

Title Volatile organic compounds produced by *Saccharomyces cerevisiae* inhibit the in vitro development of *Guignardia citricarpa*, the causal agent of citrus black spot

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Abstract

Due to the low chemical control effectiveness of citrus black spot, caused by the fungus *Guignardia citricarpa* at postharvest, and to the search for alternative control methods, this study aimed to evaluate the in vitro effect of volatile organic compounds (VOCs), produced by yeast *Saccharomyces cerevisiae*, on *G. citricarpa*. It was observed that the yeast strains evaluated acted as antagonists by VOC production, whose maximum inhibitory capacity was as high as 87.2%. The presence of fermentable carbon sources in the medium was essential for the bioactive VOC production by the yeast. The analysis of VOCs produced in PDA medium by SPME–GC–MS indicated the presence of high quantities of alcohols as well as esters. An artificial VOC mixture prepared on the basis of the composition of the VOCs mimicked the inhibitory effects of the natural VOCs released by *S. cerevisiae*. Thus, the VOCs produced by the yeast or the artificial mixtures can be a promising control method for citrus black spot or others postharvest diseases.

<http://www.springerlink.com/content/n75x074k581888p7/fulltext.pdf>