

The Cutting Edge

CITRUS RESEARCH NEWS FROM OUTSPAN CITRUS CENTRE

February 2001

No. 7

CitriCure – a new post-harvest fungicide for citrus

Keith Lesar

Outspan Citrus Centre, Nelspruit

A new formulation of the post-harvest fungicide Deccotine (guazatine) was submitted to OCC during 1999 for evaluation. The product has the same active ingredient as Deccotine, viz. guazatine, and will be known as CitriCure.

The compound was screened against the post-harvest citrus pathogens, *Penicillium digitatum* (green mould) and *Geotrichum candidum* (sour rot) for waste control. The evaluation was done by artificially inoculating lemons and Valencia oranges with both pathogens and then treating them with the compound. A 100% inhibition of both pathogens was achieved. Fruit samples were submitted thereafter for residue analyses.

The supplier has subsequently applied for registration of the product. Registration should be finalized by the beginning of March 2001, prior to the start of the new citrus production season.

Recommendations for the use of CitriCure as a post-harvest fungicide on citrus will be made at a later stage, pending registration.

Screening of packhouse water samples

Keith Lesar

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A routine pathological test of packhouse critical control points for monitoring potential pathogen populations will be conducted by the OCC Diagnostic Centre as from this citrus production season.

Citrus packhouses may submit water samples (± 200 ml) from dump tanks, descalers (high pressure spray systems) and/or fungicide baths. Each test per sample will be twofold. Firstly, a total plate count will be done indicating the total number of all the micro-organisms (bacteria, fungi, etc.) present in the water. This count will give a good indication of how clean or dirty the water is and this will also be a reflection on how well the sanitation process has been managed. Secondly, a fungal count of the sample will be done to indicate the total number of fungal organisms in the water. In this instance it would also be possible to indicate the number and

type of fungal pathogen, if present in the water.

After each test a report will be submitted to the packhouse indicating the counts obtained as well as comments and possible recommendations. Each test, per water sample, will be done at a fee of R70.00 for the packhouse account.

This type of evaluation will supply the packhouse with valuable information regarding the sanitation of critical control points as well as potentially harmful situations due to the presence of fungal pathogens. The situation could then be rectified in good time.

Fruit Size Prediction

Piet van Rensburg

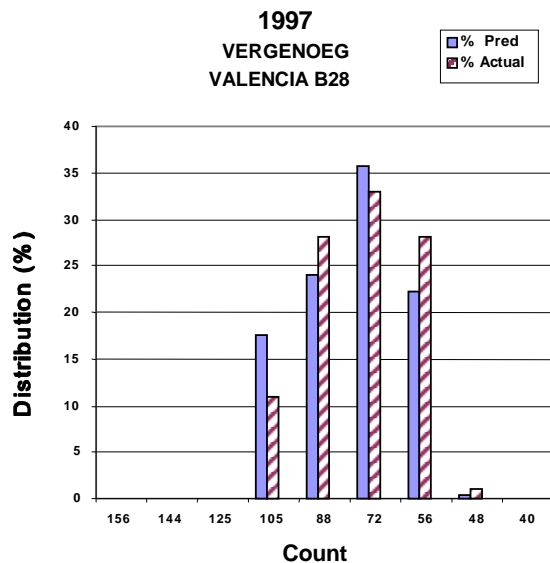
Outspan Citrus Centre, Stellenbosch

The prediction of fruit size is a factor that can drastically improve financial planning and management of fruit exports, save costs and maximise income.

Outspan Citrus Centre (OCC) researchers Piet van Rensburg and Mariette Bruwer and Capespan specialist extension officer Nico Koch, have developed fruit size prediction models to facilitate fruit size and harvest volume predictions. Currently, the production in total kg or cartons/ha and cartons per fruit size category per tree or ha of various cultivars can be accurately predicted. Fruit size can now be predicted seven to eight weeks before harvest to within 2 mm of the final fruit size. A number of very accurate predictions were supplied to producers last year (see graph of an example).

The number of requests for predictions during the past season, compelled us to involve a service provider and Hortec agreed to do the task. Producers are hereby invited to make use of the prediction service.

The data will be processed for R150.00 per prediction this year and the results faxed to the client to test the models on a commercial scale. Please make use of this service. In order to get the service established, we are offering a discount this year. Should the number of requests for predictions sent in by a client be between 11 to 20, a discount of R25 per prediction is offered. The discount for 21 and more orchards is R50 per prediction.



Method

The appropriate for data collection are in the middle of January - when the first crop estimates are made - and again at seven weeks before harvesting. The second measurement is a control of the first since experience has taught us that unusual climatic conditions can give fruit growth deviations from January until harvest.

The method of data collection for fruit size predictions is briefly described below.

The accuracy of the sample is dependent on the sample size and therefore we measure 500 fruit per uniform unit in which a prediction is required. The unit is usually a specific orchard, but when there are larger areas of trees, with the same scion and rootstock, tree size, soil type, irrigation scheme and the same crop load, the unit can be measured as one. The importance of uniform load and tree size is strongly emphasised.

In orchards where the harvest load on trees is uneven, 50 fruit on ten trees are measured. In more even orchards, 100 fruit are measured on 5 trees. **The most important part of the model is to choose trees which would be most representative of the rest of the orchard.**

The fruit are measured on that area of the tree where the greatest concentration of fruit occurs. Measure all fruit which occur on this sector of the tree - from top to bottom and outside to inside of the tree - indiscriminately. Measurements must be done with a calliper and the diameter of the fruit measured in millimetres. A very useful data recorder linked to a calliper is available. This instrument stores data directly in its memory and this can be downloaded to a computer. The apparatus can measure fruit from 12mm diameter. The contact person is Mr de Kock in the Strand and his number is 021 - 8533927.

Should a total crop estimate (kg or cartons fruit per fruit size category per ha) be needed, the total

number of fruit on a tree must be determined and the number of trees per hectare also given. The number of fruit can be determined by stripping the trees or counting the fruit on the tree. In the latter case, one can give a sheet with a known number of small dot stickers (obtainable at Waltons and preferably red) to a person who then marks the fruit. Then one counts the remaining number of stickers on the sheet and accordingly calculates the number of fruit on the tree. The dots on the fruit make it easy to check whether all the fruit was marked/counted.

The data are then typed, or downloaded from the fruit size meter, into a spreadsheet (preferably Excel) and submitted by e-mail. The address is elmi@hortec.co.za (telephone 021 8092100). The database, fruit size curves and regressions, which were obtained from your area from the previous year, are used to make predictions.

A graph with the percentage fruit per fruit size class and a table with the same data and total crop estimate per category per hectare will be provided. Remember to supply your fax numbers! Should there be any further questions, please contact one of the following. (Cape – Nico Koch 082 4160479, Northern areas – Andrew Hadlow 082 8871691 and KwaZulu-Natal – Craig Erichsen 082 4160471).

Trunk damage

Hennie le Roux & Carel Buitendag

Outspan Citrus Centre, Nelspruit

Large areas of South Africa experienced a heat wave during the first half of January 2001. Temperatures in the upper 30s and even above 40°C were experienced in numerous places. Orchard visits during this time indicated that there were still producers who were totally unconcerned about day temperature when spraying citrus or applying chemical products to the trunks of citrus trees. The aim of this note is to once again stress the seriousness of the danger of trunk mismanagement.

Trunk damage can be caused by various factors, e.g., ant bands (Tree gum) and insecticidal trunk paints (Azodrin/Monostem, Citrimet/Bacmet, Confidor and Mospilan). Products for controlling *Phytophthora* such as Aliette, Phytofos and Phytex which are used as trunk applications, can also damage trunks if they are not applied correctly.

Reasons for trunk damage:

1. Phytotoxicity: When a product such as Tree Gum, which has now been withdrawn from the market, comes into direct contact with the trunk, it is phytotoxic and ring-barks the tree trunk.
2. Unregistered products or formulations: Often producers do not realise that there are differences between formulations with the

same active ingredient, e.g., monocrotophos. Only the Azodrin and Monostem formulations are registered for use as stem treatments. Other formulations may be phytotoxic.

3. Incorrect formulations: This sometimes happens when producers make up their own mixtures instead of using previously formulated mixtures e.g., Phytex. Producers must pay attention to the quality of the product used since impurities in some of the cheaper products may cause phytotoxicity.
4. Overdosage: When a paintbrush is used instead of the Calibra, it often results in more product being applied than that which is specified on the label.
5. The absence of sap flow: When a tree's stomata are closed as a result of a shortage of moisture in the soil, often caused by high day temperatures, chemical agents are absorbed by the trunk but not transported to the leaves where they would normally be diluted. The reason for this is that there is no water moving through the xylem to the leaves. Because of the high concentration in the trunk, the product becomes phytotoxic and can lead to damage of the inner cells of the trunk (cambium). When the day temperature is normal again or when moisture is once more available, water and nutrients are distributed as usual. Since the trunk has been damaged, the carbohydrates move more feebly from the leaves to the roots. Consequently, this leads to a reduction in the carbohydrate levels of the feeder roots. It is at this stage that *Fusarium*, which is always present in citrus roots as a saprophyte, becomes a root rotting fungus, which causes the roots to rot. When the feeder roots rot away, water and nutrients can no longer be taken up effectively. This results in the tree's leaf canopy turning yellow – typical ring-bark symptoms. Should the situation then arise that the trees are exposed to drought or drowning circumstances, sudden branch mortality can occur. This “sudden death” is thus not as sudden as is mostly accepted and the cause of this can have occurred as much as a year earlier when trunk applications were done under the incorrect circumstances.

To prevent citrus tree trunks from being damaged by the application of trunk paints, the trees must be irrigated the day prior to the trunk application in order to ensure sap flow. Should day temperatures exceed 30°C, trunk applications should be temporarily abandoned.

DIAGNOSTIC CENTRE

The Diagnostic Centre (DC) will conduct all the normal evaluations during the coming citrus season at the same price structure as in 2000. There will be no price increments as a result of the poor pay-outs to growers during the past season. Two new

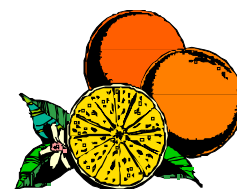
evaluations, namely the determination of the internal citrus fruit quality (R30/sample) and the testing of packhouse water samples for pathogens (R70/sample), will be introduced. The samples must be submitted to the DC.

Provided that citrus producers submit 30 or more samples for nematode and rootrot evaluations, arrangements could be made to assist in the taking of samples. An amount of R10/sample will be required to cover the travel and labour costs. Samples from other crops may also be submitted for nematode evaluations. Kindly contact the DC to co-ordinate this service in the different areas. We rely on your continued support during the coming season.

Please contact: Laura Huisman at the Diagnostic Centre, PO Box 28, NELSPRUIT 1200.
Tel. No. 013 7598031 Fax No. 013 7552281
E-mail: laura@cri.co.za

Diagnostic Centre Prices 2001

CITRUS	PRICES
Citrus nematode females / roots	R60
Citrus nematode juveniles / soil	R60
<i>Phytophthora</i> / soil	R60
<i>Phytophthora</i> / spore trap	R25
Packet (citrus nematode females + <i>Phytophthora</i>)	R80
<i>Pythium</i>	R60
Soil dilutions	R100
Redscale –organophosphate resistance	R300
Black spot- Benzimidazole resistance	R150
Mealybug - organophosphate resistance	R1000
Bio-assay for A.M.D. of nematicides	R225
Internal fruit quality	R30
Packhouse water test	R70
Quest spore trap reading – disk/week	R1000
OTHER CROPS	
Nematode / soil	R80
Nematode / roots	R80



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Die Snykant

SITRUSNAVORSINGSNUUS VAN OUTSPAN SITRUSSENTRUM

Februarie 2001

Nr. 7

CitriCure – 'n Nuwe na-oes swamdoder op sitrus

Keith Lesar

Outspan Sitrussentrum, Nelspruit

'n Nuwe formulering van die na-oes swamdoder Deccotine (guazatine) is voorgelê vir evaluasie by OSS gedurende 1999. Die produk het dieselfde aktiewe bestanddeel as Deccotine, d.i. guazatine, en die produk sal bekend staan as CitriCure.

Die nuwe formulering is getoets teen die na-oes sitruspatogene, *Penicillium digitatum* (groen skimmel) en *Geotrichum candidum* (suurvrot) vir bederfbeheer. Suurlemoene en Valencia lemoene is geïnokuleer met die twee bogenoemde patogene en dan behandel met die nuwe middel. Dié middel het albei patogene 100% inhibeer. Vrugte monsters van hierdie evaluasie is daarna gestuur vir residu ontleding.

Die verskaffer van dié nuwe middel het intussentyd aansoek gedoen vir registrasie van dié produk. Daar word verwag dat die registrasie begin Maart 2001 goedgekeur sal word voor die begin van die nuwe sitrus seisoen.

Afhangende van registrasie sal aanbevelings vir die gebruik van CitriCure as 'n na-oes swamdoder op sitrus op 'n latere stadium gemaak word.

Ontleding van Pakhuis Watermonsters

Keith Lesar

Outspan Sitrussentrum, Nelspruit

'n Roetine patologiese toets van pakhuis kritiese beheerpunte vir die beheer van potensiële patogene populasies sal deur die OSS Diagnostiese Sentrum van die begin van die sitrus seisoen uitgevoer word.

Sitrus pakhuis mag watermonsters ($\pm 200 \text{ ml}$) van dompelbaddens, hoëdrukspuit stelsels en/of swamdoderbaddens instuur. Elke toets per monster sal tweevoudig wees. Eerstens, sal 'n totale platetelling van al die mikro-organismes (bakteriële, swamme, ens.) in die water gedoen word. Hierdie telling sal 'n goeie aanduiding gee van hoe skoon of vuil die water is en ook hoe deeglik die sanitasie proses bestuur word. Tweedens, sal 'n swamtelling van die totale swamme teenwoordig in die water gedoen word. In dié geval sal dit ook moontlik wees om die getal en tipe swampatogene aan te dui, indien teenwoordig in die watermonster.

Na elke toets word 'n verslag aan die pakhuis gestuur. Hier word die tellings aangedui asook kommentaar en moontlike aanbevelings.

Elke toets sal uitgevoer word teen 'n koste van R70-00 vir die pakhuis se rekening.

Hierdie tipe evaluasie sal die pakhuis met waardevolle informasie voorsien met betrekking tot die sanitasie van kritiese beheerpunte asook potensiële nadelige situasies as gevolg van die teenwoordigheid van patogene. Die stand van sake sal dan vroegtydig reggestel kan word.

Vruggroottevoorspelling

Piet Van Rensburg

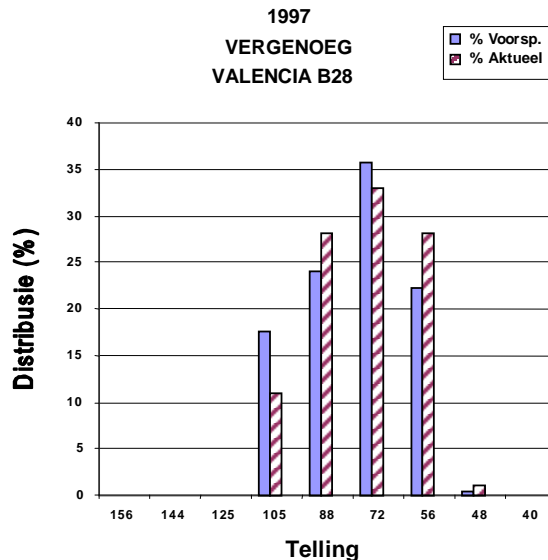
Outspan Sitrussentrum, Stellenbosch

Die voorspelling van vruggrootte is 'n faktor wat finansiële beplanning en bestuur van vruguitvoere drasties kan verbeter, kostes kan bespaar en inkomste kan maksimiseer.

Outspan Sitrussentrum (O.C.C.) se navorsers - Piet van Rensburg, Mariette Bruwer en Capespan se spesialisvoorligter Nico Koch - het oor die afgelope paar jaar vruggroottevoorspellingsmodelle ontwikkel om vruggrootte en oesvolume voorspellings te kan doen. Huidiglik kan ons die verskillende kultivars se bome se produksie in totale kg of kartonne/ha en kartonne/ vruggrootteklas/boom of ha baie akkuraat voorspel. Vruggrootte kan nou sewe tot agt weke voor oes binne 2 mm van die uiteindelige vruggrootte voorspel word. Daar is verlede jaar reeds 'n aantal baie akkurate voorspellings aan produsente gelewer (Sien gafiek van 'n voorbeeld).

Die aantal voorspellings wat die afgelope seisoen ingestuur is, het ons genoop om die diens van 'n diensverskaffer, Hortec, te gebruik. Produsente word hiermee uitgenooi om van die voorspellingsdiens gebruik te maak.

Die data sal vir R150.00 per voorspelling verwerk word en die resultate aan die produsent gefaks word om die modelle op 'n kommersiële skaal te toets. Maak gerus van die diens gebruik! Om die diens ingestel te kry bied on ook die jaar 'n afslag aan. Indien die aantal voorspellings wat deur 'n klient of kooperasie ingestuur word tussen 11 tot 20 is word 'n afslag van R25 per voorspelling aangebied. Die afslag vir 21 en meer boorde is R50 per voorspelling.



Metode

Die beste tye vir die vrug groottevoorspellings is middel Januarie - wanneer die eerste oesskattings gedoen word - en weer sewe weke voor oes. Die tweede meting is 'n kontrole van die eerste omdat ondervinding ons geleer het dat buitengewone klimaatstoestande vruggroei-afwykings vanaf Januarie tot oestyd kan gee.

Die metode vir die neem van data om die vrug groottevoorspellings te doen, word kortliks beskryf:

Die akkuraatheid van die monster hang baie af van die monstergrootte en daarom meet ons 500 vrugte per eenvormige eenheid, waarvan 'n voorspelling verlang word. Die eenheid is gewoonlik 'n spesifieke boord, maar as daar groter areas bome met dieselfde bo- en onderstamtipe, boomgrootte, grondtipe, besproeiingstelsel en dieselfde oeslading bestaan, kan die eenheid saam gemeet word. Die belangrikheid van eenvormige drag en boomgrootte word egter sterk beklemtoon.

In boorde waar die oeslading op bome oneweredig is, word 50 vrugte op tien bome gemeet. In meer eweredige boorde word 100 vrugte op 5 bome gemeet. **Die mees belangrikste gedeelte van die model is om die bome so te kies dat dit perfek verteenwoordigend van die res van die boord sal wees.**

Die vrugte word op die area van die boom gemeet waar die grootste konsentrasie vrugte is. Meet alle vrugte wat op dié sektor van die boom voorkom - van bo in die boom tot onder en van buite na binne - voor die voet. Metings word met 'n "caliper" gedoen en die deursnee van die vrug in mm gemeet. Daar is 'n baie handige data-opnemer gekoppel aan 'n "calliper" beskikbaar. Die instrument stoor data direk in 'n geheue op en dit kan dan direk in 'n sigblad in die rekenaar ingelees word. Die apparaat kan

vrug groottes vanaf 12 mm lees. Die kontakpersoon is Mnr. de Kock in die Strand en sy nommer is 021-853 3927.

Indien 'n totale oesskatting - Kg of kartonne vrugte per vrug grootteklas per ha - benodig word moet die totale aantal vrugte op die boom ook bepaal word en die aantal bome per ha ook verskaf word. Die aantal vrugte kan bepaal word deur bome te "strip" of vrugte aan die boom te gaan tel. In die laasgenoemde geval kan 'n mens 'n vel met 'n bekende hoeveelheid klein ronde dotjie-plakkertjies (verkrygbaar by Waltons en verkieslik rooi) aan 'n persoon gee wat die vrugte dan kan gaan merk. Daarna tel 'n mens net die oorblywende plakkers op die vel en werk die aantal vrugte per boom daarvolgens uit. Die kolletjies op die vrugte maak dit ook moontlik om te kontroleer of alle vrugte gemerk/getel is.

Die data word dan op 'n sigblad (Excel verkieslik) aan ons per e-pos gestuur. Die adres is elmi@hortec.co.za. (tel 021 8092100). Ons gebruik ons databasisse, vruggroeikrommes en regressies vanaf vorige jare se vruggroeidata, om die voorspellings te doen. Dit is baie belangrik dat ons ook vruggroeisifers vir jul area kan kry om die skattings so akkuraat moontlik te maak.

Ons sal dus die data verwerk en 'n grafiek met die % vrugte per vrug grootteklas en 'n tabel met dieselfde data en totale oesskatting per klas per hektaar aan julle terug faks. Onthou om julle faksnummers te verskaf! Indien daar enige verdere vrae is kontak asb 'n Voorligter in die area. (Kaap – Nico Koch 082 4160479, "Noord" – Andrew Hadlow 082 8871691 en KwaZulu-Natal – Craig Erichsen 082 4160471).

Stambeskadigings

Hennie le Roux & Carel Buitendag
Outspan Sitrusentrum, Nelspruit

Tydens die eerste helfte van Januarie het groot dele van Suid Afrika 'n hittegolf beleef. Temperature van hoog in die 30's en selfs bo 40°C is op talle plekke ondervind. Boordbesoeke gedurende hierdie tyd het getoon dat daar steeds produsente is wat totaal ongeërg is wat betref dagtemperature wanneer bespuitings gedoen word of chemiese middels aan die stamme van sitrusbome aangewend word. Hierdie skrywe is daarop gemik om produsente weereens op die erns van die gevaar van stammishandeling te wys.

Stambeskadiging kan veroorsaak word deur verskeie faktore, soos bv. mierbande (Tree gum), en insekdoderstamverwe (Azodrin/Monostem, Citrimet/Bacmet, Confidor en Mospilan). *Phytophthora*-middels soos Aliette, Phytosfos en Phytex wat as stamaanwendings gebruik word kan ook stamme beskadig sou dit nie korrek aangewend word nie.

Die redes vir stambeskadiging:

1. Fitotoksiteit. Wanneer 'n produk soos Tree gum, wat nou van die mark onttrek is, in direkte kontak met die stam kom is dit fitotoksies en ringeleer dit die boom se stam.
2. Ongeregistreerde produkte. Dikwels besef produsente nie dat 'n produk soos monokrotofos nie sonder meer gebruik kan word nie. Dit is slegs geregistreerde monokrotofos formulasies soos dié in Azodrin en Monostem wat gebruik mag word.
3. Verkeerde formulasies. Dit gebeur soms wanneer produsente hulle eie mengsels aanmaak i.p.v. die gebruik van reeds geformuleerde middels soos bv. Phytex. Produsente moet let op die kwaliteit van die produkte wat gebruik word aangesien onsuiverhede in sekere van die goedkoper produkte aanleiding kan gee tot fitotoksiteit.
4. Oordosering: Wanneer daar gebruik gemaak word van 'n verfkwas in plaas van die Calibra word daar dikwels baie meer produk toegedien as wat op die etiket gespesifiseer word.
5. Die afwesigheid van sapvloei: Wanneer 'n boom se huidmondjies sluit a.g.v. 'n gebrek aan vog in die grond of a.g.v. hoë dag temperature, word chemiese middels deur die bas geabsorbeer maar nie na die blare vervoer waar dit normaalweg verdun sou word nie. Die rede hiervoor is dat daar nie water is wat deur die xileem na die blare beweeg nie. As gevolg van die hoë konsentraat in die stam is die produkte fitotoksies en kan dit lei tot die beskadiging van die binneste selle van die bas (kambium). Wanneer die dagtemperature weer normal is of wanneer daar weer vog beskikbaar is, vind ons dat water en nutrieënte soos gewoonlik geabsorbeer word. Omdat die bas egter beskadig is beweeg die koolhidrate al swakker van die blare na die wortels. Gevolglik lei dit tot 'n afname in die koolhidraatvlakke van die voedingswortels. Dit is op hierdie stadium dat *Fusarium* wat altyd in sitruswortels teenwoordig is, oorgaan in 'n wortelverrottingswam wat voedingswortelvrot veroorsaak. Wanneer die voedingswortels afvrot kan water en voedingstowwe nie meer effektief opgeneem word nie. Dit lei daartoe dat die bome se blaarlower vergeel – tipiese ringeleringsimptome. Sou daar dan 'n situasie ontstaan waar die bome aan droogte of versuip-toestande blootgestel word, kan skielike takterugsterwing voorkom. Hierdie “sudden death” is dus nie so skielik as wat meestal aanvaar word nie en die oorsaak hiervan kan tot solank as 'n jaar tevore plaasgevind het toe stamtoedienings onder die verkeerde toestande gedoen is.

Om te voorkom dat sitrusbome se stamme beskadig word deur die toediening van stamverwe, moet die bome besproei word die dag voordat stamverwe aangewend word om sapvloei te verseker. Sou dagtemperature 30°C

oorskrei, moet stamaanwendings tydelik gestaak word.

Diagnostiese Sentrum

Die Diagnostiese Sentrum (DC) sal al die normale dienste gedurende die volgende sitrusseisoen teen dieselfde pryse as in 2000 lewer. As gevolg van die swak uitbetaling van die afgelope sitrusseisoen sal die DC die kwekers tegemoet kom deur geen prysverhogings in te stel nie.

Daar word ook twee nuwe dienste bygevoeg naamlik die bepaling van die interne kwaliteit van sitrusvrugte (R30/monster) en pakhuis watermonsters (R70/monster). Die monsters moet by die Diagnostiese Sentrum ingedien word.

Indien sitruskwekers 'n groot aantal monsters (30+) vir nematode en wortelvrot- ontledings wil neem, kan ons reëlings tref om u behulpsaam te wees met die neem van die monsters. Die koste van hierdie diens sal R10/monster wees om reis en arbeidskoste te dek. Monsters van ander gewasse kan ook vir aalwurmontledings geneem word. Kontak asb. die DC sodat hierdie diens in die verskillende areas gekoördineer kan word.

Ons maak staat op u voortgesette ondersteuning gedurende die volgende seisoen.

Kontak : Laura Huisman by die Diagnostiese Sentrum, Posbus 28, NELSPRUIT 1200.
Tel. Nr. 013 7598031 Faks Nr. 013 7552281
E-pos: laura@cri.co.za

DIAGNOSTIESE SENTRUM PRYSE 2001

SITRUS	PRYSE
Sitrusaalwurmwylfies / wortels	R60
Sitrusaalwurmlarwes / grond	R60
Phytophthora / grond	R60
Phytophthora / spoorlokval	R25
Pakket (nematodewylfies + Phytophthora)	R80
Pythium	R60
Grondverdunnings	R100
Rooidopluis – organofosfaatbestandheid	R300
Swartvlek- Bensimidasoelbestandheid	R150
Witluis-organofosfaatbestandheid	R1000
Bio-essaering vir versnelde afbraak van nematosiede	R225
Interne vrug kwaliteit	R30
Pakhuis watermonsters	R70
Quest spoorvangerlesing - skyf/week	R1000
ANDER GEWASSE	
Aalwurms / grond	R80
Aalwurms / wortels	R80

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