

## First report of weevil *Hypolixus truncatulus* F. on *Vachellia nilotica* from Hyderabad, Telangana state, India

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### Abstract

*Hypolixus truncatulus* is a weevil that belongs to Insecta: Coleoptera: Curculionoidea: Curculionidae. It is commonly called as *Amaranthus* weevil as it is a pest of *Amaranthus* spp. of family Amaranthaceae which is used as a leafy vegetable in India. This is the first report in which it was observed that the weevil *Hypolixus truncatulus* was found feeding on *Vachellia nilotica* leaves from the tree located in Veeranari Chakali Ilamma University campus, Koti, Hyderabad, Telangana State on 11th of August, 2023. The campus with lush green environment owing to its rich flora, fauna and heritage trees that almost give it a forest like canopy. The campus with lush green environment owing to its rich flora, fauna and heritage trees that almost give it a forest like canopy serves as a home in which many important insects like *Hypolixus truncatulus* can dwell adding to the rich biodiversity of Telangana and India on a whole.

**Keywords:** *Hypolixus truncatulus*, *Amaranthus* weevil, *Vachellia nilotica*

### Introduction

Curculionids have been found infesting a variety of host plants both in the field as well as in storage. Among these *Hypolixus truncatulus* (F.) was first noted by Lefroy (1909) as a pest and some life history notes were given by Fletcher (1914). Ayyar (1922) described the nature of damage caused by the larvae while Pruthi (1937) and Ahmad (1939) gave accounts of its biology and parasites. Gupta and Rawat (1954) gave an account of its life history while Agarwal (1985) added some information on its gall inducing habits. Kalia *et al.* (1994) reported its damage on *Acacia nilotica* and Phogat *et al.* (1994) recorded its seasonal incidence, and effects on growth and grain yield. Beeson (1938) and Kalia and Lal (1999) reported its damage on *Dalbergia sissoo* [1]

*Hypolixus truncatulus* is a weevil that belongs to Insecta: Coleoptera: Curculionoidea: Curculionidae. It is found in India, Mexico, Nigeria, South Africa and Kenya. It is commonly called as *Amaranthus* weevil as it is a pest of *Amaranthus* spp. of family Amaranthaceae which is used as a leafy vegetable in India. Larvae bore into the stems of *Amaranthus* and girdle the stems. In affected plants, gall like swellings can be observed on the stem which is scarred with longitudinal white markings. Inside the stem, tunnelling by stout creamy white larva can be found. In severe cases, plants show yellowing of leaves and wilting. [2] *Hypolixus truncatulus* F., commonly called *Amaranthus* weevil or Chaurai gall weevil infests many species of *Amaranthus* in India. It deposits eggs singly in cavities scooped on the shoot. The larva on hatching chews, feeds and tunnels through the stem finally reaching its base where a gall is developed [3].

*Hypolixus truncatulus* (F.) has been observed as a major pest of cultivated amaranthus *viz.*, *Amaranthus caudatus* L. in the Jammu region [4]. It has also been reported in forest nursery es and young plantations of *Acacia nilotica* at Jabalpur, Madhya Pradesh but its incidence from Telangana state has not been reported so far. Therefore, it is for the first time seen feeding on the leaves of *Vachellia nilotica* in Telangana State. *Vachellia nilotica* more commonly known

as *Acacia nilotica* is vernacularly known as gum arabic tree, babul, thorn mimosa, or thorny acacia. It is a flowering tree in the family Fabaceae. It is a medicinally important tree that has been used for its astringent, tonic, aphrodisiac, expectorant properties. It yields important gums and resins as well.

### Identification and life cycle

*Hypolixus truncatulus* adults are dark brown, variegated with white hairs and several dark patches of dense pubescence [5]. Body is medium sized varying from 9.0 - 14.0 mm long and 3.0 -4.0 mm wide. Females being slightly larger than males. Eyes are large, well developed, black, located at the base of rostrum on either side. Antennae are geniculate, fourteen segmented, present on either side of the snout arising from anterior one third of the snout. Full grown larva is creamish white, apodous, C shaped grub is found. Females lay oval, light yellowish eggs singly in excavated holes in stems, branches, petiole or midrib of the leaves. Egg period varies from 3-6 days in June-July. After laying eggs, the holes are covered with the light green colour substances, secreted from the mouth. Hatching period is 3- 4 days and it takes almost 20-45 days to complete its 5 larval instars. After hatching, the larva begins to feed on the internal tissues, making its way into the stem in the form of an irregular zigzag tunnel, filling it with excreta as it bores down. They eaten up the pith region of the plant and go on tunneling downwards until fully fed and gets ready for pupation. Before pupation full grown larva bores its way up to the stem surface, where a small round hole is made leaving the thin epidermis layer intact. At the same place, subsequently the larva makes elongate oval pupal chamber which afterwards swells up and develops a large gall. Pupae are exarate, creamish white colour in the beginning but gradually turning into pale yellow. Pupal period lasts for 9-24 days and they completed at least three generations from April to November and total life cycle takes almost 58-64 days [6].

### Methodology

Surveys were conducted to make a note of biodiversity of plants and insects in the university campus. In one of the surveys, it was observed that a weevil was found ferociously feeding on the leaves of *Vachellia nilotica* tree located in the botanical garden of the campus [Figure 2]. Its photos were captured and it was identified with the help of the subject experts and available literature. It was identified as *Hypolixus truncatulus*. It was found feeding on *Vachellia nilotica* leaves from the tree located in Veeranari Chakali IIT Hyderabad University campus, Koti, Hyderabad, Telangana



**Fig 1:** *Hypolixus truncatulus* on *Vachellia nilotica*

State on 11th of August, 2023.

### Results and Discussion

*Hypolixus truncatulus* was found ferociously feeding on the leaves of *Vachellia nilotica*. This is in accordance with the earlier study that reports it to be a polyphagous pest that can infest large numbers of other host plants i.e. *Acacia nilotica*, *Dalbergia sissoo* etc. [7].

*Hypolixus truncatulus* was found to be ash grey in colour with brown elytra and was having a very long snout as shown in Figure 1.



**Fig 2:** *Vachellia nilotica*

### Conclusion

This study confirms that *Hypolixus truncatulus* feeds not only on *Amaranthus*, but also on *Vachellia nilotica*. This first report of it from Telangana is a new distributional record of this weevil. The campus with lush green environment owing to its rich flora, fauna and heritage trees that almost give it a forest like canopy serves as a home in which many important insects like *Hypolixus truncatulus* can dwell adding to the rich biodiversity of Telangana and India on a whole.

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