Pest Alert:
Sugarbeet Cyst Nematode

Clariva™ pn

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The number of sugarbeet fields infested with sugarbeet cyst nematodes (BCN) has grown drastically over the last 30 years, and the pest has become increasingly difficult for growers to manage. These microscopic parasitic roundworms are capable of causing extensive damage including reduced stand, stunted beet growth and decreased root efficiency, potentially causing yield losses up to 80 percent.

Clariva™ pn seed treatment nematicide serves as the first line of defense against BCN through its unique mode of action, maximizing yield and profit potential.

Sugarbeet Cyst Nematode

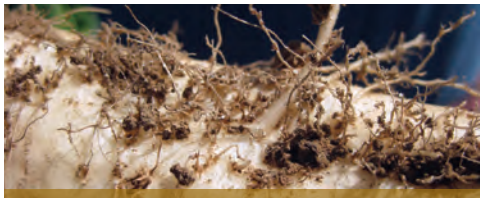
BCN is a microscopic roundworm that overwinters in soil and infects sugarbeets at the root tips in wet conditions during the spring and continues to thrive in dry summers. According to the 2014 Michigan Sugarbeet Reach Sugarbeet Cyst Nematode Management Guide[1], BCN reproduces between 70 to 80 degrees Fahrenheit, and is capable of producing two to three cycles in a season. In ideal conditions, nematodes will continue to reproduce until the food supply is exhausted.

Due to the parasite's unique reproductive cycle, BCN eggs can remain dormant in the soil for many years making the infestation a serious threat for seasons to come. BCN survival and decline rates are influenced by host suitability, geographic location, length of a growing season, planting date, weed hosts and soil temperature.

Visible Symptoms

Above ground symptoms are rare, however growers may see indications of BCN during the growing season. Visible symptoms caused by BCN include:

- Stunted plant growth
- Wilted plants
- Yellow leaves
- Hairy or "bearded" sugarbeet roots



Sugarbeet infected with BCN

Healthy sugarbeet

[1] See the Michigan Sugarbeet Reach Sugarbeet Cyst Nematode Management Guide at http://www.michigansugar.com/wp-content/uploads/2014/02/2014-Sugarbeet-Cyst-Nematode-Management-Guide.pdf, for more information about sugarbeet cyst nematodes.

BCN can lead to:

- Reduced sugar quality and yield
- Decreased root efficiency
- Reduced stand establishment
- Damaged beets, which enable soilborne pathogens such as *Pythium, Rhizoctonia,* and *Phytophthora* to infect the crop

Sampling for BCN

Michigan State University Extension Sugarbeet Advancement recommends that every sugarbeet field be soil and root tested for the presence of BCN during the growing season. Sugarbeet experts recommended that 25 soil cores be taken per tested field. Samples should be taken before any treatment decision is required and when soils are not excessively wet, dry or frozen.

Soil samples should be taken from the root zone by removing the top two inches of soil and then sampling to plow depth or up to 12 inches. The samples should be placed in durable, moisture-resistant sample bags, and not left in direct sunlight. They should be sent to a testing facility as soon as possible and should be labeled with the following information: location, soil type, cropping history, current and anticipated crop, last nematicides used, etc.

Management

Although it is impossible to eliminate BCN from a field once it has become established, there are many management tools recommended to greatly reduce and control the population. Syngenta agronomists offer the following recommendations to minimize BCN populations in fields:

- Test soils for BCN
- Select a seed variety with tolerance to BCN
- Apply a seed treatment nematicide
- Rotate fields with a non-host crop like wheat, corn or alfalfa

Clariva pn Performance Advantages

- Offers season-long activity against BCN
- Complements BCN-tolerant varieties and helps manage resistance by adding another mode of action
- Optimizes root health to deliver better emergence, stand, stress tolerance and overall performance
- Offers triple protection against seedling diseases, insects and BCN when applied with CruiserMaxx® Sugarbeets insecticide/fungicide combination of separately registered products

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