

Biosecurity SA – Plant Health

Exotic Plant Pest Hotline: 1800 084 881 (available 24 hours)

Email PIRSA.biosecuritysa@sa.gov.au

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BIOSECURITY SA
PIRSA

Potato cyst nematodes

Globodera pallida and *Globodera rostochiensis*

WHAT IS IT?

Pale potato cyst nematode (*Globodera pallida*) is an exotic plant pest **not present in Australia**

Golden potato cyst nematode (*Globodera rostochiensis*) **is present in some areas of Victoria but is not in South Australia.**

These nematodes are a serious threat to Australia's potato industry.

Potato cyst nematodes (PCN) are soil-borne microscopic worms which feed on roots of potato plants. Root development and tuber yield is reduced and plant growth is stunted.

The biology and symptoms caused by both species are similar.

The occurrence of PCN is related to the presence of a host and not to soil type or soil temperature.

The preferred host of PCN is potato. PCN can infest plants such as tomato, eggplant and some solanaceous weeds.

PCN can survive as cysts in the soil for many years in the absence of host plants.

PCN is subject to stringent quarantine and regulatory procedures wherever it occurs.

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



Crop damage caused by PCN.
Photo courtesy© Syngenta 2013

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.

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 may be necessary to find cysts in soil samples or females or cysts on host roots.



Golden PCN cysts on potato roots
Photo courtesy Bonsak Hammeraas, Bioforsk
Norwegian Institute for Agricultural and Environmental Research,
Bugwood.org

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.

Growers and home gardeners

Check your plants or crops for root damage or cysts. Cysts can be visible with the naked eye.

If potato cyst nematodes became established in Australia it would have an appetite for:

- potatoes
- tomatoes
- aubergines
- roots of solanaceous weeds.

If you suspect potato cyst nematodes in SA:

Call the Exotic Plant Pest Hotline on **1800 084 881**

Take photos not samples to minimise the risk of spreading this pest

Email clear photos with a brief explanation and contact details to

PIRSA.biosecuritysa@sa.gov.au