Potato Cyst Nematode in the UK.

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Background

- PCN originates from South America. It was introduced to Europe along with a shipment of tubers in the 1850's.
- Approx 65% of potato land in England and Wales now infested with PCN In UK, costs estimated at £50 million each year
- Approx 30,000ha treated with nematicide costing nearly £9million

Globodera rostochiensis
The yellow or golden cyst nematode

G. pallida
The pale or white cyst nematode

without nematicide

plus nematicide

Nematicide

- Nematicide is important control mechanism
- Effect of nematicide
  50 eggs/g reduced to 10 eggs 12X multiplication gives120 eggs/g
  With a decline rate of 20% p.a. leaves 50 eggs/g for next crop after 5 years, however 1 egg/g reduced to 0.2 eggs/g 12X multiplication gives 2.4 eggs/g
  With a decline rate of 20% p.a. leaves 0.8 eggs/g for next crop after 5 years
- Application at low population levels most effective

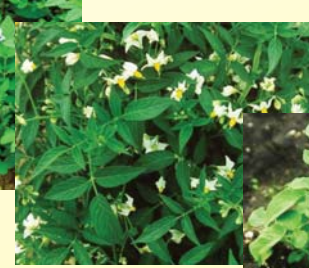
Detection

- Early detection is important
- A hectare of soil can amount to 10,000 tonnes of soil
- 10 million kilos = 20,000,000 samples of 500gms
- To get one cyst in 500gms requires a uniform distribution of 20 *10^6 cysts in 4 hectares = high population level

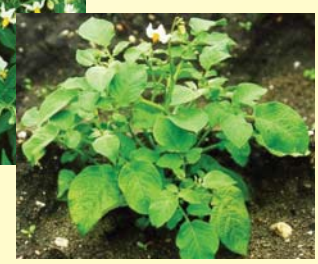
Resistance

- Most effective control is to combine good resistance with nematicide
- New sources of resistance in a no. of wild diploid species from the Commonwealth Potato Collection, including, *S. venturii, S.okadae, S.chacoense, S.spegazzinii* and *S.gourlayi* are being exploited by the Scottish Crop Research Institute

S.spegazzinii



S.chacoense



S.okadae

Summary comments

- PCN is the biggest pest problem in UK
- Nematicides are unreliable and costly to environment
- Early detection important
- Resistance is essential to manage it
- Long time scale for population increase & control