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RESEARCH ARTICLE

Short communications

TNAU - UV Light Trap: A Device for Mass Trapping Sesame Seed Bug- *Elasmolomus sordidus* (F.) (Hemiptera: Lygaeidae) in Sesame Storage Warehouses

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Elasmolomus sordidus (F.), commonly called sesame seed bug, which is a severe pest of sesame during the preharvest stage and storage. In sesame storage warehouses, it is found hiding inside the gaps of arranged bag stacks during day time and it flies out and feeds on the seeds during night time. Studies were conducted for 8 weeks in a private sesame warehouse in Virudhunagar district of Tamil Nadu, India, to find out whether TNAU- UV light trap attracts *E. sordidus* during night hours. The studies showed that TNAU - UV light trap was found effective for mass trapping adults of *E. sordidus*. The weekly mean of *E. sordidus* adults trapped per UV light trap during the experimental period was 380.38±15.13.

Keywords: *TNAU - UV light trap; Elasmolomus sordidus; Mass trapping; Sesame warehouses; preharvest stage*.

Sesame seed bug, *Elasmolomus sordidus* (F.) (Hemiptera: Lygaeidae) is now becoming a severe pest of sesame storage warehouses. In the day time, it is found to be hiding in between the gaps of the arranged bag stacks in warehouses in the dark places of the warehouses while in the night time it flies and settles over the bag stacks and feeds on the seeds. It is also found to fly over the bag stacks at the day time when the bag stacks are disturbed. During late evening hours, *E. sordidus* was found to be settling over the bag stacks and feeding on the seeds during the entire night time.

E. sordidus was reported to be limiting sesame production in the field and invades the harvested heaps by feeding in large numbers and passes to the storage as a storage pest (Mohanasundaram *et al*., 1980; Mohanasundaram and Sundara Babu, 1987; Kalaiyarasan and Palanisamy, 2002; Teklewold *et al*., 2011 and Langham, 2019). During day time it hides at the base of the heap or in the soil near the base and comes out during evening time and starts feeding up until early morning and female bugs lay their egg in the sesame stacks or in the soil. (Schmutter, 1969; Dick, 1987 and Langham, 2019). Both the nymphs and adults cause quantitative and qualitative loss by sucking the seed content, which leads to shriveled sunken seeds, changes in the seed color, seed bitterness, loss in weight (13%), germination, oil content (50%), which affects the marketability of the seeds (Weiss, 2000; Tahir, 1982; Geremew *et al*., 2012; Elamin *et al*., 2015; Kinati, 2017 and Langham, 2019). Its developmental period from egg to adult is 32.1±0.52 days (Osman *et al.,* 2009 and Langham, 2019). The mean fecundity period of mated female was 112.6±5.65 eggs, and the male to female sex ratio was 1:1.2 (Osman *et al.,* 2009). It was very active during the night hours and was also reported that rainy season is more favorable for the multiplication of the pest than the dry season (Muralibaskaran *et al*., 1998). Its infestation is high during the months of October to November and August to September (Kalaiyarasan and Palanisamy, 2004). Pesticide spray was not effective as the reinfestation of the pest starts after few days (Muez and Berhanu, 2016 and Langham, 2019). It was reported as a significant problematic pest in India, Ethiopia, Sudan, Malawi, Uganda and as a minor pest in Bangladesh (Langham, 2019). Besides sesame, *E. sordidus* was also reported to infest groundnut after harvest (Weiss, 2000; Naawe and Angyiereyiri, 2020 and Langham, 2019).

TNAU - UV light trap has been recommended for the management of stored product insect pests *viz., Tribolium castaneum* (Herbst) and *Rhizopertha dominica* (Fabricius) in grain storage warehouses (Mohan *et al*., 1994). TNAU - UV light trap has also been recommended for the resistance management strategy of phosphine resistance in *Lasioderma serricorne* in turmeric warehouses (Rajesh and Mohan, 2016). Hence, an experiment was carried out to study the efficacy of TNAU - UV light trap in trapping *E. sordidus* in sesame warehouses.

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TNAU - UV light trap was placed in the corner of a warehouse (32×43×20 ft) containing 1500 sesame bags (75 kg/ bag) in a large scale private sesame oil mill at Virudhunagar, Tamil Nadu, India. The study was conducted for a period of 45 days from mid December 2019 to January 2020. TNAU - UV light trap is a multidirectional trap consisting of 4W germicidal lamp. The UV lamp produces ultra violet rays of peak emission around 250 nm (Mohan *et al.*, 1994). The traps were operated during night time between 18:00 to 06: 00 h.

Table 1. Number of *E. sordidus* trapped per TNAU - UV light trap in the sesame warehouse, Virudhunagar

Week No.	Total number of *E. sordidus* trapped in a week
Week 1	425
Week 2	416
Week 3	415
Week 4	397
Week 5	398
Week 6	325
Week 7	346
Week 8	321
Total number of *E. sordidus* trapped in 8 weeks	3043
Mean number of *E. sordidus* trapped per week	380.38

The insects trapped in the collection jar were counted daily and preserved in the glass vials containing 70% ethanol and confirmed by observing under steriozoom microscope. Daily counts were added and reported as *E. sordidus* (adult) trapped per week.

The results showed that the total number of *E. sordidus* trapped per UV light trap in- a week ranged from 321 to 425. The mean number of *E. sordidus* trapped per week was 380.38 and the total number of *E. sordidus* trapped per trap in 8 weeks was 3043 numbers (Table 1).

The results clearly indicated the efficacy of TNAU - UV light trap in trapping *E. sordidus* in the sesame storage warehouses. Hence, TNAU - UV light trap can be recommended for mass trapping of *E. sordidus* in sesame storage warehouses.

Though farmers use methyl demeton dust, it was not effective to control *E. sordidus*. As the seeds are used for oil extraction shortly after pesticide usage, there is a possibility of contamination of insecticide residues in the extracted oil (Diraviam, 2014 and Langham, 2019). Further, *E. sordidus* has been reported as a preharvest pest under field conditions and there is a scope for use of UV light trap under field conditions also. Further studies on this line will throw newer information on the use of TNAU - UV light trap for the management of *E. sordidus*.

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