

## ABSTRACT

**THESIS:** Extraction of Potential Chemical Attractants from *Rudbeckia hirta* Inflorescences

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**DATE:** July 2009

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We aimed to identify the volatile compounds in inflorescences of *Rudbeckia hirta* that may be responsible for the olfactory attraction of the crab spider *Misumenoides formosipes* to this plant.

Our approach was to use ultrasonic extraction, separate the extract into fractions using flash chromatography with different solvent systems, and test the attraction of the male spiders to the pooled fractions using a y-tube olfactometer. Ultrasonic extraction is carried out using a mixture of 1:2 hexane/diethyl ether with 10 g of inflorescences for 30 minutes. Bioassay results indicated that male spiders chose the inflorescences, bulk ultrasonic extract, and the pooled 100% dichloromethane fractions over controls. Nuclear magnetic resonance experiments and infrared spectroscopy experiments were carried out on the 100% dichloromethane fractions and these experiments indicated that a long chain hydrocarbon is the main component in the 100% dichloromethane fractions.