

A report on the incidence of planthopper, *Diostrombus carnosus* (Westwood) (Hemiptera: Derbidae) from *kharif* Rice

Sankarganesh E^{1*} and Kusal Roy²

Department of Agricultural Entomology

Bidhan Chandra Krishi Viswavidyalaya (BCKV), Mohanpur-741252, Nadia, West Bengal, India

Corresponding author: e.sankar333@gmail.com

Rice (*Oryza sativa* L.) is one of the major staple food crops for more than half of the global population. It is cultivated in almost all the tropical, subtropical and temperate countries of the world. Rice is the dominant cereal crop in India and its production is estimated at 102.36 MT in the *Kharif* season of 2020-21 as against 101.98 MT in 2019-20 (Reddy *et al.*, 2020). The insect species complex in rice varies in terms of abundance and distribution from region to region.

In West Bengal, rice is grown under diversified situations across the six agro-climatic zones. The crop is being attacked by more than 100 species of insects and a few of them *viz.* stem borer (*Scirpophaga incertulas* Walker), leaf folder (*Cnaphalocrocis medinalis* Guenee), plant hoppers (*Nilaparvata lugens* Stal and *Sogatella furcifera* Horvath), leaf hoppers (*Nephotettix virescens* Distant and *N. nigropictus* Stal), earhead bug (*Leptocorisa oratoria* Fabricius), etc. are a matter of serious concern because they can inflict economic crop damage. We encountered the incidence of derbid plant hopper, *Diostrombus carnosus* (Westwood) (Hemiptera: Derbidae) (Fig.1) from the experimental plots of the C-Block Farm of Bidhan Chandra Krishi Viswavidyalaya, Kalyani, West Bengal (22°59'16" N Latitude and 88°27'19" E Longitude) during *Kharif* 2021. The

activity of this pest was noticed during the August and September months and was found harboring on the rice tillers (Fig.2). This is the first record of its kind from West Bengal as well as from the eastern part of India.

Derbidae is the third largest family of Fulgoroidea which includes nearly 1600 described species and most species are associated with monocots (Yap and Bourgoin, 2016). The head of the adult hopper is usually small and greatly compressed. They bear paired lateral ocelli which are usually conspicuous and situated on the lateral area of the head in front of the compound eyes. The legs are slender, quite elongate and the second segment of the hind tarsi is large, with a row of spines at the apex. The members of this group have highly modified piercing and sucking mouthparts and some of them are vectors of plant diseases like *D. mkurangai*, the vector of coconut lethal yellowing disease (Bila *et al.*, 2017).

Rice crop is known to suffer losses of up to 200 MT globally owing to various factors (Singh and Tiwari, 2020). One of the major biotic constraints of the low productivity of rice in India is the occurrence of insect pests at different phenophases of the crop. Different species of hoppers are recorded from rice, which are involved in the transmission of viral diseases

such as rice yellow and grassy stunt viral diseases. *D. carnosus* is a small and active hopper, having an orange coloured body with macropterous wing and diurnal flight activity. There is little known information about the pest status and it was previously reported as the pest of rice (Dorji, 2016) from Bhutan; maize in northeastern states of India (Kuotsu and Lalrinfeli, 2019). Their incidence was also reported in vegetable crops viz. chilli

(Sankarganesh, 2017) and okra (Kumar and Omkar, 2018). However, unlike other species, the occurrence of *D. carnosus* is unusual and not reported to cause any economic damage in the crops including rice. There is a need to work out the pest-risk analysis as well as a comprehensive investigation on the nature of crop damage inflicted by them. As per the existing scientific literature, this is the first report of *D. carnosus* from the rice crop in this region.

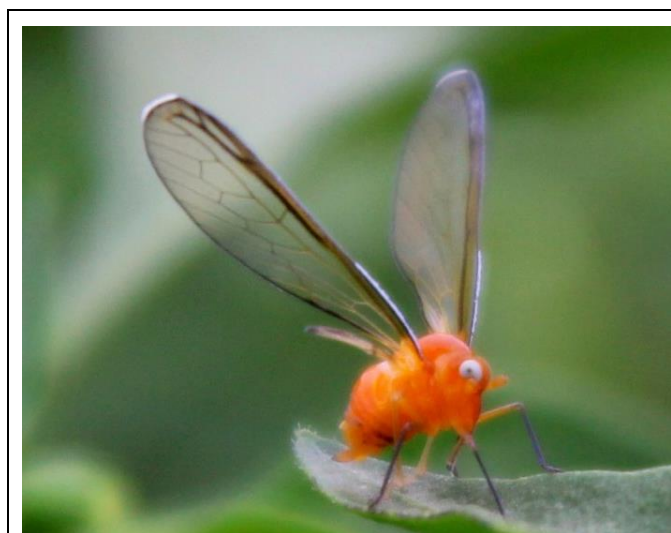


Fig. 1: Adult derbid, *D. carnosus*

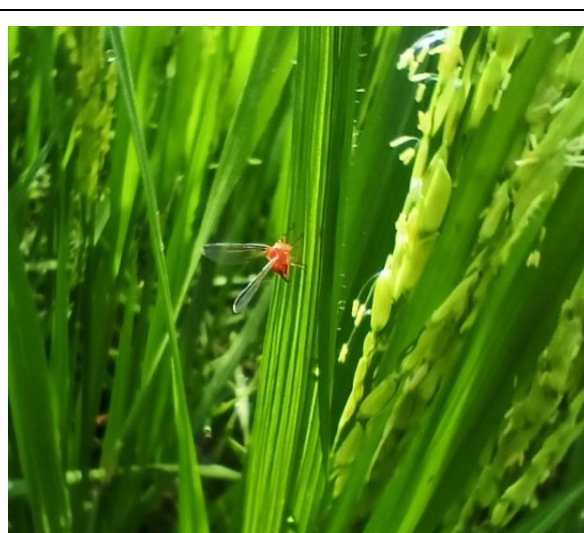


Fig. 2: *D. carnosus* incidence in rice field

References

- Bila, J., Mondjana, A., Samils, B., Hogberg, N., Wilson, R.M. and Santos, L. 2017. First report of 'Candidatus Phytoplasma palmicola' detection in the planthopper *Diostrombus mkurangai* in Mozambique. *Bulletin of Insectology*, **70**(1): 45-48.
- Dorji, S. 2016. Country report of Bhutan-Integrated pest Management (IPM)-TCP. *National Plant Protection Centre*, pp.1-8, Bhutan.
- Kumar, B. and Omkar. 2018. Insect Pest Management. In: Pest and their Management. *Springer*, p. 1021.
- Kuotsu, K. and Lalrinfeli, R. 2019. Biodiversity of insect pests of major cereal crops in mid hills of Meghalaya. *The Pharma Innovation Journal*, **8**(8): 287-292.
- Reddy, A.V., Reddy, R.U., Anusha, Ch., Yashaswini, Ch., Om Prakash, S. and Ramesh, T. 2020. Sporadic incidence of green stink bug in Kharif paddy. *Insect Environment*, **23**: 40-43.

- Sankarganesh, E. 2017. Development of DNA barcodes for major insect pests and natural enemies of solanaceous crops ecosystem in mid hills of Meghalaya. M. Sc. (Agri.) thesis, submitted to Central Agricultural University (CAU), Imphal, India.
- Singh, S. and Tiwari, S.N. 2020. Sucking Pests of Rice. In: Sucking Pests of Crops. pp. 55-105. doi: 10.1007/978-981-15-6149-8.
- Yap, S.A. and Bourgoïn, T. 2016. A new species of genus *Ceropupa* from Luzon, Philippines (Hemiptera: Derbidae: Sikaianini), with a key to the species of *Ceropupa* Emeljanov, 1996. *Halteres*, **7**: 157-162.

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