

## Effective use in Commercial Cannabis cultivation:

Rates with Atheta in cannabis seem to vary a little from what the traditional, registered rates would indicate. Instead of treating in meters, and as a row crop, we recommend that each plant have direct attention paid to them, for optimal results. The climate fluctuation and temperature and humidity variations, along with the plant's rapid growth pattern, necessity to ensure proper air movement, and hairiness/stickiness of the plant all combine to make cannabis a complex and difficult crop to treat.

For Commercial Cannabis Rates, please fill out our [Commercial Cultivation Inquiry](#) for a discrete, personalized Chemical-Free Pest Management plan.

## For Best Results:

The Rove beetle is most effective when applications are started before fungus gnat populations become well established, or while numbers are still low (less than one seen in a trap, per week). One application of Atheta per crop cycle is usually sufficient, if started early in the season. Because rove beetles have a longer life cycle and take longer to establish than the Stratiolaelaps predatory mite, it should be used along with Stratiolaelaps for best results.

Do not water soil or growing medium 10 minutes before and a few hours after release. To release, rotate the canister (to distribute beetles inside), then open the lid and release in centrally located area where major infestation is onto marginally damp soil (only open when ready to release as they may fly away). Also distribute on floors, greenhouse weeds, under benches, and places where larvae will develop. Leave the canister on its side in the treatment area to ensure release of all beetles.

Because this is a soil dwelling, generalist beetle, we have been using this successfully, in conjunction with the predatory soil mite Stratiolaelaps scimitus, for root aphid prevention. Although paperwork and research is not documented for root aphids and this product, preventative applications have been promising. Very similar to the soil mites, our recommendation is to apply these when you bring new soil into your operation, or at transplant. 100 count, every 3-4 weeks should be enough for 1,000 square foot growing rooms. For larger rooms, with additional larger plant pots, you may need to apply the beetles in 1,000 count every 3-4 weeks. Not only does it work well for fungus gnat control, but grower trials have shown preventative releases help with root aphid control as well.

## Description

Rove beetle (*Dalotia coriaria*), formerly known as Atheta coriaria, is a native species of a soil-dwelling rove beetle which feeds on small insects and mites. Both adults and larvae are active, aggressive predators and are attracted to decomposing plant or animal material and algae, where their preferred prey are found. While they are technically beetles, they do not necessarily look like traditional beetles. They are light to dark brown in color, with adults being 3-4 mm long. They are slender with short wing covers. Rove beetles have an interesting habit of curving their abdomen upwards, like scorpions, and can run or fly when disturbed (usually close to the ground). Since they can actively fly, they rapidly colonize the release area.

Available in 100 count 30 dram vials, 500 count and 1,000 count one tubes, and 3,000 count tubs.

## Use in Biological Control

Rove beetles are used primarily to assist in the control of shore flies and fungus gnats, and other small arthropods in the soil or planting media. They also help control soil stages of thrips and feed on most other small soil organisms, such as moth flies, springtails, and root mealybugs.

It has been used successfully in Cannabis, vegetable, bedding and potted plant production, and seedling and cutting propagation. Atheta adapts well to the various growth media (including rockwool and coconut fiber) and capillary mats used in plant production. They will not survive freezing conditions.

## Life Cycle

The complete life cycle of rove beetles is 21 days at 70°F, with relative humidity between 40 and 99%. The sex ratio is an equal, 1:1, females to males. Eggs hatch in 3-4 days into larvae, which resemble adults. Pupal chambers are constructed out of silk. Each adult rove beetle consumes 10-20 prey per day. In greenhouse conditions, adults are non-diapausing and can be used year round.

## For Best Results

Rove beetle is most effective when applications are started before fungus gnat population becomes well established or while numbers are still low (less than one seen in a trap, per week). One application of Atheta per crop cycle is usually sufficient if started early in the season. Because rove beetle has a longer life cycle and takes longer to establish than the Stratiolaelaps predatory mite, so should be used along with Stratiolaelaps for best results.

## Introduction Rates

Apply 1 - 5 per 10 square feet

Rove beetle is most effective when applications are started before fungus gnat populations become well established or while numbers are still low (below 10 per trap, per week). One application of rove beetles per crop cycle is usually sufficient if started early in the season. For soil culture, sawdust bag, or rockwool culture, apply 1 per 10 ft<sup>2</sup>.

Release throughout the greenhouse at a rate of 100 - 1,000 per greenhouse weekly or biweekly, depending on greenhouse history of shore flies and fungus gnats. To ensure reproduction and mating, release 50 -100 in one spot in the center of the release area. Be sure to treat areas with wet, exposed areas of soil where fungus gnats and shore flies are likely to breed.

Keep in darkness at 50-59°F until ready to use.

- Use within 18 hours of receipt.