

Responses of vespid wasps to floral volatiles of *Hedera helix* L. and *Heracleum sphondylium* L.

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Social vespid wasps forage on flowers which have easy accessible nectar. To find their host plants, we assume that wasps use scent components emitted by the flowers. The aim of this study was to investigate the olfactory cues which contribute to the attraction of vespid wasps to *Hedera helix* and *Heracleum sphondylium*. As *H. helix* is also visited by flower specialist *Colletes hederæ* bees, we additionally analyzed the scent components that might be used by this bee species to find their host plants. We hypothesize that generalist flower visitors such as wasps use different scent components to find their host flowers than specialist bees. Volatiles were collected using dynamic headspace methods and analyzed using gas chromatography coupled to mass spectrometry (GC MS). Electrophysiological responses to floral volatiles were examined using GC coupled to electroantennographic detection (GC EAD). Furthermore, we tested the attractiveness of the floral scent in bioassays. Most abundant floral compounds were 4-oxoisophorone and linalool in *H. helix* and *H. sphondylium* scent, respectively, followed by (E)-linalool oxide furanoid as second most abundant compound in both plants. Wasps and bees responded overall to 54 EAD-active compounds, with some compounds being only active in wasps, others in bees. We have not yet tested the attractiveness of all analyzed scent bouquets for wasps and bees, but we could show that the olfactory cues of *H. sphondylium* flowers are highly attractive for wasps. The study identified for the first time physiologically active compounds in *Hedera* and *Heracleum* flowers, which seem to be involved in the foraging behavior of vespid wasps and *Colletes* bees.

Taxonomie, Biogeographie und Bionomie von Vertretern des *Celonites abbreviatus*-Komplexes in der Westpaläarktis (Hymenoptera: Vespidae: Masarinae)

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Die Vertreter des *Celonites abbreviatus*-Komplexes unterscheiden sich von anderen Pollenwespen darin, dass bei ihnen die Frons und teilweise auch der Clypeus dicht mit am Ende knopfartig verdickten Sammelborsten besetzt sind (Mauss 2013). Diese bilden gemeinsam eine charakteristische Kopfbürste, die nach Untersuchungen von Schremmer (1959) und Müller (1996) zur Aufnahme von Pollen aus nototriben Blüten dient.

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