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## MANAGEMENT APPROACHES OF RED PUMPKIN BEETLE

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### Introduction

Red pumpkin beetle is one of the common and foremost pest of cucurbits which has a wide host range, as in sweet gourd, bottle gourd, the cucurbit crop group includes vegetable species like pumpkin, Snake Gourd, Bottle Gourd, Bitter Gourd, cucumber, Ridge Gourd, Round Melon, Pointed Gourd, Ash Gourd, Sponge Gourd as well as Watermelon and Muskmelon.

Cucurbits are the most widely grown and important crops in the tropical and subtropical countries of the world. In India, it occurs throughout the country but is more common in northwestern parts. It is an important cash crop. Cucurbits in India are grown on about 4,290,000 ha with productivity of 10.52 t/ha (<https://plantix.net>). And cucurbit cultivation accounts for about 5.6% of total vegetable production in India. Haryana has the highest production and shares about 22.01% of the total production followed by MP 12.39%, Karnataka 10.58% (<http://agriexchange.apeda.gov.in>).

Several insect pests are infesting the cucurbits crop such as red pumpkin beetle, fruit fly, leaf minor, etc. Out of which the red pumpkin beetle (*Aulacophora*), the *A. foveicollis* is the commonest beetle found in India.

### Mark of identification

**Grub** : The grub leads a subterranean (underground) life and full-grown grub measure about 12 mm in length.

Freshly hatched grub dirty white with a slightly darker oval shield at the back, fully grown grub creamy yellow.

**Adult** : The dorsal part of the body of the adult beetle is deep orange, while the ventral side is black. The beetle appears to be oblong measuring 5-8 mm in length and 3.5- 3.75 mm in width. The posterior part of the abdomen bears soft white hairs.

*Aulacophora foveicollis* : red in colour

*A. cincta* (Purple beetle): grey having a glistening yellow-red border

*A. intermedia* (Ash beetle): blue



Figure.1:-Adult of red pumpkin beetle

### Life-cycle

### Nature of damage

Red pumpkin beetle infests a wide variety of vegetables like pumpkin, gourds, cucumber, sponge gourd but has most damage in pumpkin. Grub and adult stage is the damaging stage of the red pumpkin beetle. The pest, however, occurs throughout the year and causes severe damage to the crops, especially at the seedling stage.

Adult insects feed voraciously on the leaves, flowers, and fruits. The beetle makes an irregular hole in the plant tissues, causing death or retardation of growth. The damage done to young seedlings is often devastating. The beetles may kill seedlings and sometimes the crops have to be resown 3-4 times. The grubs of this pest remain in the soil and feed on roots and stem of the plant as well as fruits touching the soil and thus making such fruits unsuitable for human consumption.



**Figure.2:-Damage symptom of red pumpkin beetle**

The pest, however, occurs throughout the year but they are active from March to October though the peak period of activity is between *April to June* and causes severe damage to the crops, especially at the seedling stage. It may cause up to 70 % damage on leaves and 60 % damage on flowers of cucumber.

### Management strategy

- Deep ploughing of the infested fields should be done to expose the grub and pupa from the soil to sunlight and predators in the soil and destroy the pupa also.
- Avoid staggered sowing to manage the red pumpkin beetle .
- Collection and destruction of adult beetle.
- Spray the bait on the maize plants grown as trap crop ,
- Sown the crop in November to avoid the damage of these pests
- Antixenosis – Hairy varieties of cucumber and melon.
- Spraying of methyl parathion 0.05% are effective control of red pumpkin beetle.
- Apply 7kg of carbofuran 3G per ha 3-4 cm deep in the soil near the base of the plants just after germination and irrigate.

### Conclusion

Cucurbits is an important cash crop. In India, it occurs throughout the country but is more common in north western parts. Many insect-pest are attack on cucurbits crop but Red pumpkin beetle is a major pest of Cucurbits. Due to attack of pest and inadmissible management of crop leads to the loss of crop. In India pest control strategy are based on chemical control, so more chaotic use of chemical pesticides result in harmful effect on the environment. According to situation integrated pest management is best approach to manage the pest and environment innocence.