Fee Schedule for Nematode Assays
March. 13, 2018
Fee Schedule for Nematode Assays

<table>
<thead>
<tr>
<th>Service Description</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Parasitic Nematode Identification (Ag Soil)</td>
<td>$58.00</td>
</tr>
<tr>
<td>Plant Parasitic Nematode Identification (Compost)</td>
<td>$68.00</td>
</tr>
<tr>
<td>Cyst Nematode Egg Count (Ag Soil)</td>
<td>$28.00</td>
</tr>
<tr>
<td>Cyst Nematode Egg Count (Compost)</td>
<td>$38.00</td>
</tr>
<tr>
<td>Root Tissue Exam (Root Knot Confirmation Only)</td>
<td>$20.00</td>
</tr>
</tbody>
</table>

Advantages

- Competitive Rates
- Approximately 3-5 working-day turnaround (7-10 business days for live plant parasitic nematode)
  Special rushes can normally be accommodated, please inquire about our rush surcharges
- Online Reporting
- Latest Equipment & Technique
- Meets USDA/APHIS 526 Requirement for Interstate Movement of Live Pests
- Meets State of Nebraska Plant Protection Regulations
- Consulting available

Visit our website for a complete listing of our fee schedule and online reporting options at www.midwestlabs.com.
Cyst Nematode Egg Counts – Soil Sampling

Procedures for collecting samples:

1. Collect soil cores in a zig-zag pattern across the entire area to be sampled (Typically no more than 18-20 acres per sample).
2. Collect soil cores from areas of similar soil texture and cropping history. If different crops or markedly different soil textures occur in the same field, sample them separately. Sample “hot spots” (areas with possible high populations) separately from the other area.
3. Collect to a depth of 6 to 8 inches around the plant root system (if present).
4. Bulk the cores in a container and mix thoroughly.
5. Place approximately 1 pint of mixed soil in a Midwest Labs soil bag and label the outside of the bag.
6. Store the sample away from sunlight in a cool area until it is shipped to the laboratory.

Collect soil cores from an 18-20 acre area. Subdivide larger areas and sample separately before bulking the soil into a single sample.

How to Deal with Hot Spots

Collect soil samples from the area between the damaged and the healthy plants. If samples are collected from the center of the affected, cyst numbers may appear much lower than their actual number.

The number of cyst nematodes can be greatly reduced through proper management, but it is impossible to eliminate the parasite from a field once it is established. Cyst egg count analysis is recommended prior to planting a host crop to monitor population densities.
Additional Soil Sampling Info

Sample Sugar Beet Cyst Nematodes (H. schachtii) injured fields once a year regardless of crop choice or insecticide/nematicide use.

Sampling when crops are present will aid in identifying possible hot spots. Samples can be taken anytime, however populations will be highest when plants are almost mature to shortly after harvest. Sampling near harvest will lend you plenty of time for variety selection or choosing alternative crops for the next year.

Subdivide large fields into sections of 20 acres or less and make a single composite sample per section to be submitted for analysis.

If the crop row is identifiable, place the soil probe within 2 inches of the row when collecting the sample. Placement of the soil probe is not important when sampling cultivated fields, or fields where soybeans were drilled.

The quality and condition of the sample determines the reliability of the results.
Sample Shipment (Interstate)

Submittal forms are available online or by request.

Cyst nematode egg counts can be performed from the same sample as the basic soil analysis if needed. Please use a soil analysis sub-form

Autosubmit is available. Visit
https://mylab.midwestlabs.com/wpPortal/soilOrder/20459?rOt0DiAd6n6NStAxB4Q4jm3ik3wLo7
and select the cyst nematode egg count check box as well as the basic soil test selection.

Print this page and include it with your samples
Sample Shipment (International)

Prior to shipping, contact Midwest Laboratories Client Services at 402-334-7770 for shipping guidelines and proper shipping labels.

Sample Results

Cyst nematode results can be viewed on our website at our MyLab portal
https://mylab.midwestlabs.com/documents/reports

1. Click on “View Report” under the header “REPORTS AND DOCUMENTS.”
2. Select your “Account”
3. There are two ways to find/filter your reports, by date range or by Report #/Sample ID.

For additional information, or to obtain a copy of the Midwest Laboratories USDA/APHIS Permit, please contact:

George Nelsen, Nematology Laboratory
Phone: (402) 829-9868
gnelsen@midwestlabs.com

The USDA/APHIS permit can also be found by going to:
http://www.midwestlabs.com/resource/usda-aphis-nematodes-permit/
INTERPRETATION OF RESULTS
SOYBEAN CYST NEMATODE

CROP OPTION GROUPS
Group 1: Cyst Susceptible Soybean
Group 2: Resistant Soybean (Peking) (P1 88788)
Group 3: *Avicta® Complete Bean (or similar)
    *Clariva® Complete Bean (or similar)
    *Poncho/Votivo® (or similar)
Group 4: Non-Soybean Crop

RESULT LEVEL CATEGORY (Eggs/100cc)
C-1 Results: <MDL (Minimum Detection Level)
C-2 Results: MDL-500
C-3 Results: 500-1000
C-4 Results: 1000-3000
C-5 Results: 3000-6000
C-6 Results: 6000-12000
C-7 Results: >12000

POSSIBLE CROP ROTATION OPTIONS

<table>
<thead>
<tr>
<th>Category</th>
<th>Group(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-1</td>
<td>Group 1</td>
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<tr>
<td></td>
<td>Group 2</td>
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<tr>
<td></td>
<td>Group 3</td>
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<td>Group 4</td>
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<tr>
<td>C-2, C-3, C-4, C-5</td>
<td>Group 2</td>
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<td>Group 3</td>
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<td>Group 4</td>
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<td>C-6</td>
<td>Group 3</td>
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<td></td>
<td>Group 4</td>
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<tr>
<td>C-7</td>
<td>Group 4</td>
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*Brands are listed only as available products for possible reduction of cyst nematode populations.

IMPORTANT: Continual monitoring of cyst populations with sample analysis is recommended to determine success of rotation choices.
INTERPRETATION OF RESULTS
SUGAR BEET CYST NEMATODE

CROP OPTION GROUPS
Group 1: Cyst Susceptible Sugar Beets
Group 2: Resistant Cultivars
Group 3: *Clariva® pn (or similar)
Group 4: Non-sugar beet crop

RESULT LEVEL CATEGORY (Eggs/100cc)
C-1 Results: <MDL (Minimum Detection Level)
C-2 Results: MDL-300
C-3 Results: >300

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<td>C-3</td>
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OTHER ROTATION POSSIBILITIES
Trap Crops: A trap crop attracts nematodes but often does not allow successful development. Two common examples are certain varieties of oil seed radish and white mustard.