

# Insect Pest Status of Pearl Millet (*Pennisetum glaucum* (L.) R. Br.) in Karnataka

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International Journal of Plant Protection, Vol. 2 No. 2 : 189-190 (October, 2009 to March, 2010)

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## SUMMARY

Survey work carried out over four years revealed that a total of 26 insect and 2 non-insect pests were found feeding on pearl millet in Karnataka, India. Out of these, none of them was recorded as major pest (>51% incidence) on this crop, where as eleven pests were recorded as moderate pests (31-50%). As many as ten insect pests were recorded as minor pests (11-30%) on this crop, while seven were recorded as negligible pests (<10%). Among the moderate pests, the adults and nymphs of shoot bug, *Peregrinus maidis* (Ashmead) were found gregariously on peduncle and also in compact earheads leading to chaffy earheads. The blister beetles such as *Cylindrothorax tenuicollis* (Pallas), *Psalydolytta rouxi* Cast and *Mylabris pustulata* (Thunberg) assumed greater importance by recording moderate level of incidence. The sucking pests like *Nezara viridula* Linn. and *Dolycoris indicus* Stal. were recorded as negligible pests and caused damage by sucking sap from the milky grains.

**P**earl millet (*Pennisetum glaucum* (L.) R. Br.) is a major staple crop of north Karnataka. In Bijapur district alone the crop is being cultivated in large areas. Insect pests are one of the important constraints in increasing pearl millet production. Over 100 species of insect pests have been reported to be associated with this crop. However, Prem Kishore and Solomon (1989) listed about 25 species of potential insect pests of cropping systems in India based on pearl millet. The work on the insect pest status of pearl millet in Karnataka is meagre, hence, an attempt has been made to know its insect pest status.

## Key words :

Pearl millet,  
*Pennisetum glaucum*, Insect pest status

## MATERIALS AND METHODS

Field survey was carried out for four consecutive years (2004 to 2007) to know the pest status in pearl millet crop in Bijapur and Bagalkot districts of Karnataka where pearl millet is being cultivated on large areas. The roving survey was taken up during different stages of the crop growth on farmer's fields to record pests. While, the insect pests noticed during various stages of crop growth were also recorded from the crop raised in the Regional Research Station, Bijapur. The data on the incidence of various insect pests were recorded with the help of following index (Balikai, 2000).

Infestation level	Category
Less than 10%	Negligible pest
11 to 30%	Minor pest
31 to 50%	Moderate pest
More than 51%	Major pest

## RESULTS AND DISCUSSION

In all the fields surveyed, majority of them were sown during June-July and harvested during September-October months. Survey work carried out over four years in two districts revealed that a total of 26 insect and 2 non-insect pests were found feeding on pearl millet. Out of these, none of them was recorded as major pest on this crop with infestation varying from high to very high degree (> 51%), where as eleven pests were recorded as moderate pests. As many as ten insect pests were recorded as minor pests on this crop, while seven were recorded as negligible pests (Table 1).

Grasshoppers were observed more in number near the bund side from where they migrated to the crop. Three grasshoppers viz., *Atractomorpha crenulata* Fab., *Hieroglyphus nigrorepletus* Bol. and *Oxya velox* F. devoured the leaves leaving only midribs. The adults and nymphs of shoot bug, *Peregrinus maidis* (Ashmead) were found gregariously on peduncle and also in compact earheads leading to chaffy earheads. The activity of ant, *Camponotus compressus* Fb. was also observed along with shoot bugs. The leaf roller

Accepted :  
August, 2009

**Table 1 : Insects and non-insects pest scenario of pearl millet (*Pennisetum glaucum* (L.) R. Br.) in Karnataka, India during 2004-07**

Sr. No.	Common name	Scientific name	Family	Order	Plant parts attacked	Status
1.	Grass hopper	<i>Atractomorpha crenulata</i> Fab.	Acrididae	Orthoptera	Leaves	Moderate
2.	The Phadka	<i>Hieroglyphus nigrorepletus</i> Bol.	Acrididae	Orthoptera	Leaves	Moderate
3.	Grass hopper	<i>Oxya velox</i> F.	Acrididae	Orthoptera	Leaves	Moderate
4.	Shoot bug	<i>Peregrinus maidis</i> (Ashmead)	Delphacidae	Hemiptera	Peduncle, earheads	Moderate
5.	Spittle bug	<i>Poophilus costalis</i> Walk.	Cercopidae	Hemiptera	Leaf axils	Minor
6.	Leaf hopper	<i>Pyrilla perpusilla</i> Walk.	Lophopidae	Hemiptera	Stem, leaves	Negligible
7.	Lygaeid bug	<i>Lygaeus pandurus</i> Scop.	Lygaeidae	Hemiptera	Earheads	Negligible
8.	Earhead bug	<i>Elasmolomus sordidus</i> Fab.	Lygaeidae	Hemiptera	Harvested earheads	Minor
9.	Earhead bug	<i>Calocoris angustatus</i> Lith.	Miridae	Hemiptera	Earheads	Minor
10.	Coreid bug	<i>Leptocoris</i> sp.	Coreidae	Hemiptera	Earheads	Negligible
11.	Pentatomid bug	<i>Nezara viridula</i> (L.)	Pentatomidae	Hemiptera	Earheads	Negligible
12.	Pentatomid bug	<i>Dolycoris indicus</i> Stal.	Pentatomidae	Hemiptera	Earheads	Negligible
13.	Shoot fly	<i>Atherigona approximate</i> Malloch	Muscidae	Diptera	Shoot (Seedlings)	Minor
14.	Earhead midge	<i>Cecidomyia penniseti</i> Felt.	Cecidomyiidae	Diptera	Earheads	Minor
15.	Stem borer	<i>Chilo partellus</i> Swinhoe	Pyralidae	Lepidoptera	Stem	Minor
16.	Pink borer	<i>Sesamia inferens</i> Walk.	Pyralidae	Lepidoptera	Stem	Minor
17.	Leaf roller	<i>Marasmia trapezalis</i> Guen.	Pyralidae	Lepidoptera	Leaves	Moderate
18.	Armyworm	<i>Mythimna separate</i> Walk.	Noctuidae	Lepidoptera	Leaves	Moderate
19.	Red hairy caterpillar	<i>Amsacta albistriga</i> Walk.	Arctiidae	Lepidoptera	Leaves	Minor
20.	Black hairy caterpillar	<i>Estigmene lactinea</i> Cram.	Arctiidae	Lepidoptera	Leaves	Minor
21.	Chafer beetle	<i>Oxyctonia versicolor</i> (F.)	Cetonidae	Coleoptera	Inflorescence,	Minor
22.	Blister beetle	<i>Cylindrothorax tenuicollis</i> (Pallas)	Meloidae	Coleoptera	Flowers, earheads	Moderate
23.	Blister beetle	<i>Psalydolytta rouxi</i> Cast.	Meloidae	Coleoptera	Flowers, earheads	Moderate
24.	Blister beetle	<i>Mylabris pustulata</i> (Thunberg)	Meloidae	Coleoptera	Flowers, earheads	Moderate
25.	Grey weevil	<i>Mylocerus discolor</i> F.	Curculionidae	Coleoptera	Stem, leaves	Negligible
26.	White grub	<i>Holotrichia consanguinea</i> (Blanch.)	Scarabaeidae	Coleoptera	Roots	Moderate
27.	Snail	<i>Helix</i> sp.	Stylommatophora	Gastropoda	Leaves	Negligible
28.	Rose ringed parakeet	<i>Psittacula krameri</i> Scopoli	Psittacidae	Aves	Earheads	Moderate

(*Marasmia trapezalis* Guen.) was found feeding inside the leaf rolls at moderate level. The armyworm (*Mythimna separate* Walk.) was found feeding on the leaves during night hours and hiding in the leaf whorls during day time. The blister beetles such as *Cylindrothorax tenuicollis* (Pallas), *Psalydolytta rouxi* Cast and *Mylabris pustulata* (Thunberg) assumed greater importance by recording moderate level of incidence. Heavy infestation of these beetles at flowering stage caused considerable damage. Adults devoured the pollen and stigma and were responsible for grain abortion and panicle sterility. The root grubs were found feeding on the roots resulting in withering and dying of plants. Rose ringed parakeets were found feeding on the earheads by consuming grains at harvesting stage causing about 20-30% loss (Table 1).

The minor insect pests included spittle bug, two species of earhead bugs, shoot fly, earhead midge, stem borer, pink borer, red hairy caterpillar, black hairy caterpillar and chafer beetle with 11-30% incidence. Leaf

hopper, lygaeid bug, coreid bug, two species of pentatomid bugs, grey weevil and snail (*Helix* sp.) were recorded as negligible pests with less than 10% incidence. The sucking pests like *Nezara viridula* Linn. and *Dolycoris indicus* Stal. caused damage by sucking sap from the milky grains (Table 1). Peak population build-up of these pests varied with location and year, but they occurred most frequently during September month. Most of these insect pests have already been reported from various parts of the country. However, such a work in Karnataka is limited. Hence this attempt has been made.

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