

Potato Cyst Nematode

(*Globodera* species)

Potato cyst nematodes are microscopic round worms that feed on the roots of potato, tomato, aubergine and other plants from the family of the Solanaceae (night shade plants). It is a serious pest to potatoes that can cause complete crop failure if not controlled. It has the potential to cause significant damage to the Australian potato industry through crop losses and the loss of export markets.

There are two types of potato cyst nematode:

- white or pale potato cyst nematode (*Globodera pallida*) is an exotic plant pest not present in Australia
- yellow or golden potato cyst nematode (*Globodera rostochiensis*) is present in some areas of Victoria

Potato cyst nematodes live and feed on the roots of potato and other hosts causing significant damage to their root systems. Significant damage below the ground can be done before symptoms are even visible above ground.

What to look for?

The symptoms of attack by *Globodera* species are not specific. Symptoms may appear similar to water or nutrient deficiencies or wilt diseases.

Infested potato plants have a reduced root system which is abnormally branched and brownish in colour. Growth is stunted, leaves yellow early or turn a dull colour, flowering is delayed and plants may wilt.

At or after flowering very tiny white, yellow or brown cysts about the size of a pin head (0.5 mm) might be seen on the outside of roots

How does it survive?

PCN are small worms less than 1 mm in size.

Juveniles hatch from cysts in the soil when stimulated by exudates from susceptible host roots. The nematode then invades the plant roots.

Eggs develop in the bodies of mated females. The body of the female protrudes from the surface of the potato roots or tubers. When the female dies her body forms the resistant cyst. Cysts may contain from 200-600 eggs.



Potato cyst nematodes causing a stunted patch of potato plants which are surrounded by a healthy crop

Source © Syngenta 2013

Cysts may detach and lodge in the soil. Hatching may occur immediately or cysts may remain dormant but viable for many years.

Dormancy is commonly 7-10 years but may exceed 20 years.

Laboratory analysis is necessary to find cysts in soil samples or females or cysts on host roots.

How does it spread?

PCN cysts can spread on anything contaminated with infested soil. Examples include seed potatoes, potted nursery stock and packaging, soil, flower bulbs, unwashed root crops for consumption or processing, footwear, livestock, farming equipment and waste from potato grading operations.

PCN has limited natural means of dispersal. Juveniles can move short distances towards roots in the soil. Cysts might be carried by water.

When a PCN infestation is found regulatory controls are imposed on potato growers and all businesses which involve the potential movement of soil.

What can I do?

Growers can put on-farm biosecurity measures in place to reduce the chance of pests and disease getting onto their properties.

These include:

- Restricting visitors to your property and production area without authorisation
- Having designated areas for visitor vehicles and for cleaning vehicles
- Using clear signage
- Using your own farm vehicles, equipment and machinery on your property - avoid sharing across other properties
- Do not use contract machinery if appropriate disinfestation steps have not been taken
- Cleaning and disinfecting equipment and machinery after use
- Planting seed sourced from a known PCN free origin
- Managing self-sown potatoes
- Growing resistant cultivars
- controlling movement of bin and bags
- Rotating paddock production
- Implementing weed management programs
- Don't bring foreign soil onto the property

If you suspect potato cyst nematodes in SA:

Call the Exotic Plant Pest Hotline



*Roots infested with potato cyst nematodes. (Under high magnification)
Source: USDA*

**EXOTIC PLANT PEST HOTLINE
1800 084 881**

Disclaimer: The material in this publication was prepared from the most up-to-date information available at the time of publication. It is intended as a guide only and the publisher accepts no responsibility

Report suspected detections to the Exotic Plant Pest Hotline