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BEHAVIORAL AND OLFACTORY RESPONSE OF SPRUCE BUDWORM (LEPIDOPTERA: TORTRICIDAE) TO HOST VOLATILES

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The spruce budworm, *Choristoneura fumiferana*, is the major defoliator of balsam fir-spruce forests across North America. Although terpenes are characteristic chemical components of conifers, their role as host finding and oviposition cues for the spruce budworm has not been fully assessed. Females oviposit on foliage needles. Hence volatile emissions from host foliage were collected from trees in the field by means of SPME fibers and identified by GC/MS. Oviposition preference for identified compounds was assessed in a large cage, dual-choice bioassay and compared with selected nonhost volatiles. Compounds were released from polyethylene vial caps at measured, physiologically realistic rates. Particular attention was given in this study to the effects of enantiomers of chiral terpenes on oviposition and EAG responses to assess the female's ability to discriminate between enantiomers.