Potential soil pest

Reniform nematodes

Reniform Nematodes (*Rotylenchulus reniformis*) have recently been identified in cotton in sub-tropical Qld for the second time since 2003/04. Reniform nematodes are an established pest in some Australian horticulture crops and have the potential to affect cotton crop productivity

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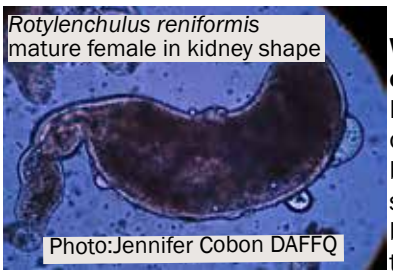
What are nematodes?

Nematodes are microscopic (mostly <1mm) worms, that generally survive in the soil. Many nematode species feed on soil microorganisms and are a part of healthy soil biota. Some nematodes however are plant parasitic, that is they feed on the roots of plants, using retractable, hollow, spear-like mouthparts. Typically they don't cause complete plant death, however they reduce the productivity of the crop.



Rotylenchulus reniformis mature female in kidney shape

Photo:Jennifer Cobon DAFFQ

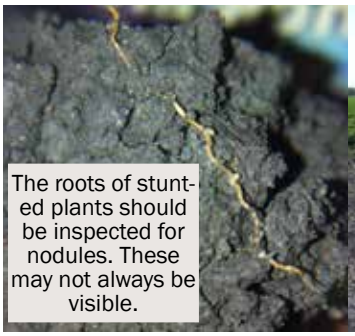
What is the significance of this nematode?

Plant parasitic nematodes occur widely in Australia but are not normally observed in cotton, probably because of the heavy texture of cotton soils in Australia. Unlike other problem nematodes, Reniform nematodes are more suited to the heavy clay soils in Australia which makes them more of a concern.

Reniform nematodes cause economic damage in two ways. The nematode feeding causes damage to the plant resulting in stunting. Overseas experience suggests that yield losses can be severe with very high populations. In addition nematodes can interact with certain fungal pathogens in disease complexes. The damage caused in these complexes is more severe than from either the nematode or the fungus alone. It is not yet known whether this interaction is likely to occur with Australian strains of disease and with Australian varieties.

Management options

In other countries, nematode management in cotton is based on crop rotation, variety selection and nematicides with pre-season sampling for nematode populations. Cotton following peanuts, maize, rice and grain sorghum will generally have lower reniform nematode numbers, whereas soybeans will increase numbers. Cotton monoculture will result in the highest nematode populations in these fields if reniform is present. In severe infestations, nematodes may require up to two years of rotation crops, grown in sequence to lower populations below economic thresholds.
Sampling and testing to quantify the extent of the infestation is currently underway.



The roots of stunted plants should be inspected for nodules. These may not always be visible.

Look for patches of stunted plants

What should growers and consultants do

1. ***COME CLEAN! GO CLEAN!*** Good farm hygiene is key to preventing problems such as nematodes, as well as disease, and pest issues from being transported on to farm.
2. **Monitor crops for patches of stunted plants.** Nematodes cannot be seen with the naked eye in the soil or in plants. Affected roots may have small nodules/knots.
3. **Submit root samples for testing if you are suspicious.** If there are patches of stunted plants, or nodules on roots, send root samples wrapped in slightly moist newspaper, and about 250g of soil (double bagged) overnight to:

Linda Smith
DAFFQ pathologist
Loading Dock Basement 3
Off Joe Baker St
Dutton Park 4102

- Do not refrigerate soil samples, but keep cool
- Please contact Linda Smith 07 3255 4356 before sending to ensure samples are processed immediately on arrival.
- Send samples at the start of the week, so they are not in transit over the weekend.
- Include information about the sample (see page 9 Symptoms guide or page 132 of 2012/13 Cotton Pest Management Guide, plus the bulk density off the soil (if known).

QUEENSLAND GOVERNMENT

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myBMP This best practice information pack is located on the myBMP website www.mybmp.com.au

Best Practice