

Management of Root-knot Nematode

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This project has the following two objectives:

1. Evaluate new products for management of root-knot nematode on carrots.
2. Evaluate the effectiveness of trap crops for management of root-knot nematode on carrots.

Root-knot nematodes (*Meloidogyne* sp.) are widely distributed throughout California and are the most important nematode pest of carrot. Current control methodology relies on the use of Metam sodium and Telone II.

The potential for loss of the standard chemical nematicides due to various environmental concerns is great enough to warrant a continued search for alternatives. Each year, a number of “promising” candidates are promoted by various sources. These include chemical nematicides, and what are termed natural or novel products or soil amendments. Even though many of these may not prove to be efficacious, demonstrating this by comparison to a standard nematicide treatment provides valuable justification for maintaining current registrations. Such a process succeeds in sorting out those that do truly have potential for nematode management. A trial is currently in progress to evaluate several new products including Quillaja 35% (an extract of the Soap Bark tree), Ditera DF, and two new products from Stoller.

Trap cropping is a nematode management technique that has been tested periodically since the late 1800’s. A susceptible host is planted and larvae of a sedentary parasitic nematode such as root-knot are induced to enter and establish a feeding site. Once this has occurred, and the female begins to mature, she is unable to leave the root. The plants are then destroyed before the life cycle of the nematode can be completed, trapping nematodes within the root. By itself, trap cropping is not likely to provide the same level of control as a chemical nematicide such as Telone II, because not all nematodes are induced to enter the roots. However, the potential for loss of registration of this and other chemical nematicides for various environmental reasons is great enough that the use of two or more other techniques in combination, that will each provide partial control of the nematode population is warranted. A trap crop trial is currently in progress.

The majority of the carrots grown in California are grown in Kern County and the Shafter station provides climatic and cultural conditions similar to those in local grower fields.