

## Behavioral Responses of *Coccinella septempunctata* and *Diaeretiella rapae* toward Semiochemicals and Plant Extract

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**Abstract :** The chemical ecology of natural enemies can play a pivotal role in any Integrated Pest Management (IPM) program. Different chemical cues help to correspond in the diversity of associations between prey and host plant species. *Coccinellaseptempunctata* and *Diaeretiellarapae* have the abilities to explore several chemical cues released by plants under herbivore attack that may enhance their efficiency of foraging. In this study, the behavioral responses of *Coccinellaseptempunctata* and *Diaeretiellarapae* were examined under the application of two semiochemicals and a plant extract and their combinations using four-arm olfactometer. The bioassay was consists of a pairwise treatment comparison. Data pertaining to the preference of *C. septempunctata* and *D. rapae* after treatment application were recorded and analyzed statistically. The mean number of entries and time spent of *Coccinellaseptempunctata* and *D. rapae* were greater in arms treated with E- $\beta$ -Farnesene. However, the efficacy of E- $\beta$ -Farnesene was enhanced when combined with  $\beta$ -pinene. Thus, the mean number of entries and time spent of *C. septempunctata* and *D. rapae* were highest in arms treated with the combination of E- $\beta$ -Farnesene x  $\beta$ -pinene as compared with other treatments. The current work has demonstrated that the insect-derived semiochemicals may enhance the efficacy of natural enemies when applied in combination.

**Keywords :** olfactometer, parasitoid, predator, preference

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