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ORIGINAL ARTICLE

A NEW REPORT OF HOG PLUM BEETLE (*PODONTIA QUATUORDECIMPUNCTATA*) FROM SOUTH 24 PARGANAS, WEST BENGAL, INDIA

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Abstract: *The Hog Plum Beetle (Podontia quatuordecimpunctata) is notable for its bright, distinctive coloration, which includes a yellow head and pronotum, along with orange or pink elytra adorned with black spots. Its primary host plant is the hog plum (Spondias sp.), where both the adult beetles and larvae cause significant damage to the leaves. Spondias pinnata (L. f.) Kurz. is commonly found across Southeast Asia and parts of India. This beetle can be a concern in agricultural areas where these trees are cultivated. In this present study a population fluctuation of Hog Plum Beetle was observed in the district of South 24 Parganas, West Bengal, India.*

Key words: *Podontia quatuordecimpunctata*, *Spondias* sp., Pest, South 24 parganas, West Bengal, India

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1. INTRODUCTION

Hog plum (Spondias sp), particularly *Spondias pinnata* (L. f.) Kurz. (family: Anacardiaceae) is an underappreciated yet highly valuable fruit tree in different regions of the state of West Bengal, India. The fruit is not only a significant part of local diets but also holds impressive nutritional and medicinal value. Its diverse uses along with its health benefits, including potential relief from dysentery, tuberculosis, and scurvy, make it an important crop in the region.

However, the low production and productivity of hog plum in West Bengal can be attributed to several factors, with pest infestations being one of the main contributors. The Hog Plum Beetle (*Podontia quatuordecimpunctata*) is a major insect pest, known for its aggressive feeding on the leaves of the plant, causing significant defoliation and damage [1]. The damage from both adult beetles and larvae can result in up to 96% defoliation, potentially leading to tree death if infestations are severe. This not only affects the growth of the trees but also reduces the quantity and quality of the fruits, leading to substantial economic losses for growers.

These beetles have a robust body with brightly coloured elytra or wing covers, which are either salmon pink, orange, or yellow, turning to cream or orange after their death. It has 14 black, irregularly shaped spots on its elytra, typically 9–10 spots on each elytron, totaling 18–20 spots [2-3]. The antenna has 11 segments, and the legs are yellow.

2. MATERIALS AND METHODS

Life Cycle

The eggs of the hog plum beetle are whitish in colour with oblong shape, having the dimension of 1.82 mm x 0.85 mm (approximate). The eggs are laid at the lower surface of the leaves. Both the adults, as well as larvae are uncontrollable leaf eaters, preferring the soft immature leaves and young shoots. Regarding the defense mechanism, the larvae used to coat and cover the body with fecal matter, to deter the predators (e.g., birds, hedgehogs, etc.). When the larvae pupate in the soil, they create a pupal case, which is made up of mud, soil particles and regurgitated soil [4].

Study Site

The study was conducted in a farm with fruit orchard at Diamond Harbour (Lat 22.129 ° and Long 88.213°), South 24 Parganas, which is located in the Gangetic plains of West Bengal. This region is ideal for the study of the Hog Plum Beetle due to its warm and humid tropical climate.

Sampling Method:

Three hog plum trees [*Spondias pinnata* (L. f.) Kurz.] were selected from the orchard for pest monitoring, ensuring a representative sample. Monthly data were taken from April, 2024 to September, 2024. Geo tagged photographs were taken accordingly.

3. RESULT AND DISCUSSIUON

From the study, it was observed that hog plum beetle cause damage to the host tree (*Spondius* pinnata) at their different stages of life cycle (Figure 1). During the tropical warm (up to 36°C temperature) and humid condition, the mean number of hog plum beetle was increased (up to 30/plant leaf) in the month of July (Figure 2), which supports the previous studies from Assam, another state of east India [5-7].

In Bangladesh, the beetles are reported to appear in the month of June, become abundant in July- September period and gradually disappear in the month of October [8].

In 2016, Khan [9] had studied and reported about the details of leaflet consumption of *Spondias mangifera*, [synonym of *Spondius pinnata*) by hog plum beetles, in the laboratory condition.

In another study from Bangladesh, it was found that the beetles cause severe damage between the period of March-August, with the completion of two generations, before the defoliation of the tree [9]. Similar observation was recorded in the present study for *Spondias pinnata*, from south 24 Parganas district of West Bengal (Figures 3-6), for the first time, depicting large scale damage of the photosynthetically productive parts of the tree.

On the basis of the present report eliciting the damage type caused by the leaf-eating beetles, further in-depth study about their ecologically sustainable management and control measure [10-12] can be carried out to maintain the productivity of hog plum.

Table 1: The average number of Hog Plum beetle during the period of study along with the weather parameters.

MONTH	AVERAGE MAXIMUM TEMP (°C)	AVERAGE MINIMUM TEMP (°C)	AVERAGE RAINFALL (mm)	No.(average) of *Podontia quatuordecimpunctata* (both adult and grub)
APRIL,2024	38	30	0.10	4
MAY, 2024	40	31	0.00	6
JUNE, 2024	35	28	9.3	10
JULY, 2024	36	27	34.6	30
AUGUST, 2024	32	24	25.9	18
SEPTEMBER, 2024	30	23	14.8	8

Figure 1. The affected host hog plum tree [*Spondias pinnata* (L. f.) Kurz.] with various life stages of hog plum beetle.

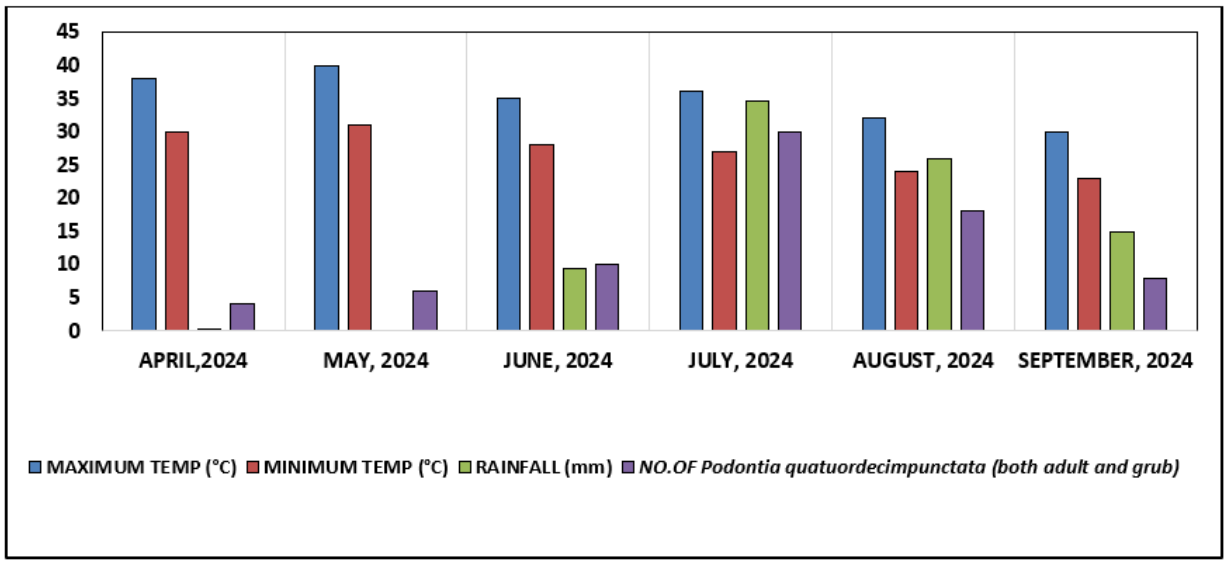

Figure 2. Population fluctuation of *Podontia quatuordecimpunctata* with weather parameters (average).

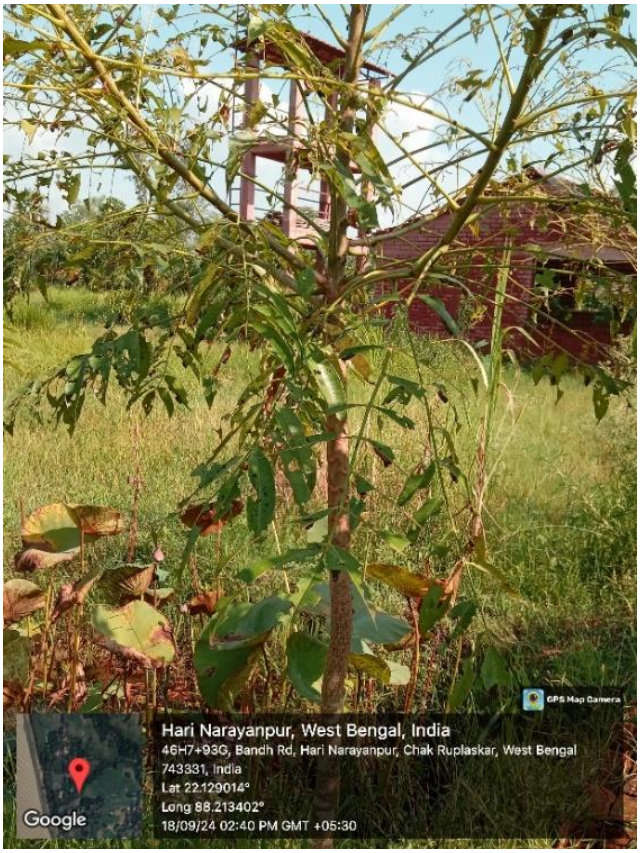

Figure 3. The nature of damage of the host plant leaves caused by hog plum beetle.

Figure 4. Adult *Podontia quatuordecimpunctata* feeding on the leaves of hog plum. Feces case is also visible in the photograph.

Figure 5. *Podontia quatuordecimpunctata* grub is feeding on hog plum leaves

Figure 6. Photograph showing the different stages of life cycle (eggs, grubs, pupa and adult) of *Podontia quatuordecimpunctata* and the affected host plant.

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