



Idaho Potato Cyst Nematode Cooperative Program



Adult male potato cyst nematode



Adult female potato cyst nematode

Background

Potato cyst nematode, *Globodera pallida*, has been detected in Idaho. This nematode is a quarantine pest and presents a serious threat to domestic and international commerce in potatoes and nursery stock.

Description

Potato cyst nematode (PCN) is a soil-borne organism and does NOT infect potato tubers, but rather the feeder roots, where the females attach, feed and become sedentary. The primary means of spread of PCN is by transport of cysts in soil. This may occur with movement of soil on farming equipment, infested soil adhering to seed potatoes, and tare dirt. Nematodes reproduce sexually. Males are attracted to females by a pheromone sex attractant and may mate several times. Females form cysts containing 200-600 eggs

which can remain dormant for up to 30 years.

Agricultural Threat

Potatoes and tomatoes are the principal economically significant crops attacked by PCN. At high population levels, PCN will greatly reduce potato yields. Patches of poor growth occur generally in the crop, sometimes with yellowing, wilting or death of the foliage. Even with minor symptoms on the foliage, tuber size can be reduced.

Detection

It is essential that public and private entities work together to prevent the spread of PCN and determine the ultimate extent of the current infestation. A statewide survey is being conducted to ensure that potato production areas in Idaho can be demonstrated PCN free.

Control Measures

USDA-APHIS and ISDA will be implementing a regulatory program designed to prevent the pest's spread to other fields. The program will define restrictions on the movement of plants and soil, required sanitation procedures for equipment and limitations on planting.

Best Management Practices to Prevent Spread of Soil-Borne Organisms Including Potato Cyst Nematode

- Prevent soil movement from land closely associated with infested fields.
- Do not spread tare dirt or debris from potato processing operations, potato storage or potato trans-loading operations on farm land or place it in an area where it can be spread to farm lands

other than the field(s) from which it came.

- Do not plant potatoes in back to back crop seasons. Do use longer crop rotations using non-host crops. Growing non-host crops will prevent PCN increases. Non-host crops include small grains, corn, sugar beets, beans, and alfalfa (anything other than potatoes, tomatoes and eggplant.)
- Other solanaceous plants such as nightshade could also be hosts for PCN and should be controlled.
- Provide equipment needed to conduct proper cleaning and disinfection procedures.
- Inform employees of the seriousness of PCN and be sure they follow all precautions.
- Segregate potatoes in storage— tubers from each field should have separate storage.
- In areas near PCN infested or associated fields, do not re-use bags, containers, etc. for potato transport, and prevent entry of vehicles onto your farmland without proper sanitation.
- Do not assume that non-regulated fields are pathogen free.
- Closely control vehicle and equipment access to your farmland by

temporary workers, repairmen, custom applicators, or utility companies.

- Areas used to pressure wash equipment should drain into an area that will not present a risk of nematode spread.

Cleaning Procedures to prevent PCN spread

Because PCN is a soil borne organism, every precaution should be taken to prevent movement of soil containing PCN.

All farming equipment used on infested land or land suspected of being infested must be pressure-washed to remove all soil. Any equipment with inaccessible

areas which cannot be guaranteed free from soil should be treated under tarpaulin or tent using steam heat at 140 F. for one hour.

Anyone entering a property where potato cyst nematode is known to occur or suspected to exist should wear disposable boot covers or clean and disinfect footwear by thorough brushing and scrubbing with a solution of one part 5.25% sodium hypochlorite (household bleach) in 10 parts of water. Bleach disinfectant kills all active stages of the nematode, but not the cysts. Other disinfectants may be effective, but have not been tested. No information is available on their effectiveness at this time.

