



**Incidence of Rice Hispa (*Diuraphis armigera*) on paddy crop in Agro-Ecological Zone of District Sialkot**

**Mazher Farid Iqbal<sup>1</sup>, Muhammad Farooq<sup>2</sup>, Maqsood Ahmad<sup>3</sup>, Muhammad Latif<sup>4</sup>, Zuhaib Ahmad<sup>5</sup> and Muhammad Anjum Ali<sup>6</sup>**

Adaptive Research Station, Sialkot<sup>1</sup>

Pest Warning and Quality Control of Pesticides, Gujranwala<sup>2</sup>, Sialkot<sup>3,4</sup> and Daska<sup>5</sup>

Director General Agriculture (Extension, Adaptive Research and Pest Warning) Punjab-Lahore<sup>6</sup>

\*Corresponding author

**Abstract**

Pest survey was conducted in low lying area to evaluate incidence of rice hispa on paddy crop in agro-ecological zone of Tehsil Daska, District Sialkot, Punjab-Pakistan during kharif-2015. Rice hispa infestation was recorded on paddy crop in low lying areas between 35-68% with temperature ranges 31.55-26.65 °C, relative humidity 92.70% and rainfall 26.60 mm. It is an important insect pest of rice crop, adult's of this pest scrape of the parenchymatous tissues from the upper surface of leaf. Grubs residing in leaf in the form of mines which are clearly identified. This pest causes extensive damage to vegetative stage of plant resulting upto 65% loss in yield in affected areas. Grubs eat away chlorophyll or green matter of rice leaves resulted in withering and drying up of leaves. The characteristic symptoms of its damage are presence of parallel white streaks on the surface of infested leaves towards tips.

**Keywords:** Rice hispa; incidence; paddy crop; Sialkot.

**Introduction**

**Pest Description**

**Eggs:** White, small and oval. In favorable environmental condition the beetles start laying eggs on rice crop transplanted with the age of 20-25 days on the lower surface of leaf.

**Grub:** Very small, apodous and creamy white. Both grub and pupae are found in the leaf tissue. Number of grubs may range from 3-5 per leaf.

**Pupa:** Brown and oval in shape.

**Adult:** Blue-black and very shiny. Its fore wings have many spines.



Adult emerge just from pupal stage



Full grown Adult

## Crop History

Thirty five days rice nursery of Basmati Super was transplanted manually at last week of July. Diammonium Phosphate @ 62.50 kg/ha was broadcasted in the field manually just after seven days of transplanting.

## Pest Scouting

Pest scouting of the crop was done at the age of 25 days with water level up-to 09-12 inches. Diagonal method of pest scouting was adopted in the selected field. Plant population in the field was recorded in from 65-68 thousand in acre. Pest attack was recorded by sweeping hand net for adults and leaves damaged by grubs calculated by counting of damaged leaves divided by total number of plants in a square meter. The Economic Threshold Level (ETL) of this pest is two adults in a sweep or two damaged leaves per plant.

## Damage symptoms

Adults of this pest scrape the parenchymatous tissues from the upper surface of leaf. Grubs residing in leaf in the form of mines which are clearly identified. This pest causes extensive damage to vegetative stage of plant. Grubs eat away chlorophyll or green matter of rice leaves resulted in withering and drying up of leaves. The scientists recorded that the symptoms of its damage are presence of parallel white streaks on the surface of infested leaves towards tips. The rice is one of the major pests of rice (Palaszek et al., 2002; Hazarika et al. 2005). Linear patches along the veins. The yellowish grubs mine into the leaves presenting blister spots. It causes considerable damage to vegetative stages of rice resulting in yield loss of 28% (Nath & Dutta 1997).



Damage symptom on leaves

The highest peak on rice crop was recorded at late August; high level of Relative Humidity favors its development (Choudhary et al., 2002).



Damage symptoms on crop

## Management

- Cultural Control
- Biological Control
- Chemical Control

### Cultural Control

- Over dosing and late usage of Urea application should be avoided.
- Cutting of attacked top portion of leaves can be suppressed the population. This practice is impossible in large scale.

### Biological Control

- Several braconid wasps are known to parasitize the larvae.
- Trichogramma parasitizes the eggs.

### Chemical Control

On its appearance in the field following control measures should be adopted by the consultation of plant doctors.

1. Lambda Cyhalothrin @ 1000 ml/hectare OR
2. Cypermethrin @ 750 ml/ha OR
3. Bifenthrin @ 500 ml/ha OR
4. Deltamethrin @ 625 ml/ha OR
5. Carbosulfan @ 1250 ml/ha OR
6. Fipronil @ 600 ml/ha OR
7. Triazophos @ 400 ml/ha

However any other suitable insecticide should immediately be sprayed on affected crop and weeds should be controlled by any herbicides.

## References

- Choudhary, A., I. Dogra, P. K. Sharma, and B. K. Kaul. 2002. Record of some new alternate hosts of rice hispa, *Dicladispa armigera* Olivier from Himachal Pradesh (India). J. Entomol. Res. 26(2):183-184.
- Hazarika LK, Dekha M, Bhuyan M. 2005. Oviposition behavior of the rice hispa *Diclaispa armigera* (Coleoptera: Chrysomelidae). Inter. J. Trop. Ins. Sci. 25:1-6.
- Nath R, Dutta B. 1997. Economic Injury Level of rice Hispa, *Dicladispa armigera* (Oliv.). J. Agri. Sci. soc. North East India. 10: 273-274.
- Polaszek A, Rabbi MF, Islam Z, Buckley YM. 2002. *Trichogramma zahiri* (Hymenoptera: Trichogrammaridae) on egg parasitoids of the rice Hispa *Dicladispa armigera* (Coleoptera: chrysomelidae) in Bangladesh. Bul. Entomol. Res. 92:529-537.