

Management

A. Physical control

- During rainy season, in the evening hours wet gunny sacks or papaya stem waste should be placed near hide outs in the garden. Next day morning, the snails hiding below these should be collected and destroyed by immersing in 25% salt solution (1 kg salt in 4 litre water).



- Regularly remove debris from the garden to avoid snail population build up.

B. Cultural Method

- Deep ploughing helps in exposing snails & their egg masses present in the soil to their natural enemies.
- Do not grow creeper crops viz., cowpea, beans, horse gram etc., adjacent to mulberry, as these crops support snails for hiding and breeding.

C. Chemical Method

- Snail kill (2.5% metaldehyde) pellets are to be spread in mulberry garden in alternate rows (@ 2 to 3 pellets per spot) during evening hours in rainy season or after irrigation/sprinkler for effective management. Snail kill is commercially available as most effective molluscicide and effective in all weather conditions. It acts as a specific attractant toxicant. If snail ingests and absorbs the metaldehyde, it induces

excessive secretion of mucus and leads to death.

- Metaldehyde pellets should also be placed near snail hiding places, compost pits, dumping yards, water canals for suppression of snail population.
- About 2 kg of snail kill pellets are required to cover one acre of mulberry garden.
- Metaldehyde was found non-toxic to silkworms as well as mulberry and can be used without any ambiguity by the sericulturists.



Precaution: Avoid inhalation of fumes of metaldehyde and wash hands properly.

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MANAGEMENT OF GIANT AFRICAN SNAIL IN MULBERRY PLANTATION



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MANAGEMENT OF GIANT AFRICAN SNAIL IN MULBERRY PLANTATION



Mulberry (*Morus* spp.) is inhabited by various insect pests like pink mealybug (*Maconellicoccus hirsutus*), papaya mealybug (*Paracoccus marginatus*), thrips (*Pseudodendrothrips mori*), white fly (*Dialeuropora decmpuncta*) etc., which brings down the leaf productivity and quality by 20-25%.

In recent years, a molluscan pest popularly known as giant African snail, *Achatina fulica* Bowdich (Gastropoda: Achatinidae) is posing threat to mulberry. The snail has very wide host range and infests crops such as Coffee, Mango, Papaya, Rubber, Cotton, Ragi, Coconut, Sunflower, Gram, Beans, Peas, Brinjal, Pumpkin, Cucumber, Cabbage, Cauliflower, Sponge gourd, Bhendi, Banana, Marigold. Mulberry plantations have become latest casualty for the snail.

Life Cycle, Behaviour & Occurrence

Though snails are bisexual in nature, self reproduction is not possible. They start laying eggs 2 to 3 weeks after mating. Normally lay round yellowish eggs in small groups upto 300 surrounded by mucous substance beneath dried leaves or soil or underneath any material. They lay about 1000 eggs during their lifetime of about 3 to 5 years. Snails lay upto 100 eggs during first year, and upto 500 during second year; fecundity declines second year onwards. The young ones attain maturity in about 9 weeks and live upto five years. They undergo hibernation and aestivation during adverse climatic conditions.



Snail eggs in clutch Aestivation of snails

The giant African snails are nocturnal in habit. During day time they hide below fallen leaves, inside peeled off mulberry bark or under stones and come out from hiding places during night to attack host plants and cling to the dorsal and protected surfaces of leaves. They are active in rainy season. Though their activity is observed from August to January, the incidence is severe from October to December.

Its conspicuous occurrence is noticed in climatic conditions like high humidity

(>80%) and moderate temperature (9-29° C), which are more congenial for the population build-up.

Symptoms on mulberry

Giant African snails feed on tender leaves, tender bark & stem and cause damage. The infested leaves show circular holes in the centre. Due to such damage, mulberry plants exhibit stunted growth leading to leaf yield loss to an extent of 10% besides quality. It has been established that when mulberry leaves from snail infested garden were provided to silkworms, they consume less leaf due to presence of mucus like substance on the leaves secreted by the pest. Due to this, reduction in growth and development of silkworms happens leading to considerable reduction in cocoon production



Damage to
mulberry stump



Damage to
standing crop