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Research Journal of Agricultural Sciences
An International Journal

P- ISSN: 0976-1675

E- ISSN: 2249-4538

Volume: 13

Issue: 04

Res. Jr. of Agril. Sci. (2022) 13: 1320–1322

 CARAS



Studies on Incidence of Soapnut Semilooper in Relation to Weather of Different Areas in Prakasum and Nalgonda District

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Received: 19 Apr 2022 | Revised accepted: 12 Aug 2022 | Published online: 22 Aug 2022
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Key words: Insect pest management, Seasonal incidence, Semi looper, Standard week, Soapnut

Sapindus is a genus of shrubs and small trees in the Sapindaceae family. *Sapindus trifoliatus* are known as soap nut, soap berry, washnut, reetha, aritha, dodan, doani and flourishes well in deep clay loamy soil with an annual rainfall of 150-200 mm. The species *S. trifoliatus* is a deciduous tree and occurs in the Western Ghats and plains of South India. The flowers are small greenish white in color and bloom during November to January. The fruit is a small leathery-skinned drupe 1-2 cm in diameter [1]. The fruits are solitary globose appearing in the months of July-August. The fruit is velvety when young and turns hard and smooth on maturing. The fruits and seeds are slightly smaller than the north Indian species. Fruits of *S. trifoliatus* have been considered as a tonic, stomachic, alexipharmic, astringent and sedative to the uterus and also useful in chronic dysentery, diarrhea, cholera, hemicrania, paralysis and epileptic fits in children. The roots used as a collyrium in sore eyes and ophthalmia [2]. The seeds are employed to stimulate the uterus in childbirth.

This study was done to investigate the insect pest of *Sapindus trifoliatus*, based on increased importance and the recent problems of decreasing productivity and large-scale mortality. The need to develop IPM System for the above species was expressed by Andhra Pradesh Forest Department. Integrated Pest Management is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. The findings of the present study are consistent with the view that the incidence of the insect pests of target species will be investigated and possible control measures will be suggested to counter the present problems. This study will address the above issues by studying the insect damage on these trees, and this information would be useful to develop an economical and environmentally acceptable pest management program.

Study area: Mallepally and Devarkonda, Nalgonda district and Kanigiri and Markapur, Prakasam district. The samples were collected from ten soapnut plants selected randomly and measuring different heights in all directions. Plants measuring less than 1 m (1-2 years), 1 to 2 m (2-5 years) and 2 to 3 m (more than five years) height were sampled separately. In case of less than 2 m height, the whole plant was searched for larval population, whereas in case of plants with 2-3 m height, the three samples from each plant were collected at random by plucking the twig (20 cm in length), one each from top, middle and lower portion of the plant. The number of larvae present on leaves of each twig was counted for each sample. The incidence of loopers was categorized into high, moderate, light and nil classes through visual estimation as suggested by Verma *et al.* [3] (2008). The larvae collected during sampling at fortnightly interval were brought to the laboratory and bred for recording life cycle.

Farmers' fields at Kanigiri and Markapur Forest Division and Horticulture research station, Mallepally and Devarakonda survey were conducted for two years from 2016-17 and 2017-18 to record the incidence of soapnut semilooper. Data collected on the larval and moth incidence of semilooper recorded during the survey period have been drawn in Fig. 1-2. It is clear from figures 1 and 2 that the larval incidence varied from place to place and season to season in both the years of observations. In general, the larval population was maximum in Kanigiri, Mallepally, Devarakonda areas when compared to Markapur during both the years of observation. Further, the larval population was more on smaller plants (1-2 m tall) when compared to the grown-up plants (2-3 m tall). During 2016-17, the incidence of *T. eburneigutta* was observed from October first fortnight onwards in Kanigiri and Markapur and First fortnight of June in Mallepally and Devarakonda [4-7].

During 2016-17 the mean larval population per plant varied from 0.7 to 13, 2.0 to 4.7, 13 to 14.1 and 0.9-12.7 in Kanigiri, Markapur, Mallepally and Devarakonda areas respectively (Fig 1). During 2017-18, the larval population was first observed from first fortnight of October at Kanigiri, second fortnight of September onwards in Markapur and whereas at Mallepally and Devarakonda, it was observed during first fortnight of June [8-9]. Further the larval population varied

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from 0.8 to 14.6 at Kanigiri, 0.3 to 3.9 at Markapur, 0.9 to 13.7 at Mallepally and 0.9 to 12.7 at Devarakonda [10] (Fig 2). Maximum peak population build up was observed during

October to February in Kanigiri and Markapur and at Mallepally and Devarakonda areas the peak was from June to October. This pattern did not change across the years (Fig 1-2).

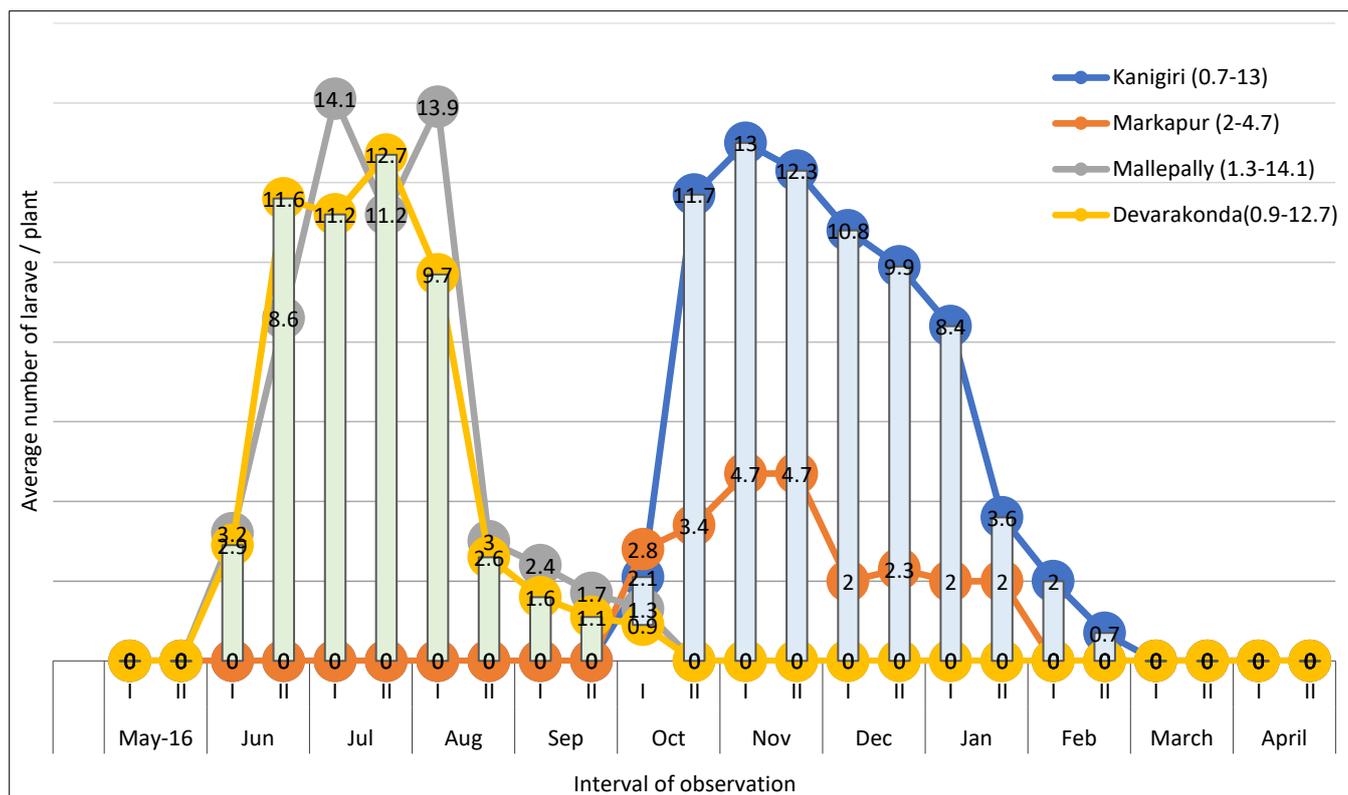


Fig 1 Seasonal incidence of soapnut semilooper at different areas of Forest during 2016-17

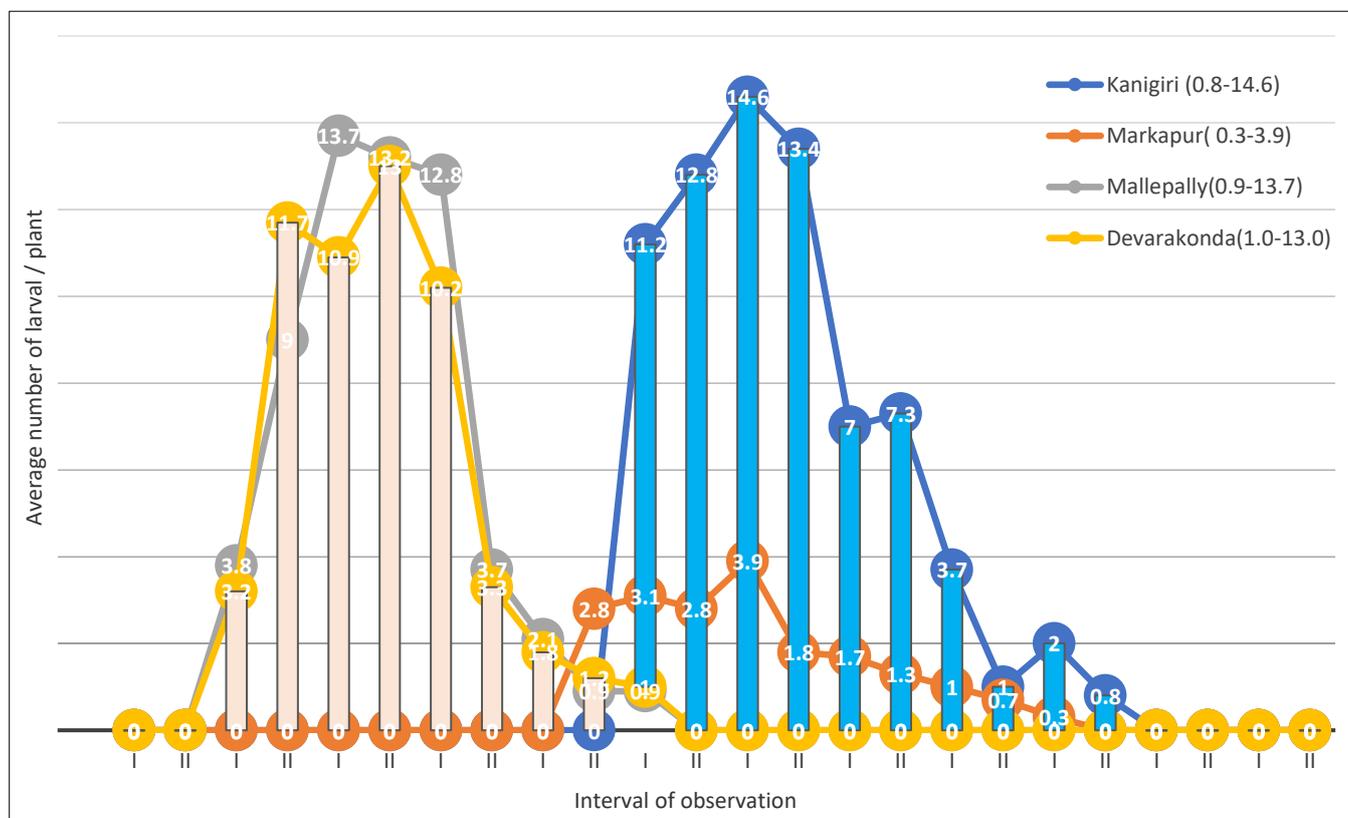


Fig 2 Seasonal incidence of soapnut semilooper at different areas of Forest during 2017-18

Observations are reported of insect pests of *Sapindus* species made during weekly surveys around Bapatla, Andhra Pradesh, in 1987 and 1988. Details are tabulated of common and scientific names, damage caused, seasonal occurrence,

intensity of occurrence, and other remarks for most destructive pest was the blossom webber (*Cydia* sp.), which damaged flowers, nuts and twigs. Other important pests were the tree bug (*Tessaratomia javanica*), the fruit feeders *Virachola* [*Deudorix*]

isocrates and *Virachola* sp., the soap-nut moth (*Serrodes inara* [*Serrodes partita*]), weevils (*Peltotrachelus pubes*, *Amblyrhinusporicollis* and *Mylocerusdiscolor*), flower webbers (*Dichocracia* [*Conogethes*] *punctiferalis*, *Acrobasis* sp. and *Lectithocera* [*Lectithocera*] sp.) and the bark borer *Indarbelatetraonis* [11-12], but information available on Soapnut semi looper *Tinolius eburneigutta*, are fragmented and incomplete. Hand pick and destroy the caterpillars, Set up light trap @1/ha, Spray insecticides as last resort [13-14].

SUMMARY

The study on seasonal incidence of forest insect pests is fairly a virgin field of research in India. The necessity of this important branch of insect ecology for pest management has been well established. In the present investigation, efforts were made to study the seasonal incidence of soapnut semilooper for future management. Soapnut semilooper is an important pest

causing severe damage to soapnut plants. It has been studied at different areas of Telangana and Andhra Pradesh and the results are as under. The larval incidence of soapnut semilooper varied from place to place and season to season in both the years of observations. In general, the larval population was maximum in Kanigiri (Prakasum dist.), Mallepally, Devarakonda (Nalgonda dist.) areas when compared to Markapur (Prakasum dist.), during 2016-18. Further, the larval population was more on smaller plants, when compared to the grown-up plants. The incidence of Soapnut semilooper, *Tinolius eburneigutta* was observed from October first fortnight onwards in Kanigiri and Markapur and First fortnight of June in Mallepally and Devarakonda.

Acknowledgement

The authors express their sincere thanks to Director, OIFB, Hyderabad, Telangana for providing the laboratory facilities to carry out the research project.

LITERATURE CITED

1. Mitharuial BS, Pareek BL, Naqvi AR. 2007. Influence of date of sowing on the incidence of chafer beetle, *Rhinopytiaindica* Burmeister on pearl millet in semi-arid region of Rajasthan, India. *Ind. Jr. Entomology* 69(2): 133-136.
2. Bakshi BK. 1977. *Disease Insect survey Report*. Forest Research Institute, Dehradun, India. pp 46.
3. Verma RK, Sharma N, Soni KK, Jamaluddin. 2008. *Forest Fungi of Central India*. International Book Distributing Company, Lucknow. pp 418.
4. Singh Y, Verma R, Jamaluddin. 2003. Combination of bio-control agents, organic matter and biofertilizer to suppress *Fusarium* wilt and improve growth of *Gmelina arborea* seedlings. *Indian Jr. Trop. Biodiversity* 11: 74-84.
5. Sreedevi SC, Yashoda RH, Prashanti SK. 2009. Management of wilt of patchonli caused by *F. solani*. *Jr. Mycology and Plant Pathology* 39(1): 32-34.
6. Porras MF, Aristóbulo LA. 2009. Effect of extracts from *Sapindussaponaria* on the glasshouse whitefly *Trialeturodesvaporariorum* (Hemiptera: Aleyrodidae). *Rev. Colomb. Entomology* 35(1): 23-25.
7. Sharma D, Bagmare A, Gupta A. 1997. Effect of weather parameters on population build-up of key pests of soybean. *Journal of Insect Science* 10(2): 120-124.
8. Singh SP, Aggarwal N, Dhaliwal L. 2007. Effect of weather parameters on population dynamics of three important pests in cotton at Bathinda region of Punjab. *Environment and Ecology Kalyani* 25(3): 588-590.
9. Mangang CNJSA, Devi KN, Singh KL, Singh AD. 2017. Seasonal incidence of insect pests on soybean in relation to weather parameters. *Legume Research* 40(6): 1139-1140.
10. Hole UB, Salunkhe GN. 1999. Relationship between the population build-up of *Aonidiella aurantii* (Maskell) on rose and weather parameters. *Indian Journal of Agricultural Research* 33(2): 93-102.
11. Bishnoi OP, Singh M, Rao VUM, Niwas R, Sharma PD. 1996. Population dynamics of cotton pests in relation to weather parameters. *Indian Journal of Entomology* 58(2): 103-107.
12. Kumar P, Prasad CS, Tiwari GN. 2007. Population intensity of insect pests of cabbage in relation to weather parameters. *Annals of Plant Protection Sciences* 15(1): 245-246.
13. Singh Y, Verma RK, Jamaluddin. 2002. An integrated approach to control *Fusarium* wilt of *Dalbergia sissoo*. *Indian Forester* 128: 432-438.
14. Nebapure SM, Sagar D, Chander S. 2018. Population dynamics of insect pests on short duration pigeon pea in relation to weather parameters. *Journal of Agrometeorology* 20(3): 234-237.