

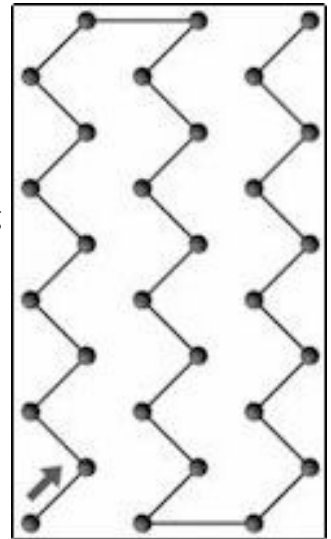
MICHIGAN SUGARBEET REACH

Research & Education Advisory Council

Michigan Sugar Company Sugarbeet Cyst Nematode Analysis Program, 2013

This protocol provides some general guidelines and advice on method, frequency and timing of sampling soil for sugarbeet cyst nematode. In 2012, we had over 200 samples submitted. Because sampling is necessary for sugarbeet cyst nematode identification, Michigan Sugar Company will pay the analysis costs. To get the analysis back faster, **YOU MUST** include root hairs with each sample.

- **Field Sampling:** In order to take a representative and random sample from a field in a practical manner, the “Z” – pattern is recommended to be used across the field (see image). **DO NOT** sample only from areas that show above ground symptoms, be diverse when sampling.
- **Sampler Type:** The best tool for taking samples is to use a soil corer (see photo), however a small trowel or similar tool can be used. The ideal sampling depth is 6 to 8 inches.
- **Timing:** Best time to take samples would be during the sugarbeet growing season – **July through August**. Sampling taken during this time would provide better field diagnostic of cyst species, thus not receiving a lot of false positives when samples are taken in the fall prior to sugarbeet planting.
- **Number of Cores & Quantity of Soil:** There are two sampling methods when sugarbeets are present. 1) If symptoms are present, collect soil and roots from 10 spots in the field especially in the margins of the diseased areas. 2) If no symptoms are observed, collect soil and roots from 20 spots at random. On the submittal form mark if symptoms or no symptoms were present. 4 cups of soil is adequate for analysis.
- **Soil Preparation:** The collected soil should be thoroughly but gently mixed or damage to cyst can occur! Around pint to quart of soil should be extracted and placed in a labeled polythene bag. **YOU MUST** include root hairs with the sample.
- **Storage and Packaging:** Where samples cannot be sent immediately they should be stored temporarily in cool (<50° F), dry conditions or a hatch of larvae is likely and nematode population cannot be ascertained precisely. Samples should be sealed in strong polythene bags. The bags should be securely sealed and must be labeled clearly with the following information: grower name, address, phone number, field number/field ID, and make sure to write “MSC” on each sample bag. **DO NOT** place submittal form inside the Ziploc bag.



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- Sending Sample to Lab: Sugarbeet cyst nematodes are relatively fragile and can be destroyed by rough handling. Posting is fine provided that some protective packaging is used such as a cardboard box or bubble wrap. To get an accurate test result the sample should arrive at the lab as soon as possible and therefore a courier service is recommended. For free shipping and analysis, drop off sample(s) to Michigan Sugar Company Agricultural offices (e.g. Sebewaing, Caro, Croswell, and Bay City), or you can send them yourself to the below address, but there will be no postage reimbursement for this option.

Send to: Diagnostic Service – Michigan State University
101 Center for Integrated Plant Systems
East Lansing, MI 48824-1311

REACH

Jim Stewart, MSC Director of Research, 989-225-6720
Steve Poindexter, MSU Senior Extension Educator, 989-789-5848
Greg Clark, MSC Agronomist, 989-891-6785
Lee Hubbell, MSC Research Agronomist, 989-225-6708

SUGARBEET CYST NEMATODE SURVEY, 2013
Submittal Form

GROWER INFORMATION

Name _____
 Member ID #: _____
 Street _____
 City/Town _____, MI
 Zip _____ Telephone _____
 E-mail _____
 County _____ TWP, Sect. No _____
 Field ID # _____ No. acres _____
 Who collected the sample: _____

CROPPING INFORMATION

2013 crop Sugarbeet
 2012 crop _____
 2011 crop _____
 Year of last beet crop _____
 Yield of last beet crop _____ t/A
 Number of sugarbeet crops last
 20 yrs. _____
 Number of oilseed radish crops last
 20 yrs. _____

SAMPLING INFORMATION (*July 1–August 30... Samples Only*)

Symptoms present YES _____ (symptoms present) NO _____ (random sample)
 Type(s) of symptoms: Poor Stand _____ Stunting _____ Wilting _____ Yellowing _____
 Distribution of symptoms: Spotty _____ Random _____ Uniform _____
 Cyst females present on roots: YES _____ NO _____
 Soil type: Sand _____ Sand-loam _____ Loam _____ Loam-clay _____ Clay _____

Send Results To:
Greg Clark, Michigan Sugar Company
2600 S Euclid Ave, Bay City, MI 48706
Greg.Clark@michigansugar.com
Fax: 989-686-3204

SAMPLE RESULTS

MSU Sample no. _____ Date Received _____

Diagnosis and Recommendations:

Nematode Diagnostician _____

Nematodes	Soil ¹	Roots ²	Risk ³
Cyst ⁴	Cysts		
SBCN	Eggs	J2s	
SCN	J2s	Males	
Other	Total		
Lesion			
Root-knot			
Lance			
Pin			

¹ Number per 100 cm³ soil

² Number per 1.0 gram root tissue (if provided)

³ Risk Ratings: 0 = none; 1 = low; 2 = moderate; 3 = high

⁴ Not identified to species or identified using bioassay, morphometrics or PCR