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## First report of cigarette beetle, *Lasioderma serricornes* (Fabricius) infesting domestically stored garlic from Gujarat, India

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### Introduction

Garlic, *Allium sativum* a bulbous flowering plant originated in South Asia, Central Asia, and north-eastern Iran. (Anon, 2023). India stands second after China in area and production of garlic (Anon, 2010). At various phases of the crop's growth, garlic is attacked by a variety of diseases and insect pests. In addition to lowering yield, insect pests have an adverse impact on quality and exportability. Thrips (*Thrips tabaci*); onion maggot (*Delia antiqua*); bulb mite (*Rhizoglyphus robin*); eriophyid mite (*Aceria tulipae*); red spider mite (*Tetranychus cinnabarinus*); gram pod borer (*Helicoverpa armigera*); tobacco caterpillar (*Spodoptera litura*); cutworm (*Agrotis ipsilon*) are the major pests of garlic (Satyagopal *et al.*, 2014). Apart from these cigarette beetles *Lasioderma serricornes* are also found to infest the valuable crops (Mathew, 2005). The cigarette beetle, *Lasioderma serricornes* (Fabricius) (Anobiidae: Coleoptera) is a cosmopolitan stored pest causing considerable economic damage to stored grains. The beetle prefers to harbor on dried tobacco, cereals, dates, dried fish, ginger, grain, pepper, medicines, raisins *etc.* Adults

are also capable of long-distance flight. Additionally, they have the ability to ruin more food consumed (Anon, 2022).

### Material and Methods

A roving survey was carried out in Panch Pipalava village (Latitude-20.7907° N, Longitude-70.8298° E, altitude- 15 m above MSL) of Kodinar taluka, Dist. Gir-Somnath, India on domestically (hanging the dried garlic bulb with stem together in a residence area) stored garlic bulb. The damaged samples were collected from domestically stored garlic bulb from ten farmers. To identify the presence of insect pest on stored garlic, collected samples were brought to the laboratory of Entomology, Department of Entomology, C.P. College of Agriculture, S.D.A.U., Sardarkrushinagar, India. The samples were kept in plastic jar with small holes for providing aeration. The sample were observed regularly for presence of any pest. After a week, beetles were seen inside the plastic jar and after second week the presence of small parasitic wasps was also noted. The beetles and wasps were collected from a plastic jar with the help of a mouth aspirator and preserved in 70% alcohol.

## Result and Discussion

The pest was identified as Cigarette beetle, *Lasioderma serricornes* (Fabricius) (Coleoptera: Anobiidae) based on the reference key given by Halstead (1986) and Cabrera (2022). From the infested garlic grubs, pupa and adult of *L. serricornes* were collected.

## Morphology

Body of grubs were creamy white and yellowish in color with head and mouthparts surrounded by yellowish brown hair (Fig.1A), Exarate pupa (Fig.1B), the adult was quite small, reddish brown in color and tiny hair on elytra with smooth appearance and it has a typical “humpbacked” appearance with serrated antennae (Fig.1 C, D,E,F).

## Damage

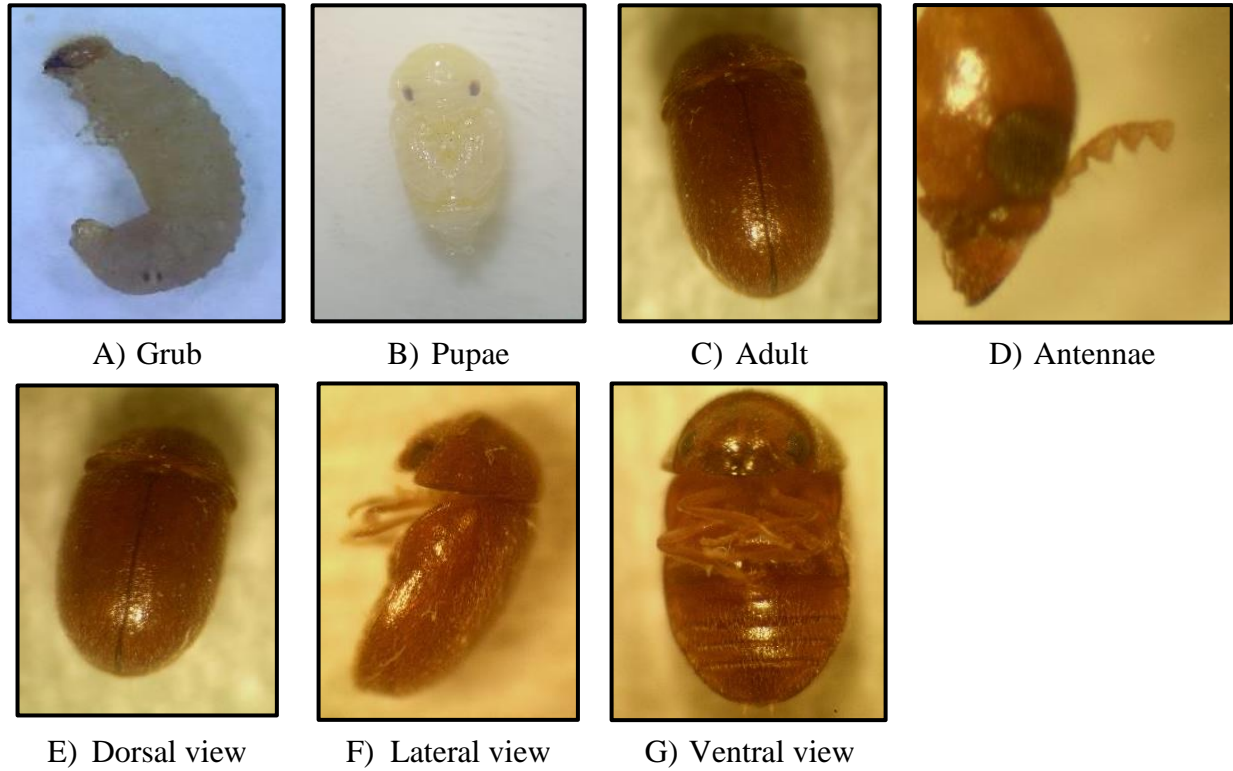
Grubs of *L. serricornes* caused damage to garlic cloves inside the bulb at the proximal end. Grubs feed inside the garlic clove and a brownish powdery mass appeared at the basal plate of bulb. (Fig.2 A, B). Pupation took place

between the damaged cloves. Adults emerged by breaking the papery wrapper of bulb.

A vast variety of hosts of *L. serricornes* include bamboo, beans, biscuits, cassava, chickpea, cocoa, coffee beans, copra, coriander, cotton seeds before and after harvesting, cotton seed meal, atta, cumin, dates, dried banana, dried cabbage, dried carrot, ginger, grain, groundnut, nutmeg, raisins, rice, tobacco, dried fish, fish meal, leather. However, Retief (1988) also recorded this pest on plant specimens displayed in a herbarium at National Herbarium, Pretoria, South Africa. At Bangalore (Karnataka) this pest was first reported by Mathew (2005) on garlic. For the first time in Gujarat this pest was noticed in domestically stored garlic at Panch Pipalava village (Ta. Kodinar: Dist. Gir-Somnath) during *kharif* 2022.

## Parasitoid

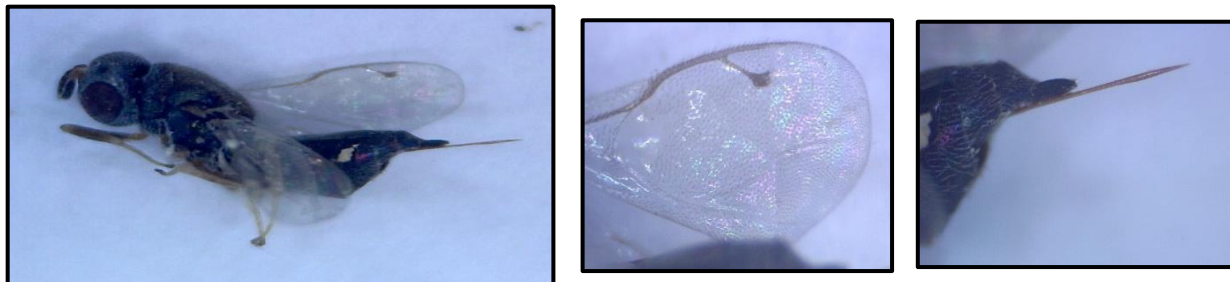
Primary pupal parasitoid  
*Anisopteromalus calandrae* Howard  
 (Hymenoptera: Pteromalidae) (Fig. 3 A, B)  
 was also found parasitizing the *L. serricornes* (Dodiya *et al.*, 2022).



**Fig. 1: Morphology of Cigarette beetle, *Lasioderma serricorne***



**Fig. 2: Cigarette beetle, *L. serricorne* infested garlic**



**Fig. 3: Parasitoid of cigarette beetle, *L. serricorne***

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