

## ***Henosepilachna vigintioctopunctata* (Coleoptera: Coccinellidae: Epilachninae) Attacking Cultivated and Wild Crops in Brazil**

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### **Authors' contributions**

This work was carried out in collaboration among all authors managed the literature searches and did a critical review and read and approved the final manuscript. Authors RLA, GMF and AMH designed the study and authors CHBA, PMM and TPC conducted experiments. All authors read and approved the final manuscript.

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**Short Communication**

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### **ABSTRACT**

*Henosepilachna vigintioctopunctata* was recorded on *Solanum melongena* L. for the first time in cultivated crops areas in Espírito Santo State, southeastern Brazil, in the first semester of 2017. In one-year research, *H. vigintioctopunctata* was recorded in eight host plants of the families Amaranthaceae and Solanaceae. These new records represent a high potential establishment of this pest in Brazil.

**Keywords:** 28-spotted lady bird beetle; hadda beetle; Solanaceae; *Solanum melongena*.

### **1. INTRODUCTION**

*Henosepilachna vigintioctopunctata* (Fabricius, 1775) (Coleoptera: Coccinellidae: Epilachninae),

the 28-spotted lady bird beetle or Hadda beetle has been reported as one of the most important pest of cultivated and wild Solanaceae and Cucurbitaceae plants in Asia, with records as

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pest in China [1], India [2-4], Indonesia [5,6], Japan [7,8] and Pakistan [9] and in Oceania, with records in Australia [10]. Cultivated plants in these regions include eggplants, potatoes, tomatoes, tobacco and cucumbers.

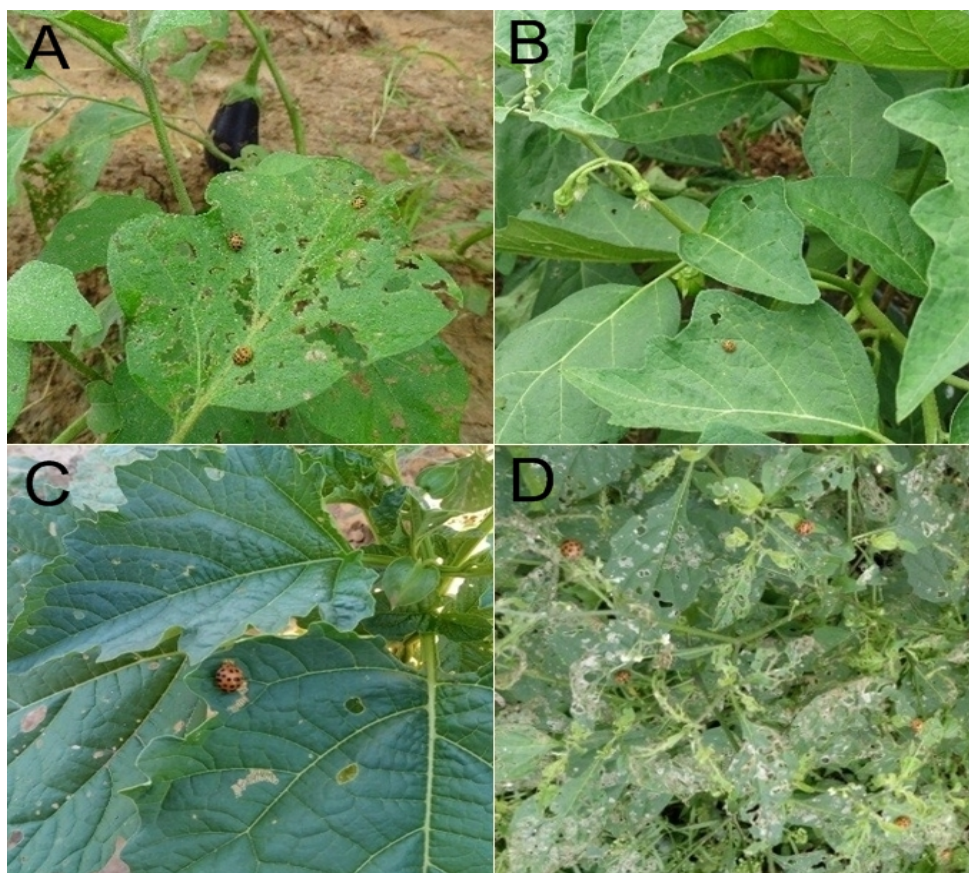
In Western Hemisphere, the first record of *H. vigintioctopunctata* was made in 1990 in Curitiba, Parana State, Brazil, in an unidentified wild cucurbit. In 1991, it was detected in Paranguana, on *Piper nigrum* L. (Piperaceae) and in 1992 in Itajai, Santa Catarina State, on *Solanum americanum* Mill. (Solanaceae) [11]. On the three mentioned records, only adults were reported. *Henosepilachna vigintioctopunctata* was probably introduced from Port of Paranaguá, Parana State (L.M. Almeida, personal communication).

In 2002, adults and larvae were over again collected in *S. americanum* in Itajai. In 2010, all development stages of *H. vigintioctopunctata*

were collected on *Brugmansia suaveoleus* (Humb. and Bonpl. ex Willd.) (Solanaceae) in Campinas and São Paulo, São Paulo State [12].

During field researches at Instituto Federal do Espírito Santo, Campus Itapina, in Colatina, Espírito Santo State, in the first semester of 2017, adults and larvae were observed attacking eggplants *Solanum melongena* L. (Solanaceae). New records were made through one year in different host plants. Adults and larvae collected in July 2018, in Colatina, in eggplants were sent to Dra. Lucia Massutti Almeida, Department of Zoology, Federal University of Parana (UFPR), Curitiba, Brazil, to species identification. Vouchers specimens were deposited in Entomology Collection Prof. Dr. Pe. Jesus Santiago Moure, UFPR.

In one-year surveys through visual observation of the presence or absent of *H. vigintioctopunctata*



**Fig. 1. Attacked plants by *Henosepilachna vigintioctopunctata*: *Solanum melongena* L. (A), *Solanum aethiopicum* L. (B), *Physalis angulata* L. (C) and *Solanum nigrum* L. (D) in Espírito Santo, Brazil, July 2017-August 2018**

**Table 1. Host plants and development stages of *Henosepilachna vigintioctopunctata* found in Espirito Santo, Brazil, July 2017-Agost 2018**

| Botanical family | Host plant                            | Development stage found |        |      |       |
|------------------|---------------------------------------|-------------------------|--------|------|-------|
|                  |                                       | Egg                     | *Larva | Pupa | Adult |
| Amaranthaceae    | <i>Amaranthus viridis</i> L.          | A                       | A      | A    | P     |
| Solanaceae       | <i>Brugmansia suaveolens</i> (Willd.) | P                       | P      | P    | P     |
|                  | <i>Physalis angulata</i> L.           | P                       | P      | P    | P     |
|                  | <i>Solanum aethiopicum</i> L.         | P                       | P      | P    | P     |
|                  | <i>Solanum lycopersicum</i> L.        | A                       | A      | A    | P     |
|                  | <i>Solanum melongena</i> L.           | P                       | P      | P    | P     |
|                  | <i>Solanum nigrum</i> L.              | P                       | P      | P    | P     |
|                  | <i>Solanum paniculatum</i> L.         | A                       | A      | A    | P     |

P – present, A – absent. \*Phase that causes more damage to crops

in different cultures present in Espirito Santo State, eggs, larva and adults were observed in eight plants, host of the Amaranthaceae and Solanaceae, five of them with all development stages of the pest. The larva stage is the phase responsible for the greatest damage to crops (Table 1).

Attacked leaves showed typical symptoms mentioned to *H. vigintioctopunctata*, characterized by a network aspect due to scraped occasioned by larval and adults (Fig. 1.). According to Mohanchander *et al.*, in *S. melongena* leaves, larvae feed on phloem, epidermal and parenchymal tissues, while adults scraped upper and lower sides of the leaves [13]. In India, the production of eggplant fruits to field was reduced up 60% [14].

## 2. CONCLUSION

In 2016, the Brazilian Association of Seed and Seed Trade (ABCSEM) estimated 820 thousand hectares of vegetable crop, among which are the Amaranthaceae and Solanaceae. From the first record of *H. vigintioctopunctata* to the present study, they are 1000 km away from their first occurrence in Brazil. The new records are in agriculture areas and in eight hosts that represents a high potential of establishment of this pest in Brazil. *H. vigintioctopunctata* has not been mentioned in the list of quarantine pests of the Ministry of Agriculture, so efforts should be made to avoid the spread of *H. vigintioctopunctata* due to the high potential for losses that this pest can cause the production of vegetables throughout the national territory.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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