

Notes and Comments

First report of *Grapholita molesta* (Busck) (Lepidoptera: Tortricidae) infestation on *Litchi chinensis* Sonn. (Sapindaceae: Sapindales) var. Bengal

J. M. A. Souza^a , G. A. Penso^b , E. A. T. Picoli^c , A. S. M. Meireles^a , I. P. Henriques^a , M. A. Godoi-Junior^a , J. V. S. Martins^a , L. S. Ribeiro^d , J. M. F. L. Cruz^{e*}  and W. S. Ribeiro^a 

^aUniversidade Federal de Viçosa – UFV, Departamento de Agronomia, Viçosa, MG, Brasil

^bUniversidade Tecnológica Federal do Paraná – UTFPR, Departamento de Agronomia, Pato Branco, PR, Brasil

^cUniversidade Federal de Viçosa – UFV, Departamento de Biologia Vegetal, Viçosa, MG, Brasil

^dUniversidade Federal da Paraíba – UFPB, Departamento de Fitotecnia, Areia, PB, Brasil

^eUniversidade Federal de Lavras – UFLA, Departamento de Fitopatologia, Lavras, MG, Brasil

Grapholita molesta (Busck) (Lepidoptera: Tortricidae) is highly adaptable and considered one of the major pests in fruit cultivation worldwide (Amat et al., 2021; Il'ichev et al., 2004), especially for stone fruits such as peaches, plums, and apples (Witzgall et al., 2010). The female *G. molesta* lays eggs on young branches and fruits, and upon hatching, the larvae penetrate the plant organs and feed on the internal tissues, causing significant damage. These damages can lead to branch mortality, premature fruit drop, or increase the plant susceptibility to other pests and diseases.

While *G. molesta* is considered a pest in various fruit crops worldwide, it is worth noting that, in the specialized literature, there are no records of its infestation on *Litchi chinensis* Sonn. (Sapindaceae: Sapindales). Therefore, our objective was to report, for the first time, the occurrence of *G. molesta* attacking *L. chinensis* var. Bengal. The observations were conducted in a commercial orchard in Mateus Leme, Minas Gerais, and in a teaching orchard at the Federal University of Viçosa (UFV), in the Zona da Mata region of Minas Gerais, during the agricultural years of 2021, 2022 and 2023.

The attacks - in all locations and years - occurred on young tissues (branches and fruits) in approximately 70% of the orchards. The main symptom observed was the drying of the shoot tips (Figure 1a, 1b, and 1c), resulting from biogenic perforations with diameters ranging from 2 to 5 mm and lengths varying between 1 and 2 cm (Figure 1d and 1e), characterized by the presence of fecal residues at the entrance of the perforations. The larvae of *G. molesta* (Figure 1f), displaying normal mobility, were identified by Professors Jackson Mirellyze Azevedo Souza and Gener Augusto Penso. The pest larvae also penetrated the fruit pericarp, leaving fecal residues at the opening, settling in the aril of young fruits, creating galleries and feeding on it and other internal tissues (Figure 1g and 1h). This damage can lead to premature fruit drop or weaken them, serving as an entry point for opportunistic pathogens, in addition to significantly reducing their quality, rendering them unfit for consumption or trade.

The biogenic cavities and galleries in the branches and fruits exhibited the same pattern and size as described for other crops (Siegwart et al., 2015).

Although *G. molesta* is not considered a primary pest of *L. chinensis*, it is important to thoroughly investigate the infestations to understand their scope, magnitude and potential for damage. This type of attack represents a new threat to lychee production and can cause significant harm to orchards, resulting in reduced yields. The crop/variety itself may produce volatile compounds acting as attractive signals to insects, which in an exotic environment, make the plant an alternative host for feeding and reproduction (Chen et al., 2020). However, it is important to note that these infestations may be related to climate change or human activity, which are increasingly common in agricultural areas. The fruit industry needs to be aware of the possibility of unusual insect infestations with potential pest profiles, and lychee growers should be vigilant about this occurrence in order to be prepared to take preventive measures to minimize damage. Some recommended control methods include the application of specific chemical products for *G. molesta* control, as well as the use of specific traps to monitor the pest and identify possible infestations. It is also important to properly prune trees to avoid the accumulation of dead plant material, which can attract the pest.

In summary, the discovery of *G. molesta* attacking the shoot tips of *L. chinensis* var. Bengal poses a new challenge for lychee growers and the scientific community, given that it is a polyphagous insect, making its control difficult. The preventive monitoring of this pest and its spread in lychee orchards should be disseminated and researched to better understand the behavior of *G. molesta* in lychees and develop strategies for its control to minimize potential damage. Integrated pest management is an approach that can be employed to help control the infestation and reduce damage to lychee trees. Successful reports of this practice have been documented for other lychee pests (Li et al., 2014; Leneveu-Jenvrin et al., 2020).

*e-mail: cruz.jmfl@gmail.com

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Figure 1. *Litchi chinensis* Sonn. (Sapindaceae: Sapindales) var. Bengal exhibiting dried young branches (a, b and c) and fruits (h), biogenic cavities and galleries (d, e and h) resulting from the activity of *Grapholita molesta* (Busck) (Lepidoptera: Tortricidae) (f and g).

It is crucial for lychee growers to conduct thorough monitoring and analysis of pests present in their orchards in order to identify them. This monitoring will support practices that contribute to improved fruit quality and provide data to support research and the release of products suitable for the crop to combat pests.

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