RESEARCH NOTE

Record of Hollyhock as an important alternate host of *Earias vittella* (Fab.) (Lepidoptera: Noctuidae) in eastern Uttar Pradesh

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ABSTRACT: The present study envisages the occurrence of *Earias vittella* on hollyhock (*Alcea rosea* Linn.) grown as an ornamental plant in and around Varanasi. Critical observation revealed that larvae of *E. vittella* bore the central shoot of the plant and caused appearance of typical ‘dead-heart’ and the plants gradually died from apical portion. On an average 25.57 per cent plants were affected by this pest during last week of December, 2015 and usually prompted to re-sow the crop in many cases. In case of hollyhock, *Earias* larva is more dangerous as single larva can kill the entire plant during November to March. Three successive malvaceous crops (summer okra – *kharif* okra – hollyhock) provides year round host availability for this dreaded pest of okra.

Keywords: Alternate host, *Earias vittella*, hollyhock

Hollyhock (*Alcea rosea* Linn.) is commonly grown as a winter ornamental plant for its characteristics large, alternately grown, showy flowers of various colors in many parts of northern India. It is tall, usually biennial plant with palmately lobed leaves along with a hairy stem. Apart from its aesthetic values, it is also rich in medicinal and nutritional qualities. The flowers are demulcent, diuretic, emollient and used for treatments of chest complaints and decoction is used to improve blood circulation, for constipation, dysmenorrhea, haemorrhage etc. (Sharma *et al*., 2011). A refreshing tea is also made from its flower petals. Hollyhock is commonly attacked by a number of insect pests throughout the growth period (Kerruish, 1997). During Rabi season of 2015-16 this annual herb when grown as ornamental and decorative plants was observed to be severely attacked by a borer insect in and around Varanasi, Uttar Pradesh. Critical observation revealed that caterpillars bored the central shoot of the plant and caused appearance of typical ‘dead-heart’ and the plants gradually dry from apical portion. Black excreta was often visible as peeping out from the nodal portion of the plant (Fig.1). On an average 25.57 per cent plants were affected by this pest during last week of December, 2015 and usually prompted to re-sow the crop in many cases. The larvae were collected and brought to the biocontrol laboratory of ICAR-Indian Institute of Vegetable Research, Varanasi, Uttar Pradesh and reared on hollyhock plants under...
laboratory conditions at 28±2°C temperature, 70-80% relative humidity and a photoperiod of 13:11 (L:D) hour for various studies.

The full-grown larvae were 16-23 mm long, stout, spindle shaped with grayish to dark brown in color having white longitudinal spots on dorsal surface of the body. Pupae were 11-15 mm long and light brown in color. Adults were medium sized moths. The forewings were pale white with a broad wedge shaped horizontal green patch in the middle, whereas hind wings were creamy white in color. The adults were taxonomically identified as *Earias vittella* (Fab.) (Lepidoptera: Noctuidae). Seasonal incidence of this borer pest was also recorded throughout the crop growth period from last week of November, 2015 to second week of February, 2016 under Varanasi conditions (Fig. 2). Borer incidence was 5.75% at the beginning of the cropping season i.e., last week of November, 2015 and then gradually increased and recorded highest shoot damage (32.54%) during third week of January, 2016. From this period onwards damage due to *E. vittella* gradually declined and recorded its lowest incidence of 4.46% during second week of February, 2016.

![Seasonal incidence of E. vittella on hollyhock](image.png)

**Fig. 2: Seasonal incidence of E. vittella on hollyhock**

In India, *E. vittella* is a major pest of cotton and okra and generally called as spotted boll worm and okra shoot and fruit borer, respectively. In the present investigation, this pest being oligophagous, was recorded to feed on hollyhock as a shoot borer belonging to the same family *i.e.*, Malvaceae. Although, this pest has been reported to damage hollyhock abroad (Anonymous, 2012; Kerruish, 1997), practically no information is available from India in this regard. Hence, this may perhaps be the first record of hollyhock as alternate host of *E. vittella* from Varanasi region of Uttar Pradesh in the country. Fertile alluvial soils of the Indo-Gangetic plains of eastern Uttar Pradesh provide ideal conditions for okra cultivation. Okra is extensively grown as summer and *Kharif* crops in this region. During onset of winter season (November onwards) okra is seldom available in this region. The ornamental plant hollyhock which is grown from November to March serves as an alternate host crop of *E. vittella*. Sowing of summer okra was generally done during March when hollyhock was in its physiological mature stage. This three successive malvaceous crops (summer okra – *Kharif* okra – hollyhock) provides year round host availability of this dreaded pest of okra. In case of hollyhock, *Earias* larva is more dangerous as single *Earias* larva can able to kill the entire plant. Severity of *E. vittella* on okra was reported earlier by many workers. Singh *et al.*, (2007) reported that its infestation started from the beginning of the crop growth and damage due to the borer varied from 21.33 to 43.99% in shoots and 21 to 51.3% in case of fruits. In another study Rai *et al.*, 2014 documented that incidence of *E. vittella* ranged from 23-54% on okra. Year round availabilities of suitable hosts in this region favoured to complete many overlapping generations of this oligophagous pest might be responsible for its severity on okra (Fig.3). Due to lack of knowledge about this pest on hollyhock, the problem was mostly unattended by many growers and this helps in easy multiplication of *E. vittella*. So, suitable control measure should be initiated as and when the first incidence of this borer pest was observed on this ornamental crop.

![Occurrence of E. vittella on different hosts throughout the year](image.png)

**Fig. 3: Occurrence of E. vittella on different hosts throughout the year**

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REFERENCES


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