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# Behavioral and Electroantennographic Responses of the Tea Shot Hole Borer, Euwallacea fornicatus, Eichhoff (Scolytidae: Coleoptera) to Volatiles Compounds of Montanoa bipinnatifida (Compositae: Asteraceae) and Development of a Kairomone Trap



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**Abstract :** The shot hole borer (SHB), Euwallacea fornicatus (= Xyleborus fornicatus) (Scolytidae: Coleoptera) is one of the major pests of tea in southern India and Sri Lanka. The partially dried cut stem of a jungle plant, Montanoa bipinnatifida (C.Koch) (Compositae: Asteraceae) reported to attract shot hole borer beetles in the field. Collection, isolation, identification and quantification of the emitted volatiles from the partially dried cut stems of M. bipinnatifida using dynamic head space and GC-MS revealed the presence of seven compounds viz. α- pinene, β- phellandrene, β - pinene, D- limonene, trans-caryophyllene, iso- caryophyllene and germacrene– D. Behavioural bioassays using electroantennogram (EAG) and wind tunnel proved that, among these identified compounds only α - pinene, trans-caryophyllene, β – phellandrene and germacrene-D evoked significant behavioral response and maximum response was obtained to a specific blend of these four compounds @ 10:1:0.1:3. Field trapping experiments of this blend conducted in the SHB infested field using multiple funnel traps further proved the efficiency of the blend with a mean trap catch of 176.7 ± 13.1 beetles. Mass trapping studies in the field helped to develop a kairomone trap for the management of SHB in the tea fields of southern India.

**Keywords :** electroantennogram, kairomone trap, Montanoa bipinnatifida, tea shot hole borer
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