

CHEMICAL AND ELECTROPHYSIOLOGICAL STUDIES ON SUNN PEST, *Eurygaster integriceps*,

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Abstract – The Sunn pest, *Eurygaster integriceps* Puton (Hemiptera; Heteroptera; Scutelleridae) is the most damaging insect pest of wheat and barley in countries of West Asia. Previous work has shown that adult male bugs produce a number of chemicals, and these have been implicated in attraction between the sexes. In this study, volatiles were collected from insects by air aeration and trapping on Porapak resin and solid-phase microextraction (SPME) fibres. Male bugs were shown to produce large amounts of homo- β -bisabolene identified previously and smaller amounts of bisabolene and vanillin. Ethyl acrylate could not be detected, although reported previously. Female bugs did not produce any of these compounds. These compounds were produced by males only during the light period and only after reaching sexual maturity. When disturbed, both male and female bugs produced (*E*)-2-hexenal, tridecane, (*E*)-2-octenal and (*E*)-4-oxo-2-hexenal, compounds shown to be produced from glands in the thorax. In analyses of volatiles from male bugs by gas chromatography linked to electroantennographic recording from a female bug, no consistent significant responses were observed to any of the components present.

Keywords - Sunn pest, *Eurygaster integriceps*, Hemiptera, Heteroptera, Scutelleridae, pheromone, semiochemicals, intraspecific communication, β -homobisabolene, bisabolene, vanillin.