

Insect fauna of paddy in Nalgonda District of Andhra Pradesh

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Rice is grown in an area of 10 lakh hectares in Nagarjuna Sagar project command area of Nalgonda district of Andhra Pradesh (South India). In spite of the cultivation of high yielding rice varieties the average yield of rice per hectare in the area is still very low. Among the various constraints in low land rice production, the damage due to large number of insect pests right from sowing in nursery till the harvest of the crop is substantial. An attempt has been made to study the insect fauna associated with rice crop, along with their seasonal incidence and economic importance. Roving survey and fixed plot survey indicated that totally 13 insect species were found attacking paddy during Kharif season and all of them have been identified (Table 1).

During the survey, brown plant hopper (*Nilaparvata lugens* Stal), and white backed plant hopper (*Sogatella furcifera* Horv.) were found to be the key pests of rice under irrigated conditions during kharif season. The paddy stem borer *Scirpophaga incertulas* Walker caused moderate damage which was comparatively low in Kharif than in Rabi. The other major pests

Table 1 : List of Pest of Paddy

Sl. No	Scientific name	Period of infestation	Economic status
1	<i>Orseolia oryzae</i> Woodmason	September to October	Low
2	<i>Dicladisma armigera</i> Olivier	July	Low
3	<i>Hydrellia philippina</i> Ferino	August to September	Low
4	<i>Cnaphalocrocis medinalis</i> Guenee	September to October	Low
5	<i>Scirpophaga incertulas</i> Walker	October	Low
6	<i>Melanitis leda ismene</i> Godfrey	October	Very low
7	<i>Nephotettix</i> sp.	August to December	Moderate
8	<i>Nilaparvata lugens</i> Stal	October to December	Severe
9	<i>Sogatella furcifera</i> Horvath	October to December	Severe
10	<i>Steneotarsonemus spinki</i> Smiley	November to December	Moderate
11	<i>Mythimna sp nr</i> Albavena	November to December	Very low
12	<i>Oxya nitidula</i> Walker	September to November	Very low
13	<i>Oligonychus oryzae</i> Hirst	September to October	Very low

green leaf hopper (*Nephotettix* sp) and panicle mite (*Steneotarsonemus spinki* Smiley) were also found causing moderate damage. The panicle mite which in recent times gained importance has already achieved status of major pest in the region due to its heavy economic damage. It may be due to the favourable climatic conditions i.e high temperatures existing in the region. Gall midge, *Orseolia oryzae*, Woodmason incidence was found to be very negligible in the region but its incidence was observed under late transplanted conditions particularly when there is delay in release of water from the project. Paddy leaf folder, *Cnaphalocrocis medinalis* Guenee was observed during the months of September and October, but its damage was found to be low in the region. Rice hispa, *Dicladisma armigera* Olivier, and whorl maggot, *Hydrellia philippina* Ferino were noticed rarely and was found to cause low damage. The minor pests namely, rice butterfly (*Melanitis leda ismene* Godfrey), rice grass hopper (*Oxya nitidula* Walker) and paddy spider mite (*Oligonychus oryzae* Hirst) incidence was also recorded in the crop but the pests caused not much economic loss.

Biology of root mealy bug, *Geococcus citrinus* Kuwana (Rhizoecini: Pseudococcidae), a new pest on banana in Kerala

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The mealy bug, *Geococcus citrinus* Kuwana (Pseudococcidae: Homoptera), was recorded as a pest attacking the roots of banana c.v. Nendran in Kerala (Smitha *et al.*, 2007). The biology of the pest was not studied fully as the rearing method was not standardized. Males were also not recorded. Hence to bridge the gap, a detailed study was undertaken on the biology of *G. citrinus* at Banana Research Station, Kannara, Kerala, South India.

The mealy bugs were reared on sprouted green gram seeds, surface sterilized with carbendazim 0.01% for 5 minutes. The study showed that *G. citrinus* is a bisexual species. The life cycle of females consisted of three stages, namely, egg, nymph and adult while that of male consisted of four stages, namely, egg, nymph, pupa and adult. Adult female:- apterous, white, body covered with thin wax filaments. The average length and breadth were 2.9 mm and 1.48 mm respectively. Adult male: - winged, pale brown, with a pair of narrow, elongate opaque wings. Average length is 1.64 mm and width, 0.19 mm. Egg: - pearly white, elongate oval, translucent, covered with wax filaments produced by the female and are laid in groups or in chains. The average length was 0.37 mm and average width was 0.15 mm. The