provides a potential scope for further research to develop new semiochemicals for fruit fly pest management.

Keywords: microbiont; bacteria; yeast; microbial volatile organic compounds; Tephritidae; attraction; insect–microbe interaction



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