

Sugarbeet Cyst Nematode Survey in the Red River Basin, 2001

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Population response of soybean cyst nematode to long-term corn-soybean cropping sequences in Minnesota.

Agronomy Journal. 93:619-626. (Porter, Chen et al., 2001)

Soybean cyst nematode population development and associated soybean yields of resistant and susceptible cultivars in Minnesota.

Plant Disease. 87:760-766. (Chen, Porter et al., 2001)

Crop sequence effects on soybean cyst nematode and soybean and corn yields.

Crop Science. 41:1843-1849. (Chen, Porter et al., 2001)

Evaluation of trap crops for managing *Heterodera glycines*.

Journal of Nematology. (In press). (Chen, Porter et al., 2001)

Sugarbeet Cyst Nematode
Survey
in the Red River Basin, 2001

Funded by the

Northern Canola Growers Association
Bismarck, ND

Objective:

To survey sugarbeet and canola
land in the Red River Basin
for the presence of the
sugarbeet cyst nematode.

Sugarbeet cyst nematode:

Heterodera schachtii

Hosts include sugarbeet, canola, etc.

Soybean cyst nematode:

Heterodera glycines

Hosts include soybean.

Cyst nematode hosts cause the nematode population to increase.

Sugarbeet cyst nematodes can reduce sugarbeet and canola yields.

Soybean cyst nematodes don't influence sugarbeet and canola yields.

Our roles:

Paul -

Site selection

Obtain soil samples

Senyu -

Analyze soil samples

Conduct bioassays

Jointly -

Interpret & report results

Site selection:

Dave Gehrtz

Interstate Seed Co.

Al Cattanach

Am. Crystal Sugars Co.

Tom Knudsen

Minn-Dak Farmers Coop.

Karen Andol

U of M @ Roseau

Site selection form & “Data Sheet”:

The Survey is targeting supposed 'hot spots:' field entry points, sugarbeet soil tare dump sites, etc. Our goal is to see if the cyst nematode can be found on land planted primarily to canola or sugarbeet

Submission of the "Data Sheet" will be our signal that we have the knowledge & consent of the farmer / cooperator.

“Data Sheet”:

- Person submitting form
- Farmer name and address
- Field location
- Field history
 - + Crops grown the past 6 years
 - + Whether sugarbeet, canola or soybean had ever been grown on the field.

Persons submitting “Data Sheets”:

Paul Beech
Jeffery Loeks
John Dummer
Terry Lunde
Jim Coffman
Bruce Tiegs
Jon Warner
Donna Aafedt
Greg Richards
John Prigge
Dan Bernhardson
Cory Kritzberger
Neil Boeddeker
John Halland
Chad Wardner
Roger Sellnow

Kirk Johnson
Arron Nelson
Kelly Sharpe
Curt Meyer
Tom Zidon
Tyler Grove
Marc Connelly
Jeff Sveen
Maureen O’Leary
Cody Kritzberger
Tim Leshuk
Nick Arends
Tom Hermann
Jack Call
Tim Kenyon
Karen Andol

Soil sample locations:

<u>Minnesota</u>	<u>#</u>	<u>N.Dakota</u>	<u>#</u>
<i>Am. Crystal Sugar growers &/or canola growers:</i>			
Kittson	17	Pembina	10
Marshall	11	Grand Forks	10
Polk	10	Walsh	9
Norman	5	Traill	3
Clay	2	Cass	3
Pennington	1		
Red Lake	3		
<i>Minn-Dak Coop. growers:</i>			
Wilkin	9	Richland	6
Traverse	2		
Total	60	Total	41

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Soil sample locations:

Typically, at each location 3 separate soil sample composites were analyzed.

Each soil sample composite was from approximately 20 cores taken to a depth of 8 inches from a radius of ~ 25ft.

Soil samples collected in May, June & July.

Soil sample locations & land-use history:

Total locations 101

Piling stations: 22

Crop land: 79

sugarbeet 63

canola 31

sugarbeet & canola 17

former tare sites 37

soybean 49



Piling station locations:

Ada

Ada West

Ardoch

Argyle

Bathgate

Crookston

Eldred

Foxhome

Hawes

Hitterdal

Kennedy

Lyngass

McArthur

Midway

O'Meara

Oslo

Reynolds

St. Thomas

Stephen

Tyler

Voss

Warren

Results:

Over 300 soil samples were analyzed
from 101 locations:

No sugarbeet cyst nematodes were found.

No soybean cyst nematodes were found.

A nematode from the cyst-forming genus *Cactodera*
was found at one location.

Sugarbeet was determined to be a host.



Results:

We were surprised.

We had expected to find more cyst nematodes.

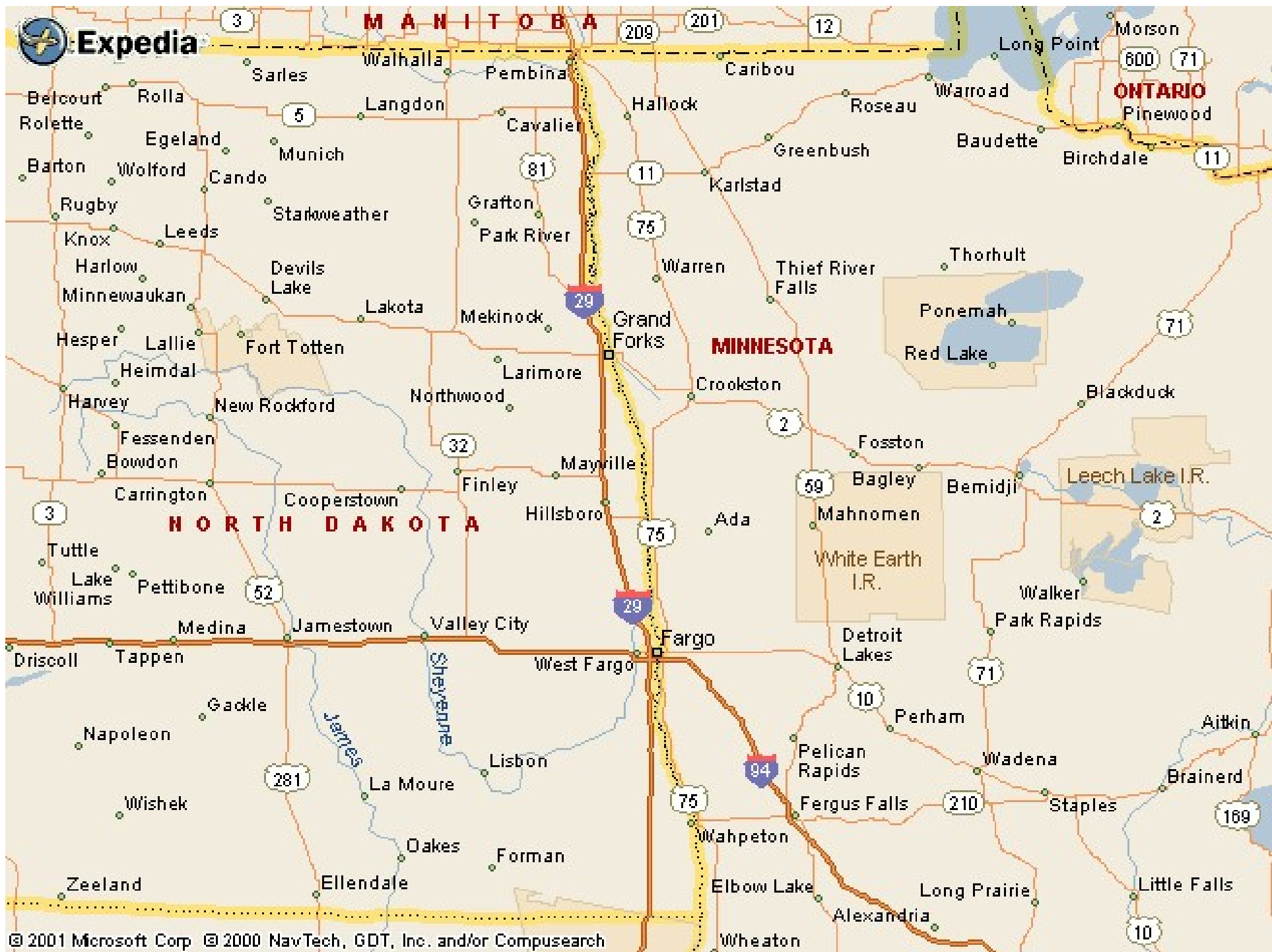
I doubt we missed them – they weren't there.

Implications for Crop Rotation:

– Sugarbeet – SmGrain – Canola – SmGrain –

You really don't want nematodes.

[illegible]



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