

## Insect-Pest and Disease Management of Snake Gourd (*Trichosanthes cucumerina* L.)

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## INTRODUCTION

### Insect-pest:

**Fruit fly (*Bactrocera cucurbitae*):** Among the important cucurbits cultivated, snake gourd is treated as the most preferred crop by the fruit fly when it infests at early stages of crop growth, the fruit yield is drastically reduced. The fly completes incubation, larval and pupal stages within 3 weeks, hence, it is very difficult to control effectively. Adult females usually lay 20 to 30 eggs, which are cigarette-shaped with white color on tender fruits. Soon after hatching of the eggs; the white maggot's laid inside the fruits, causing damage to the fruits. The typical symptoms of fruit infestation include deformity, rotting, and in severe case, premature dropping of fruits. Their activity becomes severe during rainy season, as more than 80% fruits are damaged.

### Control:

- Grow resistant or tolerant variety, if available.
- Spray the crop with cypermethrin 0.025% or fenitrothion 0.05% along with 5% jiggery.

**Red pumpkin beetle (*Aulacophora foveicollis*)** Shiny yellowish-red, orange, or black-colored adults of this polyphagous pest lay eggs in moist soils around the plant. The beetles attack most of the cucurbits at seedling stage, especially at cotyledonary leaf stage. However, snake gourd is less affected by the beetle. The yellow-brown flying adults infest plants immediately after germination and defoliate their leaves. On hatching the grubs feed on the roots and the underground portion of the host plant and also on fruits touching the soil. Young seedling and tender leaves are mainly preferred by the adults, and damage at this stage may cause death of seedling.

**Control:**

- Follow clean cultivation.
  - Collect and destroy the adult beetles.
  - Follow deep ploughing after harvesting to kill the grubs in the soil.
- ❖ **Leaf Miner (*Liriomyza trifoli*):** This is an introduced polyphagous pest and destructive to almost all cucurbitaceous crops including Snake gourd. The incidence starts after 15 days of seed germination. The mines at the beginning remain very thin, which gradually widen with the enlarge in soil. The loss in severely infested crop is vital. The crop seems to be burnt. Usually, the infestation of leaf miner increases during March-April.

**Control:**

- Collect and destroy the infected plant parts after 7 days of germination.
  - Spray the crop with 0.4% neem seed kernels extract at weekly intervals.
- ❖ **Root knot nematodes (*Meloidogyne incognita*, *M. hapla* and *M. Javanica*):** In general, all the cucurbits including snake gourd are highly susceptible to nematode infestation viz., root-knot nematode. These nematodes are normally long slender and microscopic organisms, which prefer to attack the root system of the crops. These plant parasitic worms incite root galls, causing poor and stunted growth and drastic reduction of yield.

**Control:**

- Grow resistant variety, if available.
- Plough the field deep in hot summer months follow long crop rotation with non-host crops.
- Apply neem cake @ 12-15 t/ha.

**Diseases:**

- ❖ **Anthracnose (*Colletotrichum lagenarium*):** This is the most harming disease of cucurbits like muskmelon, pumpkin, squash and gourds. The fungus is highly prevalent in high humidity, especially when summer rain occurs regularly, affecting mostly the above-ground plant parts. Foliar symptoms vary considerably depending upon the severity of infection. The disease is characterized by the formation of yellow, more or less angular spots on the upper surface or the leaves. White-purplish spores appear on upper surface or the leaves.

**Control:**

- Apply well-decomposed farmyard manure with *Trichoderma harzianum* 1t/ha.
  - Treat the seed with carbendazim or captan 2.5g/kg of seed.
  - Apply 250 kg/ha neem cake immediately after germination and at the time of flowering.
- ❖ **Downy mildew (*Pseudoperonospora cubensis*):** This is one of the most destructive foliar fungal diseases attacking the snake gourd and other cucurbit. Subsequently, if not controlled, gradually the lesions grow in size and coalesce with each other. The severely infected leaves of downy mildew roll upward with brownish tinge that produces a blighted appearance. Greyish black downy fungal growth is usually noticed on the under surface of the affected leaves.

**Control:**

- Use disease-free healthy planting material.
- Strictly follow proper field sanitation
- Spray the crop with mancozeb 0.25%, or Ridomil 0.2% at 10- 15day intervals.



❖ **Powdery mildew (*Sphaerotheca fuliginea*):** The disease causes maximum damage in warm and dry areas where moisture is present as dew. The infection of powdery mildew disease first appears on upper side of the leaves, as well as the stem, as white to dull white powdery growth, which subsequently further increases, covering most of the leaf surface, resulting in serious true withering, drying and finally defoliation of

leaves. In severe cases, the infected fruits may be covered with a white powdery mass, and they may drop off subsequently. In addition, the infected fruits also deteriorate in quality.

**Control:**

- Grow resistant varieties, if available.
- Spray the crop with Bavistin 0.1%, Benlate 0.2%, Karathane 0.1%, wettable sulfur 2%, or Topsin M 1 g/liter of water at 15day intervals.