

Understanding the Applications of Beneficial Nematodes

With a variety of factors driving pest management changes in horticultural operations, many professionals are looking to expand their use of biological control agents (BCAs), including beneficial nematodes. Resistance management, restricted entry intervals and enhanced environmental awareness all play a role in this trend.

While many professional horticultural growers understand what beneficial nematodes are, they may struggle to see how these biological pest control products can fit into their operations.

To help growers understand the applications and uses of beneficial nematodes, we have summarized the most important information needed in making these management decisions. We have also developed a [blog](#) and [online community](#) as a resource for growers, researchers and industry experts to connect and exchange information about the use of beneficial nematodes.

How Beneficial Nematodes Work

Beneficial or insect-parasitic nematodes are microscopic, un-segmented, roundworms. In their infective juvenile stage, they search out and kill targeted insect pests. When a beneficial nematode finds its host pest, it enters through natural openings (i.e., mouth, anus and spiracles). Once inside, the nematodes release a bacterium that kills the host within 24-48 hours. Reproduction inside the insect releases new generations of nematodes that seek out other pests.

Targeted Insect Pests

Beneficial nematodes attack and provide control of a variety of insect pests. Some of the most problematic pests included are:

- Codling Moth
- Fungus Gnat
- Mole Cricket
- Shore Fly
- Western Flower Thrips
- White Grub

There are many additional pests included in this list. To see a list of the pests controlled with Becker Underwood beneficial nematode products, check our online [guide](#). Becker Underwood and researchers all over the world continuously evaluate beneficial nematodes as solutions to control existing and emerging insect pests.

How Can You Use Beneficial Nematodes?

Whether your interest in using beneficial nematodes is driven by a sustainability initiative or by chemical resistance issues you have experienced, there are a variety of ways to evaluate their place in your operation.

Compatibility

Nematodes can be used as a standalone program or in rotation with conventional insecticides to effectively control pest populations. Because insect parasitic nematodes have no adverse effects on beneficial insects or microorganisms, nematodes also can be used in conjunction with other BCAs to broaden the pest control spectrum. Becker Underwood provides a [compatibility chart](#) so you know what products work in combination with our beneficial nematodes.

Chemical Use

Using BCAs to manage pest populations can reduce the number of insecticide applications needed. Therefore, beneficial nematodes can be an extremely effective tool in your IPM program.

Re-Entry Interval

Beneficial nematode products have no re-entry interval. This means it is safe to enter the application area immediately following spraying of nematodes. If other pesticides or chemicals are included with the application, check their labels for REI information.

Resistance Concerns

There is no risk of insect pests developing a resistance to beneficial nematodes. Many species of insects can develop resistance to certain chemicals that have been applied frequently. That is not a concern with beneficial nematodes. They physically enter the body of the pest and release a bacterium that causes the death of the insect.

Safety

Beneficial nematodes are host-specific and only affect targeted insect pests. They are harmless to any organism – human, plant, animal – other than susceptible insects. Because beneficial nematodes are non-toxic and harmless to humans, there is no need for applicators to wear protective gear, and no disposal restrictions.

Application Requirements

Because beneficial nematodes are living organisms, they demand more specific environmental conditions.

Nematodes should be applied when temperatures are below 86°F. Darker, cool, wet conditions maximize nematode activity, whereas hot, dry conditions may reduce effectiveness. Pulling blackout curtains, increasing humidity, tank-mixing with spray adjuvants and increasing the application volume are all ways to preserve moisture and prolong the life of nematodes on plants.

Mixing nematode solutions is an important and often overlooked step in the application process. Nematodes will quickly settle out of a spray solutions which causes uneven nematode applications and ultimately, uneven pest control. Becker Underwood recommends using a [bubbler](#) device, which is inexpensive to build and simple to use.

Application equipment commonly used for conventional insecticides may be used to apply nematodes. Typically, a higher level of pest control can be achieved when regular, weekly applications are made.

Beginning Your Program

As you begin to incorporate beneficial nematodes into your pest control program, turn to Becker Underwood. We offer resources and extensive customer support to help you achieve the best results with products continually used and proven by professionals just like you.

For more information about beneficial nematodes storage and applications, visit our [website](#) or contact Becker Underwood at 800-232-5907.