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CONTENTS

Occurrence of leaf feeder *Podontia quatuordecimpunctata* (Linnaeus, 1767) in *Spondias pinnata* (L.f.) Kurz at Kamrup district of Assam, India

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ABSTRACT: *Spondias pinnata* (family: Anacardiaceae), known as Indian hog-plum, is a species of popular minor fruit tree of Assam with edible sour fruits among the underutilized fruit crops. It is medicinally important and the fruit is a valuable source of vitamin C. The tree is severely damaged by a coleopteran leaf feeder known as *Podontia quatuordecimpunctata* (family: Chrysomelidae). The pest is widely distributed in Assam, West Bengal, Meghalaya, Sikkim and Uttar Pradesh. The pest was appeared in May, 2019 as a serious defoliator of *Spondias pinnata* and first record in Southern part of Kamrup district of Assam. Mating took place 3-7 days of emergence and copulation took place in the early hours of morning. Eggs were laid in cluster of 20-50 and arranged in circular manner. Egg clusters were also noticed in non-host plant like *Murraya koenigii* but did not feed. Incubation period was 5-8 days and hatching took place in day and night. The newly hatched grub fed gregariously for 2-3 days. The grub retained its feces directly on the dorsum. The larval (grub) period was 12-16 days and had four instars. Pupation took place in soil. The adult beetle was 1.8-2.0 cm long. The pest appeared during onset of rainy season (May) with a peak in Jun/Jul and disappeared in Nov/Dec. The leaf defoliation was caused by the grub and adult beetle.

Key points: Minor fruit, medicinally important, *Podontia quatuordecimpunctata, Spondias pinnata*

Spondias pinnata (family: Anacardiaceae), known as Indian hog-plum, is a species of popular minor fruit tree of Assam with edible sour fruits among the underutilized fruit crops. It is medicinally important and the ripe fruit is refrigerant tonic, aphrodisiac, astringent to bowls, cures vata, ulcers, burning sensations, phthisia, blood complaints, snake bite, ear ache etc. (Deka and Kalita, 2002). The young shoot is eaten as vegetable. The fruit is a valuable source of vitamin C. It is a deciduous tree and found to grow as wild or cultivated up to 1500 m altitude, throughout the tropical Indian subcontinent, Andaman Islands, Sri Lanka, Myanmar, Thailand, Malaysia, China and also widely distributed in the Philippines (Florido and Cortiguerra, 2003). In India, the plant is found growing very well in the tropical and Himalayan regions (Badoni and Bisht, 2009). In recent past, attempt has been made to introduce this species to the semi-arid conditions of Anand, Gujarat (Samanta and Mandal, 2012).

The tree is severely damaged by a coleopteran leaf feeder known as *Podontia quatuordecimpunctata* (family: Chrysomelidae). The pest is widely distributed in Assam, West Bengal, Meghalaya, Sikkim and Uttar Pradesh. It is also reported from Bangladesh, Andaman Islands and Malay States (Deka and Kalita, 2002). It is one of the largest representatives of flea beetle in the world and has been recorded as a leaf feeder on hog-plum. In recent years, the pest has been appearing as a serious pest of hog-plum (*Spondias pinnata*) in Kamrup district of Assam and recorded for the first time in Southern part of Kamrup district during May, 2019. In present study, simple biology of the pest has been under taken in field conditions. The beetles were usually found on under surface of leaves. They fed irregularly by day and night and render the tree leafless (Fig. 1.A). The adults did not fly readily and on disturb they dropped to the ground and feigned to death for a while. Mating took place 3-7 days of emergence. Copulation commenced from early hours of morning and lasts for several hours (Fig. 1.B). The insect mated more than once. Oviposition started soon after mating on the under surface of leaves near tip. Eggs were laid in cluster of 20-50 and arranged in circular manner (Fig. 2). Egg clusters are also noticed in few other non-host plants (e.g. *Murraya koenigii*) near the hog-plum

A B C

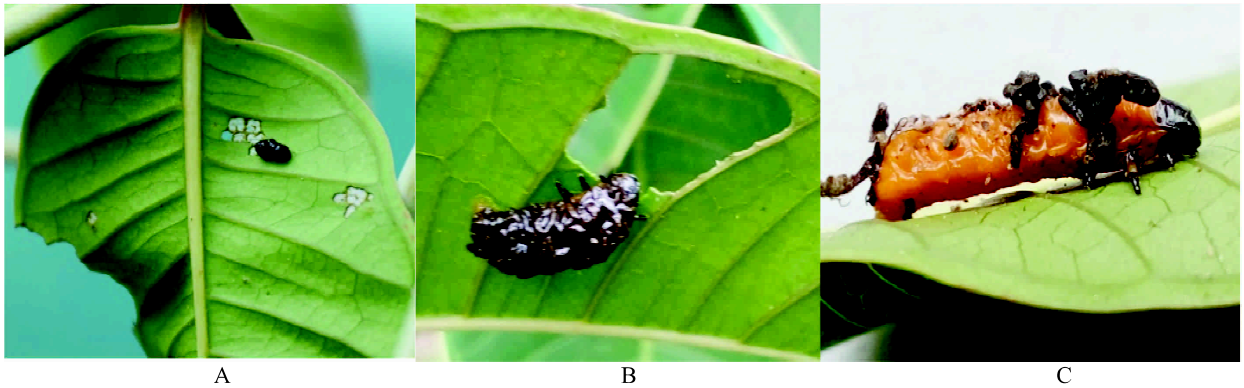
Fig. 1: A. Adult beetle, B. Copulation, C. Infestation

Fig. 2: Egg cluster

The newly hatched grub fed gregariously for 2-3 days and skeletonized the leaves (Fig. 3). Afterwards the grubs migrated to other parts of the plant completely defoliated the leaves. Grubs were developed through 4 instars in 12-16 days. Pupation took place in soil to a depth of 2-3 inches. The observations were made in field conditions.

The adult beetle was 1.8-2.0 cm long. The grub retained its feces directly on the dorsum. This coating acts as a deterrent from predators like ants. The fecal coat may also probably serve to moderate body temperature or to reduce water loss although it has not been proven yet.

The pest appeared during the onset of rainy season



A B C

Fig. 3: A. First instar grub, B. Third instar grub, C. Forth instar grub

but did not feed on those trees. Freshly laid are light yellow in colour but gradually changed to dull yellow. Incubation period was 5-8 days and hatching took place both in day and night.

followed by high temperature and humidity along with longer duration of sunshine which provides favourable conditions for it. The leaf defoliation was caused by the grub and adult beetle. The population

reached its peak during June-July when the tree was in full foliage. After that the population started declining and attained its low in October/November probably due to decrease of temperature and cessation of rain. During November/December, the pest disappeared/hibernated as adult beetle.

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