#### Wisconsin Department of Agriculture, Trade and Consumer Protection

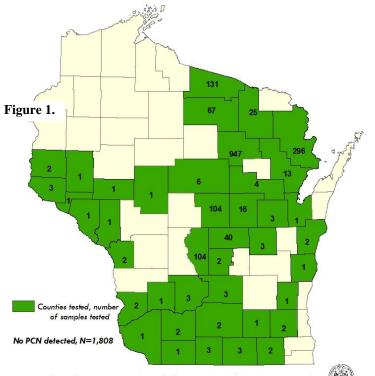
# Wisconsin Pest Survey Report

### POTATO CYST NEMATODE SURVEY

Potato cyst nematodes have never been found in Wisconsin. DATCP conducted extensive surveys in 2007 and 2008. Since 2009 PCN testing has been integrated into to University of Wisconsin Seed Potato Certification Program. Wisconsin's potato industry relies on the certification of potato fields to demonstrate to trading partners that Wisconsin is free from PCN.

During the winter of 2006, USDA APHIS initiated an exhaustive nation-wide survey of potato fields for potato cyst nematodes (PCN), after Pale potato cyst nematode was detected in Idaho, and Golden nematode in Quebec, Canada earlier that year. These two potato pests, the pale potato cyst nematode (*Globodera pallida*) and the Golden nematode (*Globodera rostochiensis*) are economically significant quarantine pests. They are microscopically small, worm-like creatures, whose females form durable pinhead-sized cysts that are filled with eggs (Figure2). They can survive in the soil for decades and still infect potatoes. These potato cyst nematodes feed on the roots of potatoes, tomatoes and eggplants. Widespread in Europe and South America, PCN were only known to occur in few locations in North America: Pale potato cyst nematode in Newfoundland, CD, and Golden nematode in parts of British Columbia and Newfoundland, CD, and New York State.

### Potato Cyst Nematode Survey 2007



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In Wisconsin the 2007 survey collected 1,808 samples from 8625 acres of seed potato fields and a small subsample from 66,000 acres of potatoes grown for consumption in a total of 42 counties (Figure 1). In 2008, 610 soil samples were collected from 3050 acres in five counties (Figure 3), focusing on seed potato fields to facilitate export to Canada. No suspect nematodes were detected in either year.

## Soil Collection and Cyst Detection Methods

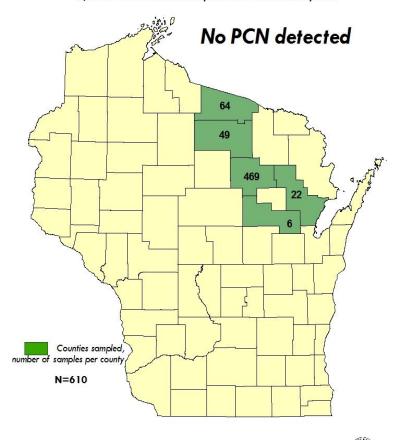
DATCP's Fruit & Vegetable Inspectors pulled piler dirt from warehouses in the spring before seed potatoes were shipped and planted. Piler dirt consists of soil that falls off the potatoes as they travel across conveyor belts for loading. Inspectors

collected one five pound bag of piler dirt for each five acres of seed potato field. During the fall harvest, fields growing seed potatoes for export were sampled at a rate of one pound of soil per acre.

The samples were trucked to DATCP's Plant Industry Laboratory in Madison, where the soil was washed through screens to separate out nematode cysts. Each sample was then examined for cysts under a dissecting microscope. Cyst-like objects were transferred to vials and examined by a trained nematologist before a sample was confirmed negative. For final identification and confirmation, USDA required suspect cysts to be examined by a National Identifier.

## 2008 Potato Cyst Nematode Survey

3,050 acres of seed potato fields sampled



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Figure 3.



Figure 2. Tobacco cyst nematode, a PCN look-alike from Virginia.

#### Conclusion

The 2007 and 2008 survey data showed that Wisconsin potato growing areas are free from potato cyst nematodes.

DATCP staff have been collecting soil samples from fields and potato storage facilities in Wisconsin for golden cyst nematode since 1982. The surveys varied in scope and were funded by the USDA's Cooperative Agricultural Pest Survey (CAPS) Program. A total of 6336 samples have been screened for PCN over the course of 27 years (**Figure 4**). No Golden cyst nematode had ever been found in Wisconsin.

The 2007 and 2008 surveys of unusually intensive scope that involved collecting, shipping and screening over 4 tons of piler dirt and soil in 2007 and 1.3 tons in 2008. It was made possible thanks to the close cooperation and determined effort by Wisconsin seed growers,

DATCP's field staff at the Fruit & Vegetable Inspection Service in Antigo, and the staff at Madison's Plant Industry Laboratory.

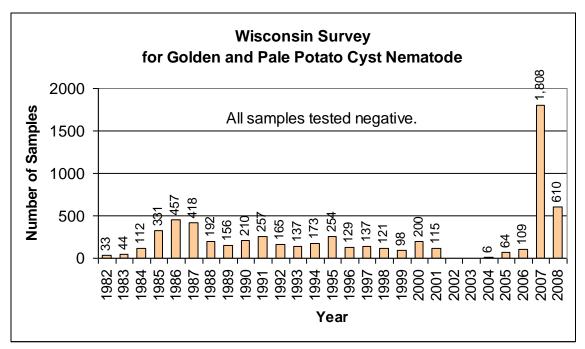


Figure 4. Number of soils and piler dirt samples screened each year.

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Author: Anette Phibbs, DATCP, Plant Industry Laboratory, Email: anette.phibbs@wisconsin.gov