

Hydrocarbon profile of *Earias vittella* (Fab.) and *Spodoptera litura* (Fab.)

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ABSTRACT

Hexane extracts of whole body wash of male and female moths of *Earias vittella* and *Spodoptera litura* were analysed separately by gas chromatography for determining their hydrocarbon profile, which showed the presence of straight chain saturated hydrocarbons ranging from C₈ to C₃₅ (0.02 µg/g to 2579 µg/g). The GC studies of male *E. vittella* revealed the presence of 6 hydrocarbons ranging from C₁₂ to C₂₉. Dodecane (C₁₂) was present in highest concentration 72.02 µg/g followed by tridecane (C₁₃) and nonadecane (C₁₉) whereas in female whole body wash recorded a total of 9 hydrocarbons ranging from C₉ to C₃₁. Concentration of dodecane (C₁₂) was the highest 76.80 µg/g followed by nonadecane (C₁₉). Whole body wash of male *S. litura* revealed the presence of 17 hydrocarbons ranging from C₈ to C₃₅. Highest concentration of pentadecane (C₁₅) 2579.87 µg/g followed by octane (C₈) 1000.22 µg/g was recorded whereas in female *S. Litura*, six saturated hydrocarbons ranging from C₉ to C₂₅ were detected. Concentration of dodecane (C₁₂) was the highest 100.67 µg/g, followed by tridecane (C₁₃) 52.07 µg/g. Generally, the concentrations of hydrocarbons and numbers were quite high in male *S. litura* whole body wash. From the study, it is inferred that qualitative and quantitative differences in the hydrocarbons of the host or prey insects may be responsible for their preference or non-preference by their natural enemies

Key words: *Earias vittella*, Saturated hydrocarbons, *Spodoptera litura*

Hydrocarbons are present on the surface of all insects and play an important role in the insect life including anti-desiccation agents. The cuticular hydrocarbons are emerging as an important chemical in insect communication. Semiochemical functions attributed to hydrocarbons include serving as sex attractants and aphrodisiacs, as species and caste recognition cues, as territory marking, and alarm pheromones, as defense secretions, kairomones, etc. The host insects contain characteristic hydrocarbons, fatty acids and proteins in their body or by-product, which act as stimulants or arrestants to the parasitoids to intensify their search in the near vicinity of the host. Saturated long chain hydrocarbons present on the body surface of *Helicoverpa armigera* and *Corcyra cephalonica*

moths was reported to elicit kairomonal response in *Trichogramma* spp (Anathakrishnan *et al.*, 1991). Keeping in view the importance of hydrocarbons and availability of scanty information two polyphagous insect pests namely *Earias vittella* and *Spodoptera litura* were chosen and their saturated hydrocarbon profiles were identified and quantified through Gas Chromatography.

Materials and Methods

Rearing was carried out on the fruits of okra. The eggs laid on the fruits were removed with wet camel hairbrush and kept for hatching after sterilisation using 10% formaldehyde and water, respectively. Immediately after hatching the larvae were transferred on to the fresh okra fruit (after