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Review Article

FLORAL RESOURCE-MEDIATED CHEMICAL ECOLOGY IN THE CONTEXT OF CONSERVATION BIOLOGICAL CONTROL

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ABSTRACT: **Conservation biological control endeavors to boost the populations of natural enemies by combating insect pests in agricultural settings, typically achieved through the intentional introduction of flowering plants as essential food resources for insects. This study investigates the significance of floral volatiles as semiochemicals, playing a crucial role in attracting parasitoids to these requisite food sources. Moreover, the microbiome of plant roots, hosting beneficial microbes, contributes to enhanced plant health. The induction of systemic resistance (ISR) emerges as a vital mechanism, whereby the specific plant growth-promoting bacteria and fungi in the rhizosphere prepare the entire plant for heightened defense against a diverse array of pathogens and insect herbivores. Additionally, the research explores infochemical-based strategies to effectively manage hyperparasitoids. A promising approach involves the implementation of a 'push-pull' strategy, aiming to repel hyperparasitoids from their parasitoid hosts ('push') while simultaneously drawing them toward strategically placed traps ('pull').**

Keywords: *Biological control, hyperparasitoids, micro organisms, parasitoids, push-pull strategy*

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INTRODUCTION

Conservation biological control strives to boost the numbers of natural enemies of insect pests within crop environments and enhance their effectiveness through adjustments to the biotic surroundings (Shields *et al*., 2019). Chemical ecology aids in the identification of plants that draw natural enemies into cultivation systems and offer nutrient sources (Ayelo *et al*., 2021). Floral odors are instrumental in attracting parasitoids, as these parasitoids tend to visit highly appealing flowers with restricted access to nectar (Bianchi and Wackers, 2008).

Microorganisms, including bacteria and fungi, are linked with the nectar found in flowers. Microbes can establish colonization in flowers at an early stage, sometimes even before anthesis (Vannette, 2020). Hyperparasitoids are present in various