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Short Communication

First report of Blister beetle, *Mylabris pustulata* Thunberg (Meloidae: Coleoptera) in maize fields from Sarson village of Almora District, Uttarakhand (India)

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Abstract

Orange banded blister beetle, *Mylabris pustulata* is an important species of Blister beetles and has been found to cause economic damage due to its polyphagous nature. In the present study, *M. pustulata* was found to be feeding on maize crop from Sarson village of Almora, Uttarakhand which is located on a ridge at the southern edge of the Kumaon Hills of the Himalaya range. This article brings into notice the damage by *M. pustulata* first time on maize from the specified area. The morphological features such as characteristic wing pattern, mouthparts, antennae etc. and feeding on sap or solid matter of floral or fruit in a similar manner as described in earlier texts revealed the similarity of test insect with *M. pustulata*.

Keywords: Almora, Blister beetle, Maize, *Mylabris pustulata*, Uttarakhand

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INTRODUCTION

Maize is one of the most important cereal crops and used globally for food, feed or fodder. Maize is grown both as summer and rabi crops in India and the important maize growing states are Rajasthan, Uttara Pradesh, Madhya Pradesh, Karnataka and Andhra Pradesh (Pandey *et al*, 2015). Maize is one of the traditional crops of Uttarakhand in addition to ragi, barley and small millets and is grown during summer (monsoon) season in hilly regions. There are many factors that limit the production of maize and insect pests attack in one of the major factors responsible for such losses. A wide number of insects affect growth of maize plant viz. Fall Army worm, American bollworm, Maize aphid, Ash weevil etc. Blister beetle, is also one of the important polyphagous pest and is found to cause appreciable economic damage in many crops such as redgram, Hibiscus, peas, beans, potatoes, turnips, tomatoes, etc. (Sreedevi *et al*, 2009). Blister beetles show hypermetamorphosis with the different larval instars being quite different in form from each other (Sharma *et al*, 2010). There are over 2500 species in approximately 125 genera belonging to Blister beetle (Bologna *et al*, 2005). Orange banded Blister beetle, *Mylabris pustulata* Thunb. has been found to attack various pulses, malvaceous and cucurbitaceous crops. The insect feed on flowers causing

considerable crop damage and may result in complete crop loss. Recently it has been found to be occurring in Cashew apple from Tirupathi region of Andhra Pradesh (Sreedevi *et al*, 2009) and maize in medium altitude hills of Meghalaya (Patra *et al*, 2013) and upper Himalayas of Jammu & Kashmir (Ahad *et al*, 2009). In the present study, survey was conducted in Almora district of Uttarakhand and it was found that the beetles heavily infested Maize crop in Sarosn village of Almora district, Uttarakhand. There were about 3-4 insects per plant and according to Dhavan *et al*, (2014), ETL (Economic thresh hold) of blister beetles has been assessed as 3 beetles per 10 plants. For the identification and characterization of weevils and blister beetles, morphology and feeding pattern of the insect was studied. The aim of the present study was to find out the type of pest feeding on maize crop from Sarson village of Almora, Uttarakhand, located in the Himalaya range.

MATERIALS AND METHODS

Insect pest Blister beetle of Meloidae family was observed feeding on maize crop grown in Sarson village of Almora, Uttarakhand which is situated at an altitude and latitude of 1642m above mean sea level, 29° 35' 39.0804" N and 79° 39' 14.0148" E respectively. The insects were collected and taken

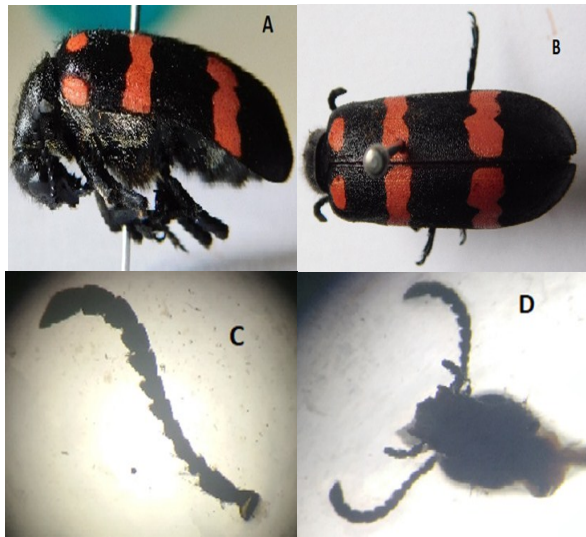


Fig. 1. Laboratory images of Blister beetles (*Mylabris pustulata*) collected from Maize fields of Almora, Uttarakhand: (A) Lateral view showing an orange band present laterally, (B) Dorsal view of insect, (C) Under microscope image of insect antennae, (D) Image of insect head.

to Pantnagar University for identification. The feeding pattern of *M. pustulata* is similar to other Meloid beetles by exclusively feeds on the petals of flowers of plants and never feeds on leaves (Manoharan *et al.*, 1987). Field collected insects from maize field were observed for morphological details and examined for characteristic wing pattern, mouthparts, antennae etc. The feeding activity was also examined for these beetles under maize field.

RESULTS AND DISCUSSION

The present study observed that *M. pustulata* was characterized by presence of black elytra having round orange spots and two transverse orange bands across the wings. The characteristic morphological characteristics of strongly deflexed head and a pair of moniliform antennae having 11 segments. The thorax and neck were connected by a very narrow flexible neck (Fig. 1). The mouthparts are chewing type which helps in cutting and chewing the cobs as reported by Solomon *et al.*, (2016). *Mylabris sp* is polyphagous in nature and feeds on sap and solid nutritious food from flowers of plants. The blister beetle adults were found to be feeding on silk of maize (Fig. 2).

Since maize is one of the important sources of income for hill farmers and pest feeding on the cobs of the plant may lead to economic losses of the growers. The insect being polyphagous makes it even a more serious matter of concern (Durairaj and Ganapathy, 2003). The present study provided the detail of the beetle, *M. pustulata* that infested maize crop from Almora, Uttarakhand located in a Mid-Himalayan region and an important agri-



Fig. 2. Images taken from farmer's maize field of Sarson village, Almora, Uttarakhand: (A) Blister beetles feeding on cob at field margin, (B) Insects feeding on cob inside field.

culture contributing area of the state.

Conclusion

Present study is first to provide the occurrence of *M. pustulata* in maize from hills of Uttarakhand which is a detrimental pest. The study will add to the basic information of pest-complex scenario of maize in Uttarakhand and similar ecological range, which could help in strategizing the management practices of the crop.

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