



CROP & SOIL SAMPLING FOR NEMATODES

JULY 2022

www.novumlifesciences.com.au

☎ (07) 41 325 000

ADDRESS 1/5 SCOTLAND ST
:< BUNDABERG EAST
QLD 4670

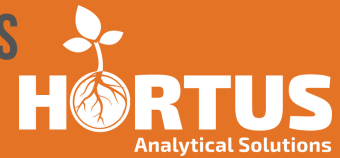
POST SAMPLES TO: LOCKED BAG 3901
BUNDABERG
QLD 4670


NOVUM™
LIFESCIENCES
Naturally Innovative


HORTUS
Analytical Solutions

CROP & SOIL SAMPLING FOR NEMATODES

GUIDE



WHY TEST FOR NEMATODES?

- Nematodes are microscopic worms found in soil. While some are harmless, plant-parasitic nematodes feed on plants, reducing crop growth and yields.
- Nematodes generally attack plant roots, creating symptoms similar to root insufficiency: poor growth, yellowing of leaves, wilting etc.
- Different crops and different varieties of crops may be more susceptible or more resilient to nematodes.
- Different types of nematodes impact different crops however all horticultural crops are at risk of attack by one or more nematodes.
- **Plant-parasitic nematodes can have significant economic impact on your crop through reduced plant health, poor growth and lower yield overall.**

CROP & SOIL SAMPLING FOR NEMATODES

GUIDE

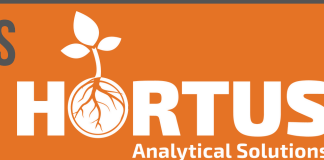


WHEN TO SAMPLE?

- Ideally, soil samples should be taken regularly so nematode populations can be tracked over time to monitor the effectiveness of any pest management programs in place.
- **Before planting and at harvest** are particularly important times to test.
- Nematodes are often found in their highest numbers in the root zone in late summer to mid-winter or towards the end of the growing season.
- Serial samples are best collected at an equivalent stage in the irrigation cycle or when the soil moisture levels are similar.
- See over page for details of sampling for ongoing maintenance versus for troubleshooting or diagnosis of a problem.

CROP & SOIL SAMPLING FOR NEMATODES

GUIDE



SAMPLING FOR A MAINTENANCE PROGRAM

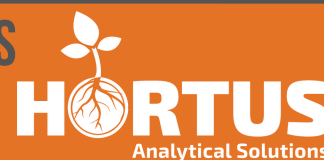
- Sample after cultivation but allow 2 – 4 weeks before you are due to plant to have time to test the samples and arrange your treatment program.
- Re-sample 3–5 weeks after treating nematodes to check the effectiveness of the treatment.
- Further sampling at mid-season may also be appropriate to determine the treatment is effective, depending on the length of your growing season and the extent of the problem.
- Sample again at harvest or at the end of the growing season to determine any likely carry-over into your next crop. This will allow you to plan your treatment program for the following season.

SAMPLING FOR TROUBLESHOOTING

- If you suspect you have a nematode problem (e.g. you are seeing poor growth, yellowing of leaves or wilting of plants), samples may be collected at any point throughout the season.
- It is easier to detect nematodes while the crop is still in the ground as the populations decline in dry, fallow soil.
- Collect samples from near the edge of areas where plants are declining, avoiding plants that have already died as nematode populations are likely to have declined in these areas.
- If possible, also collect samples from healthy areas to test separately. This will provide a comparison point.

CROP & SOIL SAMPLING FOR NEMATODES

GUIDE



HOW TO SAMPLE

- Nematode populations are usually distributed unevenly within a field. To get a representative sample, your sampling methodology should be carefully planned to account for this.
- Very low or patchy populations are difficult to detect.
- Preferably use a **soil tube or auger** to collect sub-samples (cores) and clean between collecting samples from different areas.
- The most abundant nematode populations will be in the root zone with very few present in the first few centimetres of dry, sun-exposed soil so this top layer can be excluded.
- For **shallow rooted crops**, samples should be taken approximately 20 cm deep while for **deep rooted crops** a depth of 20-40 cm is needed.
- If a deep-rooted crop was previously grown in the soil, samples from 20-40 cm deep will be useful prior to planting a shallow rooted crop.
- In **grapevines**, some species reach the highest populations at 30 to 60 cm deep so including some deeper samples is recommended.
- In established crops, sample in the row, near the plant line or inside the drip line.

CREATING A SAMPLE FROM REPRESENTATIVE CORES

- A sample is made up of a number of cores (see below), representative of the area to be tested (see previous page), which are gently mixed together.
- Small cores are better to provide a more representative sample.
- Once the cores are mixed, a **sample of 500g** is taken from the mixed soil.
- For plots up to 100 square metres, **20-30 cores** are required to make a sample.
- For uniform areas up to 1 ha, **at least 50 cores** are required to make a sample.

CHOOSING WHERE TO SAMPLE

- Each plot sampled should be no more than 1 ha – larger fields should be divided into smaller plots using either a grid method or similar
- Various sampling methods may be appropriate – see following page.
- Separate samples should be taken from areas with –
 - Different cropping histories
 - Different soil types
 - Variations in crop health
 - Areas showing low yield
 - Areas indicating poor plant health

CROP & SOIL SAMPLING FOR NEMATODES

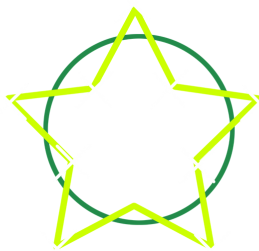
GUIDE



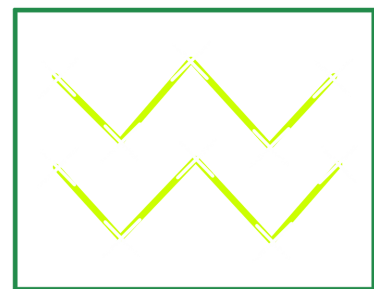
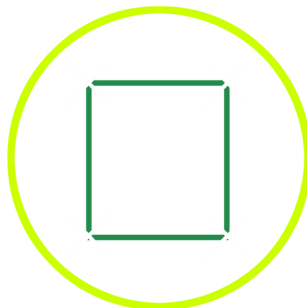
CHOOSING WHERE TO SAMPLE

Sampling Pattern – X marks the location of the core or sub-sample

Square Pattern: for sampling
a tree in an orchard.



Star Pattern: for
sampling from a
damaged area.



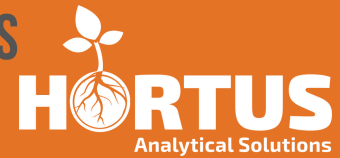
Zig Zag Pattern: for
sampling a field with
uniform soil and growth.

HANDLING AND TRANSPORTING A SAMPLE

- Place your sample into a clean, zip-lock plastic bag (such as a sandwich bag).
- Seal the bag to prevent the sample from drying out. The fresher the sample the better.
- Do not place anything else in the bag with the sample.
- Write the sample details on the outside of the bag.
- Soil does not need to be refrigerated but it must be protected against high temperatures. As such, refrigeration may be required in some instances.
- Collect samples close to the start of the week and despatch as soon as possible after sampling.
- If sample is likely to be exposed to high temperatures during transit, package accordingly – for example place in a foam container or include ice blocks (however do not place ice blocks directly against the soil sample).

CROP & SOIL SAMPLING FOR NEMATODES

GUIDE



SUBMITTING SAMPLES

- Complete your Analysis Request Form online at:

au.agpro.technology

- Post your sample to:

Novum Lifesciences Pty Ltd
Locked Bag 3901
Bundaberg, QLD 4670

- Samples to be received by midday Thursday.
- Results take 1 – 2 weeks.



POST SAMPLES TO: LOCKED BAG 3901
BUNDABERG QLD
4670

