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Role of VOCs from *Brassica oleracea* in host location processes of *Bagrada hilaris*: electrophysiological and behavioral studies

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The Painted bug, *Bagrada hilaris* Burmeister is an herbivorous insect native of Asia and Africa, invasive in Southern Europe and North America where it causes major damage on various vegetable crops mainly belonging to Brassicaceae family. Young plants at cotyledon stage of *B. oleracea* are particularly attractant and susceptible to *B. hilaris* feeding activity. To elucidate the main volatile organic compounds (VOCs) involved in the attraction of *B. hilaris* individuals toward the host plant *B. oleracea*, laboratory experiments were carried out using vertical Y-shaped olfactometer and electroantennographic techniques (EAG). Both adults and late nymphal instars were used in these experiments. Olfactometer experiments were done with young seedlings (one week old) and their VOCs headspace extract collected by porapak Q and eluted in hexane. The VOCs elution was tested and afterward fractionated by silica gel column in order to assess the active fraction. Result indicated attraction of adults and nymphs toward volatiles of living seedlings and their VOCs extract. Furthermore, the non-polar fraction elicited attraction while no response was determined by polar fractions. These results were confirmed by the EAG experiment: only the whole extract and non-polar fraction elicited significant response. These data suggest that the non-polar compounds emitted from young seedlings of *B. oleracea* can play an important role in *B. hilaris* host location processes.