

New characters and redescription of *Dendroctonus vitei* (Coleoptera: Curculionidae: Scolytinae): supplemental material

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Analysis of volatiles present in hindguts of emerged *Dendroctonus vitei*

Methods. Infested *P. pseudostrobus* bark was collected 27 April 2011 near San Jose Poaquil, Chimaltenango, Guatemala, and held in cloth bags. Adults that emerged three days later were held on moistened paper towels for four days prior to extraction. Hindguts together with the final abdominal tergite were removed with a sharp forceps and steeped in 50 μ l 99%, high-performance-liquid-chromatography-grade ethanol (spiked with 3.8 ng/ μ L cycloheptanone as an internal standard) for one hour. Afterward the hindgut was removed from the vial with a fine wire hook and preserved separately; the extract vials were tightly capped and stored at ambient temperature prior to analysis. Two microlitres of each sample were analysed splitless by GC-MS (a Hewlett Packard GCD model G1800C) employing a polyethylene glycol capillary column (HP-INNOWax; 60 m x 0.25 mm x 0.25 μ m film). The temperature program was 40 °C for one minute, 16 °C/minute to 80 °C, then 7 °C per minute to 240 °C, and held for 10 minutes. Compounds were identified by matches of retention times and mass spectra with those of identified standards (Fig. S1). Compounds were quantified with a dilution sequence of known concentrations of each compound and normalised against the cycloheptanone standard present in both the dilutions and samples. Hindguts of five male and two female *D. vitei* were analysed.

Results. Hindgut contents of the five sampled, emergent male *D. vitei* were dominated by a single compound, 1-phenylethanol, which ranged from 0.41–6.3 μ g per beetle. The second most abundant compound, myrtenol, was on average 1/60 the concentration of 1-phenylethanol. In neither sex were frontalin or brevicomin detected. In addition to myrtenol, traces of other oxygenated monoterpenes were detected including verbenone, *alpha*-terpineol, linalool, and terpinen-4-ol. Traces of acetophenone were also present in the males. The two emergent female hindguts contained traces of 1-phenylethanol and acetophenone but otherwise were essentially devoid of volatile compounds.

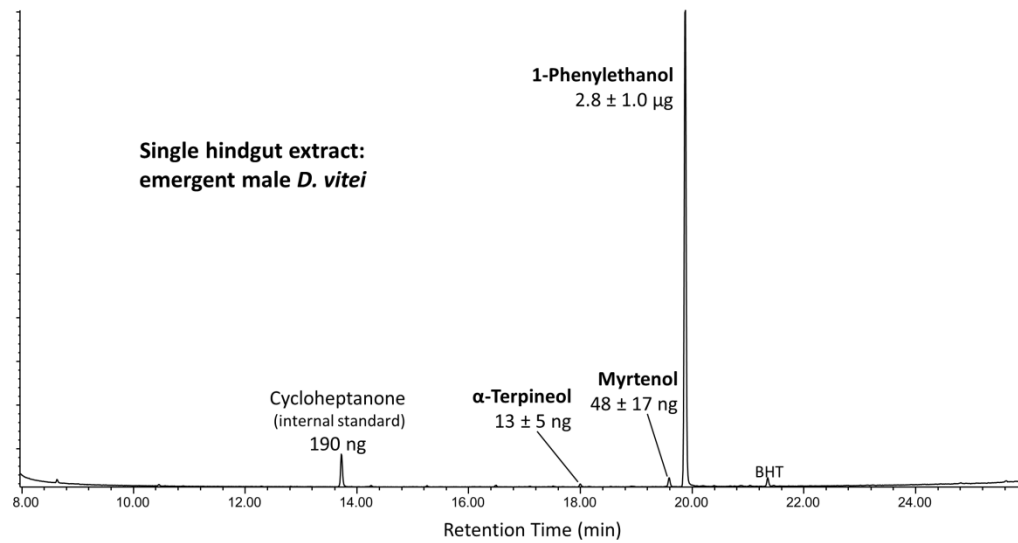


Figure S1. Total ion chromatogram of a hindgut extract of a single male *D. vitei* collected in Chimaltenango, Guatemala. Mean and standard error of compound quantities in extracts of five sampled males are shown beneath compound name.