



Sampling procedure for *Phytophthora* and citrus nematode analysis and latest price list for services rendered by the Diagnostic Centre

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The Diagnostic Centre (DC) serves the grower community, the Citrus Improvement Scheme nurseries, and renders support service to CRI researchers and chemical companies in the development of new chemicals. The services include mycological, nematological and entomological analyses. These analyses minimize the unnecessary use of chemicals and determine their effectiveness against target pests.

Sampling procedure for *Phytophthora* and nematode analyses

- The soil in the orchard to be sampled should be moist (not excessively wet or dry).
- Routine sampling: randomly select 20 trees in a block of maximum 1000 trees. Larger orchards should be subdivided. If different rootstocks or soil types are present, separate samples should be taken.
- Take a subsample at each of the 20 selected trees halfway between the trunk and the drip line of the tree.
- Remove any weeds and top 2 cm of soil in the sample area. Use a spade to collect a sample from the top 15 cm of soil. Each subsample should consist of approximately 20 g (one large handful) of soil.
- Combine all subsamples, mix thoroughly and take one composite sample, which should consist of a maximum of 200 g of soil.
- For nematode analysis, 100 g of **feeder roots** (two large handfuls) should be included in the sample. Roots should not be thicker than 1-2 mm.
- **Do not separate the roots from the soil as the roots will dry out.**
- Place the sample in a plastic bag, press out any excess air, seal and store in a cool place (do not freeze) until dispatched to the Diagnostic Centre. Use a cardboard box and store **away from direct sunlight.**
- Each sample bag should be clearly marked with relevant information. The information that **must** be included is: farm name, orchard number, cultivar, rootstock and irrigation type (micro or drip). **Do not use a piece of paper**

placed inside the bag, as the paper can disintegrate during transit.

- Specific sampling in the case of isolated trees showing signs of deterioration: Do not postpone sampling until deterioration has reached an advanced stage, as it can make the diagnosis of the problem difficult. Sample trees that show the first signs of deterioration.
- Soil samples for *Phytophthora* should be taken at the beginning of (and during) the rainy season of the specific production area.
- Root samples for nematode analysis can be taken at any stage during the year.

Analysis costs from 1 April 2021

Citrus nematode	R185/sample
<i>Phytophthora</i>	R153/sample
Package (citrus nematode + <i>Phytophthora</i>)	R251/sample*

* A discount of R61 per sample will be given if more than 15 samples are received.

Address of the Diagnostic Centre:

P.O. Box 28 / 2 Baker Street
Nelspruit
1200

Price list for all services rendered by the Diagnostic Centre is included at the end of this Cutting Edge.



Monsternemingsprosedure vir *Phytophthora* en sitrusaalwurm ontledings asook die nuutste pryslys van dienste wat gelewer word deur die Diagnostiese Sentrum

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Diagnostiese Sentrum CRI-Nelspruit

Die Diagnostiese Sentrum lewer 'n diens aan sitrusprodusente, die Sitrusverbeteringskema kwekerie, en 'n ondersteunende diens aan CRI navorsers en chemiese maatskappye met die ontwikkeling van nuwe chemiese middels. Die dienste sluit mikologiese, nematologiese, en entomologiese ontledings in. Hierdie ontledings verminder die onnodige gebruik van chemiese middels en bepaal die effektiwiteit van hierdie middels teen die teikenorganismes.

Monsternemingsprosedure vir *Phytophthora* en nematode ontledings

- Die boord se grond wat ontleed gaan word moet klam wees (nie uitermatig nat of droog nie).
- Roetine monsterneming: 20 bome in 'n blok van maksimum 1000 bome word lukraak gekies. Groter boorde moet onderverdeel word. Aparte monsters moet geneem word as daar verskillende onderstamme of grondtipes teenwoordig is.
- Neem 'n submonster by elk van die 20 geselekteerde bome, halfpad tussen die stam en die drupperlyn.
- Enige onkruid teenwoordig in die boonste 2 cm van grond moet verwyder word. Gebruik 'n graaf om 'n monster vanuit die boonste 15 cm grond te neem. Elke submonster moet uit ten minste 20 g (een bak hand vol) grond bestaan.
- Kombineer die submonsters, meng deeglik en trek 'n saamgestelde monster wat uit 'n maksimum van 200 g grond bestaan.
- In die geval van 'n aalwurm toets, moet 100 g **voedingswortels** (twee groot handevol) saam met die grondmonster ingestuur word. Wortels moenie dikker as 1-2 mm wees nie. **Moenie die wortels apart van die grond stuur nie aangesien die wortels dan uitdroog.**
- Plaas die monster in 'n plastieksak, druk enige oortollige lug uit, verseël en hou monster in 'n koel plek (moenie vries nie) totdat dit aan die Diagnostiese Sentrum gestuur word. Gebruik 'n kartondoos en stoor dit altyd **weg van direkte sonlig**.
- Merk elke sak met toepaslike informasie. Hierdie informasie **MOET** insluit: plaasnaam,

boordnommer, kultivar, onderstam en besproeiingstipe (mikro of drup). **Moenie 'n stuk papier binne-in die plastieksak sit nie aangesien dit tydens vervoer kan disintegreer.**

- Spesifieke monsterneming in die geval van enkele bome wat simptome van agteruitgang toon: Moenie die neem van monsters uitstel totdat die simptome van agteruitgang al ver gevorderd is nie. Dit kan die diagnose van die probleem bemoeilik. Monster bome waar eerste tekens van agteruitgang sigbaar is. *Phytophthora* monsters moet aan die begin (of gedurende) die reënseisoen van die spesifieke produksie area geneem word.
- Aalwurm wortelmonsters kan enige tyd van die jaar geneem word.

Ontledingskoste vanaf 1 April 2021

Sitrusaalwurm	R185/monster
<i>Phytophthora</i>	R153/monster
Pakket (sitrusaalwurm + <i>Phytophthora</i>)	R251/monster*

* R61 afslag sal gegee word as daar meer as 15 monsters ontvang word.

Adres van die Diagnostiese Sentrum

Posbus 28 / Bakerstraat 2
Nelspruit
1200

Volledige pryslys vir die Diagnostiese Sentrum is aangeheg.



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DIAGNOSTIC CENTRE PRICE LIST DIAGNOSTIESE SENTRUM PRYSLYS

(Prices from / Pryse vanaf 1 April 2021)

	VAT excl	VAT incl
Certified citrus nurseries		
Certified Nursery: Phytophthora analyses	R 63.48	R 73.00
Certified Nursery: Spore Trap (water)	R 98.26	R 113.00
Certified Nursery: Citrus nematode female	R 0.00	R 0.00
Commercial citrus samples		
Commercial: Phytophthora analyses	R 133.04	R 153.00
Commercial: Pythium analyses	R 133.04	R 153.00
Commercial: Spore Trap (water)	R 133.04	R 153.00
Commercial: Citrus nematode female	R 160.87	R 185.00
Commercial: Citrus nematode juvenile	R 160.17	R 185.00
Commercial: Combination (Phytophthora & Nematode)	R 218.26	R 251.00
Discount: Combination (Phyt & Nem) more than 30 samples *	R 165.22	R 190.00
Commercial: Soil dilutions	R 218.26	R 251.00
Commercial: Postharvest fungicide resistance	R 207.83	R 239.00
Commercial: CBS – PCR	R 304.35	R 350.00
Discount: CBS PCR more than 5 samples (sample 1 full price, samples 2-5 discounted)	R 60.87	R 70.00
Commercial: CBS - benzimidazole resistance	R 304.35	R 350.00
Discount: CBS Benzimidazole resistance more than 20 samples (discount only after 20)	R 80.00	R 92.00
Commercial: Citrus greening PCR	R 0.00	R 0.00
Commercial: Fruit & Foliar - Isolation & ID	R 206.09	R 237.00
Commercial: Internal Fruit Quality	R 86.96	R 100.00
Commercial: Mealy bug PCR identification	R 458.26	R 526.00
Discount: Mealybug PCR identification more than one sample	R 81.74	R 94.00
Crops other than Citrus		
Non-Citrus: Phytophthora analyses	R 175.65	R 202.00
Non-Citrus: Nematode (roots)	R 175.65	R 202.00
Non-Citrus: Nematode (soil)	R 175.65	R 202.00
Non-Citrus: Soil dilution	R 218.26	R 251.00
Non-Citrus: Fruit & Foliar - Isolation & ID	R 218.26	R 251.00

*Discount per sample is R61 (VAT incl)