

***Graphium doson* (Felder and Felder) (Lepidoptera: Papilionidae) on *Magnolia champaca* (L.) Baill. ex Pierre: A New Record of Host Plant from Jharkhand**

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Received 3 February 2024, Accepted 8 June 2024, Published on 5 August 2024

ABSTRACT

The common Joy, *Graphium doson* (Felder and Felder) was noticed to cause severe damage by feeding the foliage of champak (*Magnolia champaca*) plantation by the caterpillars for the first time from Jharkhand State. This new host plant record of *Graphium doson* in Jharkhand is of paramount importance for the outbreak potentiality of this lepidopteron insect.

Keywords *Graphium doson*, Foliage infestation, *Magnolia champaca*, New record.

INTRODUCTION

Magnolia champaca (L.) Baill. ex Pierre, commonly called as champak or champaca, is a large, majestic evergreen tree belonging to the family Magnoliaceae. It was previously classified as *Michelia champaca*

and appreciated for its sweetly scented aromatic flower and ornamental value. This species is very much suitable to be used in agroforestry due to fast growth and multiple uses (Bhatt *et al.* 2010) and is well suited for road side plantation and urban landscaping (Mitra *et al.* 2014). It is widely used in both Ayurveda and Siddha medicine with diverse ethnomedical and pharmacological spectrum (Kumar *et al.* 2011, Raja and Koduru 2014, Fatima *et al.* 2018). *Magnolia champaca* is liable to attack by several insects (Ayyar 1939, Kumar *et al.* 1993, Dubey and Sundararaj 2004, Nalini *et al.* 2015) including the common Joy butterfly, *Graphium doson* (Felder and Felder), a polyphagous lepidopteron insect pest (Pathania *et al.* 2018, Kunte and Ravikanthachari 2020, Chattopadhyay 2022). In the present finding, an attempt has been made to document the larvae of *Graphium doson* (Felder and Felder), as a leaf eating insect pest of *Magnolia champaca* for the first time from Jharkhand, India.

MATERIALS AND METHODS

Surveys were conducted periodically to know the leaf damaging insect pest complex in the campus nursery and young plantation of the Faculty of Forestry, Birsa Agricultural University, Ranchi (23.18°N, 85.19°E, alt. 623 m MSL) and other plantation sites in and around Ranchi, Jharkhand. During the course of survey, noticeable leaf infestation and occurrence of larval feeding of *Graphium doson* was observed during September–November 2023. Mature larvae were collected and reared in the laboratory using rearing

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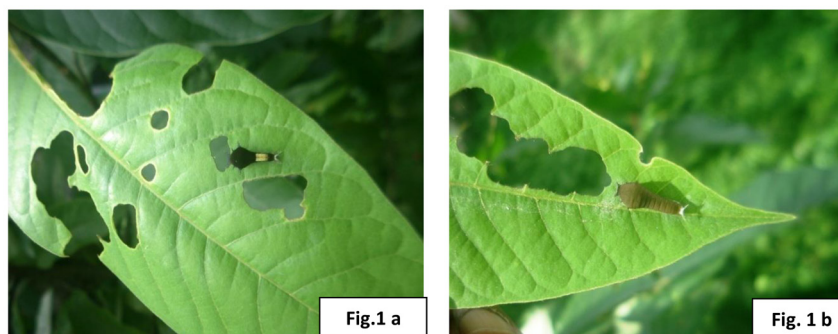
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cages as in other lepidopteron insects (Chattopadhyay 2023). For identification and confirmation the newly emerged adults were killed in the insect killing bottle using ethyl acetate, stretched and pinned properly and kept in fumigated insect box. Later, after thorough morphological study, the butterflies were identified as *Graphium doson* (Felder and Felder) with the help of available literature (Evans 1932, Kunte 2000, Chattopadhyay 2022) and also by comparing the already identified specimen kept in Faculty of Forestry, Birsa Agricultural University, Ranchi, Jharkhand. Adult butterflies were active fliers measuring 72 to 74 mm (wing span) and diagnosed by semitransparent light blue central wing bands formed by large spots, small marginal spots, pale discal vein and ventrally located costo-basal dark bar of hind wing.

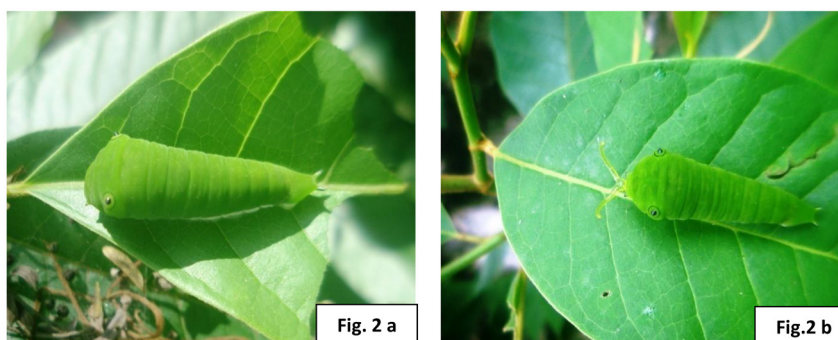
RESULTS AND DISCUSSION

During investigation, noticeable leaf infestation and occurrence of larval feeding of *Graphium doson* was observed from first week of September to second

fortnight to November 2023 and maximum infestation was in the third week of September 2023. Both the early and late aged larvae were spindle shaped and brown, dark brown and grassy green in color morphs. The early aged caterpillars (Figs. 1a, 1b) were found to feed on tender leaves by notching from the leaf margins or acted in hole or irregular feeding whereas the young and late aged larvae (Figs. 2a, 2b) were found to be very active voracious feeders conforming (Chattopadhyay 2014, 2023) and caused serious damage to the foliage of *Magnolia champaca*. As there is no information of *Graphium doson* in the available literature on the insect pests of *Magnolia champaca* in Jharkhand, the common Joy (*Graphium doson*) is the new record as a lepidopteron insect pest on champaca in Jharkhand state of India. The present information is a new addition to the insect pests of champaca (*Magnolia champaca*) in Jharkhand and the detailed investigation on the larval behavior and damage potentiality of this lepidopteron butterfly (*Graphium doson*) has been taken into account for formulating suitable management strategy.



Figs. 1a, 1b. Early age larvae of *Graphium doson* on *Magnolia champaca*.



Figs. 2a, 2b. Late age larvae of *Graphium doson* on *Magnolia champaca*.

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