Phototaxis (the response of insects to light), though seems to be a common insect population phenomenon, distinctions between different species in their response to light do exist. Certain insects such as cockroaches have negative phototaxis, meaning they are repelled by exposure to light. Moths, flies, beetles and many other flying insects have positive phototaxis, meaning they are naturally attracted to light. These photo responses have been exploited to manage insect pests. One of the early and better integrated pest management (IPM) alternatives to pesticides is the insect light trap. Long before IPM took center stage, the insect light trap was one of the principal weapons in the war with insect pests.

In recent past, seed borer, Trymalitis margarias Meyrick (Lepidoptera : Tortricidae) has become a major pest on sapota causing huge direct fruit loss upto 35% (Jayanthi and Verghese, 2007). The concealed nature of larvae within the seeds renders the management of this pest a real challenge. This prompted a study at Indian Institute of Horticultural Research, Bangalore (12°58’N; 77°38’E), Karnataka, India to explore the photoresponse of the adult Trymalitis moths to light under field conditions during 2007-08. A simple light trap (with ordinary incandescent 40W bulb) was erected in the sapota orchard. A bucket (containing water and insecticide) placed below the light source served as a receptacle to collect the attracted moths. Insects that fly into the light bulb fall into the water and are trapped. The light trap was switched on from early evening until early morning. The trapped insects were collected daily and observations were made on presence/absence of Trymalitis to see the response of the sapota seed borer moths to light.

The results of light trap catch showed that both the sexes of adult T. margarias responded to light. The trap catch coincided with the peak fruiting and infestation period of sapota i.e., during November-January (r=0.78). The maximum cumulative trap catch was observed during the month of December (16 moths/trap) followed by September/October months (9 moths/trap) (Fig. 1). The linear regression showed the variability in the trap catch to the tune of 61% can be explained due to field infestation of seed borer alone (y=0.8352x + 0.0824, R²=0.6122) (Fig. 2). This phototactic response of T. margarias could be exploited for controlling as well as for monitoring their population levels in the field.

Present study provides base line scientific information on sapota seed borer, T. margarias attraction to light under field conditions and could be useful in devising light traps which can be used as monitoring tool in surveillance programs of sapota seed borer. However, comprehensive research studies on T. margaris response to different light spectrums will generate useful data for strengthening the use of light trap
technology in the IPM programs.

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REFERENCES