



Vegetable *-Matters-of-* Facts

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Potato Cyst Nematode (PCN) (*Globodera rostochiensis*)

Potato Cyst Nematode (PCN) – or Golden Cyst Nematode

- Is a serious pest in potatoes world-wide.
- Damages potato roots reducing yield by as much as 90%.
- Attacks some potato varieties and a few related crops such as tomato.
- Complete eradication is difficult but further spread can be managed with resistant varieties, rotation with non-host crops and strict hygiene controls.



PCN-resistant varieties are not affected



Golden & mature PCN cysts

What is PCN

PCN is a species of nematode. Nematodes are tiny worm like organisms usually less than 2mm long which feed on live plant roots in the soil. There are two species of PCN which cause similar symptoms but only one (*Globodera rostochiensis*) has been found in Australia.

Biology

Depending on conditions, nematodes complete their life cycle in 38-48 days when the females transform into cysts containing up to 400 fertilized eggs. Each egg contains a juvenile nematode.

Cysts can survive in the soil for up to 20 years. During this time contact with root exudates of potato or another host plant will cause the cysts to hatch and juvenile nematodes are released.

Nematodes move through the soil locating their host which they invade by puncturing the root cells with their needle-like stylet. After weeks of feeding, the enlarged females rupture through the outer root tissues exposing their bodies for mating.

Mature males also leave their host roots to mate with any receptive females. Once fertilized, the females die, transforming into cysts and so completing the life cycle.

When host plants are lifted from the ground, the cysts can fall off, waiting until new host plants are grown.

POTATO

Prevention Strategies

Can I reduce the risk of getting PCN?

- Use only certified seed potatoes (certified crops are inspected to be PCN free)
- Rotate potato plantings with **non host crops**
- Avoid sharing farm machinery or implements.
- Avoid using second-hand containers that may contain soil contaminated with PCN.
- Avoid spreading soil from grading lines onto potato paddocks.
- Plant **PCN resistant potato varieties**

Examine your crops for patches of poor growth, especially areas in a paddock where weeds have been a problem.

Washing farm equipment

- Before moving equipment between paddocks it must be free of soil.
- Wash machinery with a high-pressure washer and disinfectant (hospital grade).

Useful Websites for more information:

<http://www.nre.vic.gov.au/agvic/ihd/projects/cqp-ma1.htm>

<http://plpnemweb.ucdavis.edu/nemaplex/Taxadata/G053s2.htm>

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Crops of interest _____

For more information please contact your local VegCheque officer.

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Control Strategies

How can I control PCN ?

It has been found that continuously planting PCN resistant varieties such as ATLANTIC for 7 seasons will effectively reduce PCN numbers in the field.

What problems will PCN cause ?

- PCN can seriously reduce tuber yields
- Increase production costs for control
- Will result in trade restrictions

What IF my crop has PCN ?

- PCN is a declared pest and regulatory procedures must be followed
- The affected property and others within a 20km radius are subjected to the same procedures to protect the industry from the spread of PCN.

Potato varieties resistant to PCN

Fresh: Hudson, Maxine, Nicola, Valor (all VH) Agria, Argos, Granola, Hertha, Inova, Maris Piper, Mondial, Nadine, Shine, Symfonia, Wintergem (all H) and Harmony (M)

Crisp

Atlantic, Chipbelle, Dalmore, Simcoe, Wontscab (all H) and Katahdin (L)

French Fry

Riverina Russet (H)

Levels of resistance:

(VH=very high, H=High, M=Moderate, L=Low)

For a full list of suitable varieties contact:

Sherilyn Lauder, DPI Toolangi 0359 629 203



For more information please contact:

- **Gary Darcy – Plant Standards Branch (controls on infested land)**
or
- **Lila Nambiar – Nematology (soil testing and identification)**
DPI Knoxfield 03 9210 9222

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