

INCIDENCE OF DIVERSE INSECT PEST FAUNAIN SOYBEAN CULTIVATED IN SOUTHERN TELANGANA

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Soybean [*Glycine max* (L.) Merrill] is a major oilseed crop in the world and called by various names viz., miracle bean, golden bean, cow of the field, meat of the field, etc. In India, the crop is grown in Madhya Pradesh, Maharashtra, Karnataka, Uttar Pradesh, Rajasthan, Tamil Nadu, Uttarakhand and Telangana as a rain-fed crop during the *Kharif* season. The crop is reported to be attacked by 275 spp. of insect pests of which about a dozen are of economic importance (Singh and Singh, 1989). A study was undertaken to record the insects pests in the soybean ecosystem in the southern region of Telangana.

The trial was laid out during Kharif, 2017 in three staggered sowings i.e. 2nd fortnight of June, 1st and 2nd fortnight of July, 2017 in the college farm, College of

Agriculture, Rajendranagar situated in Ranga Reddy district under southern Telangana region. The variety, JS 335 was grown in black soil in observational plots measuring 100 m² each. The insect pests recorded in soybean from seedling stage till harvest are shown in Table 1 and 2.

During seedling stage, the major insect pests observed were stem fly (*L. trifolii*) and serpentine leaf miner (*M. sojae*) (Fig. 1) while during vegetative stage insect pests like aphids (*Aphis* sp.), tobacco caterpillar (*S. litura*), green semilooper (*C. acuta*), stem girdler (*O. brevis*) and leaf hopper (*Empoasca*) (Fig. 2) were recorded which continued till reproductive stage. Groundnut leaf miner was observed during reproductive stage only (Table 1).

Table 1. Major insect pests of soybean recorded in Southern Telangana Region

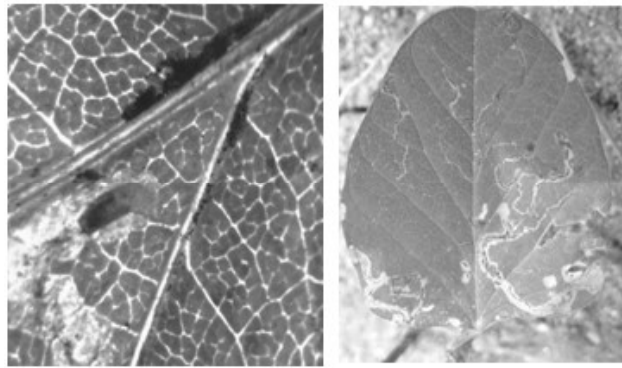
S.No.	Common name	Scientific name	Family	Order	Stage of occurrence
1	Serpentine leaf miner	<i>Liriomyza trifolii</i> Burgess	Agromyzidae	Diptera	Seedling to vegetative stage
2	Soybean stem fly	<i>Melanagromyza sojae</i> (Zehnter)	Agromyzidae	Diptera	Seedling to reproductive stage
3	Soybean aphid	<i>Aphis</i> sp.	Aphididae	Hemiptera	Vegetative to flowering
4	Tobacco caterpillar	<i>Spodoptera litura</i> (Fab.)	Noctuidae	Lepidoptera	Vegetative to reproductive stage
5	Green semilooper	<i>Chrysodeixis acuta</i> (Walker)	Noctuidae	Lepidoptera	Vegetative to reproductive stage
6	Stem girdler	<i>Oberea brevis</i> (Swedenborg)	Cerambycidae	Coleoptera	Vegetative to reproductive stage
7	Leaf hoppers	<i>Empoasca</i>	Cicadellidae	Hemiptera	Vegetative stage to reproductive stage
8	Groundnut leaf miner	<i>Aproaerema modicella</i> (Deventer)	Gelechiidae	Lepidoptera	Reproductive stage

Eighteen insects were recorded as minor pests (Table 2). Of them, beet army worm, castor semilooper, hairy caterpillars, tussock hairy caterpillar, red hairy caterpillar and ash weevil occurred during vegetative stage; Tree hopper and Platispid bug from vegetative to flowering stage; white-winged planthopper, leaf

hoppers, white-spotted leaf beetle, tobacco grasshopper, brown-spotted locust, migratory bird locust during vegetative stage to reproductive stage; leaf webber during flowering to reproductive stage while stink bug, pod bug and coreid bug were recorded during reproductive stage (Fig.3)

Table 2. Minor insect pests of soybean recorded in Southern Telangana Region

S.No.	Common name	Scientific name	Family	Order	Stage of occurrence
Insect Pests					
1	Beet army worm	<i>Spodoptera exigua</i> (Hubner)	Noctuidae	Lepidoptera	Vegetative stage
2	Castor semilooper	<i>Achaea janata</i> L.	Noctuidae	Lepidoptera	Vegetative stage
3	Hairy caterpillars	<i>Cretonotus</i> sp. and <i>Somena scintillans</i> (Walker)	Erebidae	Lepidoptera	Vegetative stage
4	Tussock hairy caterpillar	<i>Orgyia</i> sp. <i>Dasychira</i> sp.	Lymantridae	Lepidoptera	Vegetative stage
5	Red hairy caterpillar	<i>Aloa lactinea</i> (Cramer)	Arctiidae	Lepidoptera	Vegetative stage
6	Ash weevil	<i>Mylocherus</i> spp.	Curculionidae	Coleoptera	Vegetative stage
7	Tree hopper	<i>Otinotus</i> sp.	Membracidae	Hemiptera	Vegetative to flowering
8	Platispid bug	<i>Coptosoma</i> sp.	Platyspididae	Hemiptera	Vegetative to flowering
9	White-winged planthopper	<i>Nisia nervosa</i> (Motschulsky)	Meenoplidae	Hemiptera	Vegetative stage to reproductive stage
10	Leaf hoppers	<i>Cofana</i> sp.	Cicadellidae	Hemiptera	Vegetative stage to reproductive stage
11	Leaf hoppers	<i>Balclutha</i> sp.	Cicadellidae	Hemiptera	Vegetative stage to reproductive stage
12	White-spotted leaf beetle	<i>Monolepta signata</i> Olivier	Chrysomelidae	Coleoptera	Vegetative stage to reproductive stage
13	Tobacco grasshopper	<i>Atractomorpha cretula</i> (Fab.)	Pyrgomorphidae	Orthoptera	Vegetative stage to reproductive stage
14	Brown-spotted locust, migratory bird locust	<i>Cyrtacanthacris statarica</i> L.	Acrididae	Orthoptera	Vegetative stage to reproductive stage
15	Leaf webber	<i>Omoideis indicata</i> (Fab.)	Crambidae	Lepidoptera	Flowering to reproductive stage
16	Stink bug	<i>Nezara viridula</i> (Linnaeus)	Pentatomidae	Hemiptera	Reproductive stage
17	Pod bug	<i>Riptotarsus</i> sp.	Alydidae	Hemiptera	Reproductive stage
18	Coreid bug	<i>Cletus</i> sp.	Coreidae	Hemiptera	Reproductive stage



1) Leaf miner damage



2) Seedling stage



3) Vegetative stage



4) Flowering stage



5) Pre-podding stage



6) Podding stage

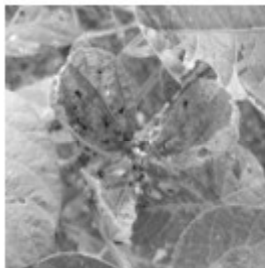


7) Maturity stage

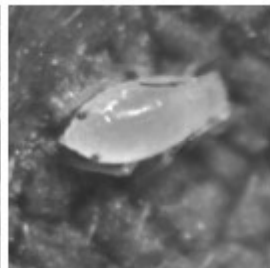


8) Stem tunneling at physiological maturity

Fig 1: Damage during seedling stage by Serpentine leaf miner (1) and Stem fly (2-8)



1) Nymphs and adults of Aphids

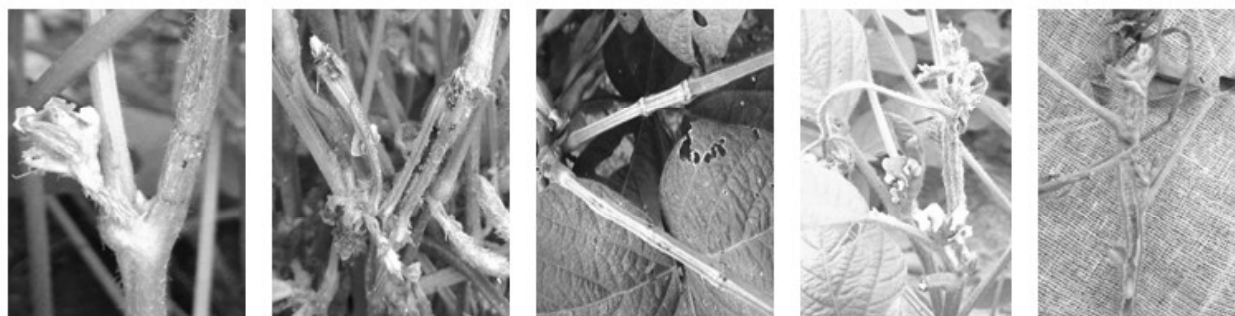


2) *S. litura* larvae



3) *C. acutalvae*





4a) Wilting of terminal twig with entry hole

b) Damage inside stem

c) Girdled stem

d) Grub inside the stem



5) *Empoasca*.

Fig 2: Damage during vegetative to reproductive stage of the crop by various pests



1) *S. exigua*

2) *Cletus* sp.

3) *Riptotarsus* Sp feeding on pods



Atractomorpha crenulata *Monolepta signata* *Myllocerus* spp.

Fig 3 : Other insect pests recorded in soybean crop at various stages

CONCLUSION

The observational trial on the diversity of insect pests in soybean cultivated in Southern Telangana region indicated that 8 major insect pests out of 26 pests recorded have the potential to cause economic damage to the crop in non-traditional area of Southern Telangana region, if sown during 2nd fortnight of June to 2nd fortnight of July.

REFERENCES

Singh, K.J and Singh, O.P. 1989. Off-season activity of soybean leaf miner, *Aproaeremamodicella* (Deventer) on bawachi, *Psoralea corylifora* L. *Legume Research*. 12: 77-80.