

**Report on infestation of bruchid beetle, *Acanthoscelides* sp. (Coleoptera: Bruchidae) on seeds of *Leucaena leucocephala* in industrial area of Himachal Pradesh**

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The studies were conducted in Baddi, Barotiwala and Nalagarh (BBN) industrial area of Himachal Pradesh situated at an altitude of 422-448 m above mean sea level and between 30°55' to 31°02' N latitude and 76°42' to 76°49' E longitude to find out the insect infestation on seeds of tree species viz., *Leucaena leucocephala*, *Toona ciliata* and *Dalbergia sissoo* growing along road side. Seeds/pods of these tree species were collected from four selected sites, a. National Highway 21-A in Baddi industrial area, b. Baddi-Barotiwala Link Road c. Kalka-Charnia Link Road and d. 200m away from road in Kalka-Charnia Link Road which was taken as control. The collected seeds were observed for insect pest infestations and after observation, the seeds were put in the plastic containers (7.0 cm diameter) covered with muslin cloth and kept on the laboratory table for further emergence of the insect pests, if any. Five plastic jars were maintained per location. In total sixty jars containing seeds of three tree species collected from four sites were kept on the laboratory table. The data on per cent infestation of damaged seeds were recorded at weekly interval. The emerged insect species were recorded and identified. The per cent insect pest infestation was calculated by the below given formula:

$$\text{Insect pest Infestation (\%)} = \frac{\text{Number of infested seeds}}{\text{Total number of seeds}} \times 100$$

The seeds of *L. leucocephala* collected from National Highway 21-A in Baddi industrial area were found infested with bruchid beetle which was identified as *Acanthoscelides* sp. (Coleoptera: Bruchidae) (Fig. 1). The infested seeds did not germinate as these were completely damaged by the beetle (Fig. 1). The beetles were dark brown in colour with marginal shading on elytra (Fig. 2). The light yellowish coloured eggs of the beetle were observed on *Leucaena* seeds (Fig. 1). The larvae developed inside the seeds and adult beetles emerged from the seeds. At the time of collection of seeds/ pods, per cent seed infestation was recorded as 12.8 per cent which increased with the storage interval. After 12 weeks of storage, 54.8 per cent per cent of the seeds

were found infested with the beetle. No insect infestation of seeds/ pods of *L. leucocephala* collected from other sites were recorded. Similarly, no insect pest infestation on seeds of other tree species was observed.

**Table 1: Infestation of bruchid beetle, *Acanthoscelides* sp. on seeds of *Leucaena leucocephala* collected from National Highway in BBN industrial area of Himachal Pradesh**

Date of observation	Per cent insect infestation
3-4-2015	12.8*
10-4-2015	13.6
17-4-2015	16.4
24-4-2015	20.0
1-5-2015	21.6
8-5-2015	24.4
15-5-2015	27.2
22-5-2015	28.0
29-5-2015	32.8
5-6-2015	41.2
12-6-2015	48.0
19-6-2015	54.8

\*Average of five replications

We found infestation of *Acanthoscelides* sp. in seeds of *L. leucocephala* collected only from National Highway 21-A (Baddi) which is most polluted area and under high pollution plants grow under stress and are liable to be attacked by insect pests and diseases. In germination test, lower germination of *L. leucocephala* seeds collected from this site has been recorded (Sharma *et al.*, 2018) as compared to other sites. The insect predation might have contributed to reductions in seed germination. The impact of insect predation on seed germination has also been reported by previous workers (Janzen, 1971). The severe predation of *Leucaena* seeds by *A. macropthalmus* has been reported by Rodrigues *et al.*, (2012). The seed germination was

drastically affected by the insect predation. They observed no germination of *Leucaena* seeds which were attacked by *A. macrophthalmus* against 59 per cent germination of unattacked seeds.

*Leucaena leucocephala* is an important fodder tree species of low and mid hills of Himachal Pradesh and insect predation by *Acanthoscelides* sp. will affect its natural regeneration.

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**Figure 1. Seeds of *Leucaena leucocephala* infested with bruchid beetle *Acanthoscelides* sp.**



**Figure 2. Adults of *Acanthoscelides* sp.**

## **References**

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