

Phytotoxicity of Major Constituents of the Volatile Oil from Leaves of *Artemisia scoparia* Waldst. & Kit.

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Z. Naturforsch. **63c**, 663–666 (2008); received March 6/April 7, 2008

The phytotoxicity of the three major monoterpene constituents of the essential oil from leaves of *Artemisia scoparia* Waldst. & Kit. (redstem wormwood) was investigated. GC/GC-MS analysis revealed that the essential oil (yield 0.84%) is a complex mixture containing 19 monoterpenes, 7 sesquiterpenes and 15 other compounds – aliphatic alcohols, ketones, aromatic hydrocarbons and esters. The three major monoterpenes were β -myrcene (30.2%), *p*-cymene (12.8%) and *dl*-limonene (12.4%). The essential oil and the three monoterpenes exhibited phytotoxicity and reduced germination, seedling growth, chlorophyll content and percent respiration of *Avena sativa* and *Triticum aestivum* in a dose-response manner. The inhibitory effect of monoterpenes was comparatively smaller than of the crude essential oil and β -myrcene was most toxic followed by *p*-cymene, whereas limonene was least toxic. The study suggests that *A. scoparia* oil and β -myrcene can be explored for phytotoxicity against weeds.

Key words: *Artemisia scoparia*, β -Myrcene, Phytotoxicity