



Best Management Practices for Preventing Spread of Potato Cyst Nematodes

The detection of potato cyst nematodes in North America has increased concern regarding spread of these serious pests of potato, related solanaceous plants and other soil bearing crops. The Golden Nematode (*Globodera rostochiensis*; GN) and the Pale Cyst Nematode (*Globodera pallida*; PCN) are both potato cyst nematode species of quarantine significance that are referred to collectively as potato cyst nematodes. In the United States, GN is known to occur in portions of eight counties in New York and PCN is confined to an area with an 8.5-mile radius in southeast Idaho.

The U.S. Department of Agriculture's Animal and Plant Health Inspection Service, State plant regulatory officials, and the potato industry are working together to eradicate GN and PCN and to maintain domestic and international markets for potatoes. Together, we regulate infested and associated fields (cultivated plots that may have been exposed to nematode-infested soil transferred through shared farming equipment and other regulated articles) and restrict movement of potatoes and other regulated items from quarantined areas to prevent pest spread to other potato-producing areas in the United States. In the United States, GN and PCN have not been found outside of the first states where they were first found.

Potato cyst nematodes are soil-borne organisms and the primary means of spread is by cysts being transported in soil on farming equipment, soil adhering to seed potatoes, and soil contaminated waste from potato grading operations. Once a farm is known to have a GN or PCN contamination, every precaution must be taken to prevent soil movement.

Strict sanitation is critical to prevent the spread of GN and PCN and other destructive organisms. All farming equipment used on infested land must be pressure-washed to remove soil. For equipment with difficult to reach areas, such as harvesters, a steam under tarpaulin treatment or fumigation can be used to ensure equipment is nematode free. Any equipment with inaccessible areas which cannot be guaranteed free from soil should be treated using a steam heat treatment. Pressure washing and steam treatments are coordinated through USDA and its cooperators in Idaho and New York.

The following are some of the Best Management Practices to prevent the spread of soil-borne organisms including potato cyst nematodes:

- All farm machinery, trucks, construction and other equipment are required to be clean when going from field to field. Do not allow any of these pieces of equipment in your fields unless they have been thoroughly cleaned. This is especially important when renting land, as you may not have records of previous crop history.
- Check on the condition of any trucks or other vehicles entering a farming operation. For example, a grower should check to see where equipment has previously been and what sanitation treatments have been undertaken. Seed potato shipments are a particular concern for possible spread of GN and PCN where a truck may make more than one stop.

- Do not spread waste from potato grading, processing or storage operations on farmland or place it in an area where it can be spread to farmlands.
- Leave hedgerows, sod barriers or sod strips between fields and along highways.
- Prevent infestations by buying only certified seed that comes from fields that have been tested and found to be GN and PCN free.
- Grow non-host crops in rotations with potatoes and never plant potato cyst nematode susceptible crops (potato, tomato, eggplant, pepper) back-to-back. Crops that are non-hosts of GN and PCN include corn, small grains and alfalfa.
- Plant a potato cyst nematode resistant variety, (if available), in your non-infested fields at least once every 4 years.
- Plant cover crops as soon as possible when land is not in use because GN and PCN cysts can be spread by wind and water erosion.
- Inform people in your operation of the seriousness of GN and PCN and potato diseases and be sure they follow all precautions. Provide equipment needed to conduct proper cleaning and disinfection procedures.
- Segregate potatoes in storage—each field should have a definite separation.
- Do not re-use previously used bags, containers, etc. for potato transport, and be sure all commercial transport vehicles are free of soil.
- Do not permit temporary help, custom applicators, or utility companies to bring their vehicles onto your farmland without proper sanitation and do not allow them to bring any bags, etc. with them to the field.
- Do not use common headlands, farm roads and public roads as turning areas.
- Prohibit non-authorized entry onto farmlands using “No Trespassing” signs.
- Do not assume that non-regulated fields are free of the pathogen.

For additional information on GN and PCN refer to:

<https://www.aphis.usda.gov/aphis/ourfocus/planthealth/plant-pest-and-disease-programs/pests-and-diseases/golden-nematode/nematodes>

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