

Nematac[®] C

Advanced Biocontrol for Cranberry Girdler

Nematac[®] C is a proprietary formulation of the naturally occurring insect-parasitic nematode, *Steinernema carpocapsae*. These nematodes are released in their infective juvenile stage to search out and enter insect pests. Once inside, the nematodes release symbiotic bacteria that quickly kill targeted insects. Reproduction inside the insect releases new generations of infective juvenile nematodes that disperse in search of further prey.

Nematac C is active against larval stages of the cranberry girdler (*Chrysoteuchia topiaria*) and black vine weevil (*Otiorhynchus sulcatus*). Nematac C quickly controls pest larvae at the time of application and is persistent in the soil, providing prolonged protection against pest re-infestation. Nematac C is ideally suited for use in integrated pest management programs as an important tool for resistance management, worker safety and environmental responsibility.

Nematac C is especially suitable for use in cranberries due to unique environmental conditions in which cranberries are grown. The cranberry root zone has high soil moisture levels, is protected from direct sunlight (and from ultraviolet radiation), and temperatures rarely reach levels harmful to nematodes.

Cranberry Girdler Natural History and Life Cycle

The cranberry girdler is also known as the subterranean webworm and can be found throughout the United States and Canada. Males and female moths are active at night and normally fly low to the ground. Adults are known as snout moths because their mouthparts are projected forward and their wings are held tube-like around the body. Larvae are dirty-white or grey and are found in the thatch or soil.

(Continued)



Adult cranberry girdler. ¹



Cranberry girdler webworm. ¹

The cranberry girdler overwinters as a fully grown larva in a cocoon buried in the leaf litter. After the winter flood is removed in early spring, the larva pupates and adults emerge in May or June and can continue through August. After mating, females can lay as many as 700 eggs that are deposited randomly in the leaf litter. Larvae emerge in 10-12 days depending on temperature. The larvae prefer drier locations with considerable build-up of fallen leaves and trash. The larvae spin cocoons to overwinter in September to October. Cranberry girdlers have only one generation per year.

Cranberry Girdler Damage

Cranberry girdler larvae mainly chew on the stems and runners and, to a lesser extent, on the roots. Feeding usually entails complete girdling of the vine or its severance, leading to destruction of vines. Damage mimics drought stress, with infested areas appearing thin with reduced leaf density that, if left untreated, eventually coalesce into irregular brown patches as larvae continue to grow and feed. Damage often is most evident during periods of hot, dry weather, but this varies based on geographical location. In many regions of North America, peak damage generally occurs in late summer and early fall, whereas areas with mild winters may experience damage in spring, summer, and fall. Consult your local extension agent for appropriate times to monitor for pest infestations.

Application Details

Apply Nematac® C at a rate of three billion nematodes per acre starting in May when larvae are first present through August before they spin cocoons. Nematac C can be applied through irrigation systems (chemigation), by conventional boom sprayers or by air. Irrigation prior to application will maintain soil moisture and promote establishment of nematodes in the soil. Immediately following application, irrigate with at least 1 cm or 1/2" of water. Water is needed to wash nematodes from cranberry foliage and carry them into the trash and upper soil layers. Continue irrigation daily for 14 days to preserve moist conditions. Remove all sprayer filters and maintain pump pressure below 300 psi to avoid damaging nematodes. Optimum results are achieved when nematodes are applied to moist soil in early morning or evening to avoid heat and direct sunlight. Soil temperatures should be between 13° and 30°C (55-86°F).

Do not apply chlorpyrifos or methomyl within one week before or after application. Nematac C is compatible with most other pesticides and fertilizers when applied separately.



Root damage from Cranberry Girdler ¹



Damage caused by cranberry girdler. ¹

¹ Photos provided by Agr. & Agr. Food Canada, www.bccranberrygrowers.com