

BEHAVIOURAL RESPONSES OF SUNN PEST, *Eurygaster integriceps*, TO VOLATILES FROM CONSPECIFIC INSECTS AND HOST PLANTS

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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 with infestations spreading over 15 million ha in the affected area. The aim of these studies was to develop methods for bioassaying the responses of *E. integriceps* to volatile signals from live insects and host plants and also to collections of volatiles from the insects. In a slow-speed windtunnel with the bugs confined in longitudinal channels, there was some evidence for attraction of female bugs to male bugs on wheat seedlings and for repellency of females by female bugs on the seedlings. Bugs were found to move most easily along tubular devices 3-5 mm in diameter, and they are probably negatively geotropic and positively phototropic. A vertical Y-tube, linear-track olfactometer was developed which allowed comparison of responses of bugs to two stimuli in terms of number responding and time taken to respond. Females did not respond to volatiles from wheat or wheat with live conspecific males, but were attracted to wheat with live females. Males were not attracted to volatiles from wheat or wheat with live bugs of either sex. Females were significantly attracted to wheat with volatiles collected from male bugs on Porapak when an amount equivalent to 19.2 bug hr was used but not with one quarter this amount. More females went to the arm with odour from wheat and vanillin (1 µg) than to the arm with odour from wheat only, but the difference was not significant with the number of insects used. A preliminary experiment indicated that females were repelled by a blend of synthetic components of the metathoracic gland exudate. The significance of these results in terms of mate location in this species is discussed.

Key Words - Sunn pest, *Eurygaster integriceps*, Hemiptera, Heteroptera, Scutelleridae, pheromone, semiochemicals, intraspecific communication.