



Postharvest Decay Warning 2010

Keith Lesar and M.C.Pretorius
CRI - Nelspruit

The 2010 citrus season is already three quarters of the way through and the following adverse environmental conditions experienced have become problematic. Intermittent rainfall in the summer rainfall production areas, rain in the winter rainfall production areas and severe fluctuations in temperatures resulting in freeze and "black frost" conditions have contributed to the following problems:

- high pathogen inoculum levels in orchards on all surfaces resulting in:
- infections by latent pathogens – Anthracnose, Diplodia Stem end rot and Phomopsis stem end rot.
- infections by wound pathogens – green and blue mould and sour rot.
- infections by soil pathogens – Phytophthora brown rot.
- reports of high incidence of sporadic waste on South African citrus in the markets
- rind condition disorders on a number of cultivars

PRECAUTIONS and RECOMMENDATIONS

- Minimise injuries to fruit during picking, handling and transport to packhouse.
- Handle the fruit as a perishable product, because it is a perishable product.
- Ongoing removal of dead wood from trees
- Ongoing orchard sanitation is a non negotiable requirement.
- Minimise the delay between picking and treatment. The longer the delay the higher the risk for high decay.
- Packed fruit must be cooled down as soon as possible.

RECOMMENDATIONS TO PACKHOUSES THAT ARE STILL DEGREENING

Pick selectively for degreening. Place only fruit that has reached **colour break** into the same crates, and not fruit of different colours in the same crate.

DRENCH WITH RECOMMENDED MIXTURE WITHIN 24-36 HOURS.

Fruit **must not** spend too long in degreening (**preferably not longer than 48 hrs; maximum 72 hrs**).

Extended time in degreening predisposes fruit to poor quality and waste.

NB.

DO NOT DUMP WASTY FRUIT (ESPECIALLY GREEN AND BLUE MOULD AND SOUR ROT), FOUND IN BINS AFTER DEGREENING, INTO PACKHOUSE WASHING SYSTEMS. PRE-SORT AND REMOVE THIS INFECTED FRUIT BEFORE THE FRUIT MOVES INTO THE PACKHOUSE.

RECOMMENDATIONS TO PACKHOUSES THAT ARE NOT DEGREENING

OPTION: Drench with **STANDARD MIXTURE** and allow bins to stand for 1-2 days before packing.

REMOVE WASTY FRUIT IN BINS. DO NOT DUMP WASTY FRUIT INTO PACKHOUSE WASHING SYSTEMS.

PHYTOPHTHORA BROWN ROT

Adequately skirt trees to minimise the risk of **Phytophthora brown rot** infection after rainfall.

Do not pick skirt (low hanging) fruit for packing. Remove this fruit before harvesting and discard.

Spray contact fungicides only (**copper** at 200 g / 100 l or **Dithane** at 200 g / 100 l) as a preventive measure against **Phytophthora brown rot** after rainfall. Contact fungicides must be resprayed after any follow-up rainfall.

The Phosphonate registration for the control of brown rot has been withdrawn because of isolated instances of phyto damage on fruit and after claims were brought against the suppliers. The registered foliar applications of Phosphonates for the control of Root and Collar rot will also be effective against brown rot. **However, producers use the Phosphonates at their own risk.**



Cutting Edge

RESEARCH NEWS FROM CITRUS RESEARCH INTERNATIONAL

August 2010

No 104

PACKHOUSE

Packhouse hygiene and sanitation is of utmost importance, especially in high-decay periods. Sanitise surfaces more regularly and remove and bury rotten fruit at least 100 m from the packhouse. Wet-dump systems must be cleaned out daily and effectively sanitised at regular intervals during the day. Dumping of decayed fruit into wet-dump systems will contaminate the system, reduce the activity of the sanitising agent and lead to progressively more fruit infections. Pre-sorting and removal of decayed fruit outside the packhouse's treatment, sorting and packing areas is highly recommended to prevent contamination of the whole system.

Ensure that packhouse chemicals are applied at recommended concentrations and packhouse procedures and critical control points are **managed** diligently.

Pack very strictly with regard to injuries, creasing, over mature fruit, etc.

IMPORTANT POINTS TO REMEMBER

DO NOT WASTE TIME AND MONEY SPRAYING PRE-HARVEST COMPOUNDS THAT ARE NOT RECOMMENDED / REGISTERED FOR BROWN ROT AND OTHER POSTHARVEST PATHOGENS. THESE COMPOUNDS HAVE A LIMITED EFFECT ONLY AND **WILL NOT SOLVE YOUR DECAY PROBLEMS**

ADHERE TO BASIC CULTURAL PRACTICES AND PACKHOUSE RECOMMENDATIONS, BUT IMPROVE THE LEVEL OF MANAGEMENT IN TERMS OF SANITATION AND MANAGEMENT OF CHEMICALS.

All damaged fruit are a **HIGH RISK** for export.

Latent and wound pathogen infections on the tree lead to further development of latent pathogen infections, and the spread of wound pathogen infections in exported cartons.

Over-ripe fruit, past optimum internal quality, that are destined for cold disinfestation markets are less resistant to cold damage during storage/shipping.

Fruit arriving in the market with quality problems often sells at reduced prices and ultimately becomes a major loss for the grower.

PRODUCERS MUST BE AWARE OF THE RISK INVOLVED IN EXPORTING THIS FRUIT AND DECIDE WHETHER TO EXPORT THE FRUIT, OR NOT.

REFER TO THE CRI WEBSITE FOR THE PACKHOUSE WORKSHOP PRESENTATION "WASTE CONTROL" FOR THE PACKHOUSE RECOMMENDATIONS



Na-oes Bederf Waarskuwing 2010

Keith Lesar en M.C.Pretorius
CRI – Nelspruit

Die 2010 sitrus seisoen is drie-kwart klaar, en die volgende omgewingstoestande het probleme geskep. Wisselvallige reënval in die somer reënval produksiegebiede, etlike reën in die winter reënval produksiegebiede en die wisselende temperature wat vries en “swartryp” veroorsaak het, het tot die volgende probleme bygedra:

- hoë patogeen inokulumvlakke in boorde en op alle oppervlakke, met 'n moontlike risiko van hoë vlakke van bederf deur die volgende patogene:
- besmetting deur die latent patogene – Antraknose, *Diplodia* stingelentvrot en *Phomopsis* stingelentvrot
- besmetting deur die wondpatogene – groen en blouskimmel en suurvrot.
- besmetting deur die grondpatogene – *Phytophthora* bruinvrot.
- terugvoering van hoë vlakke van sporadiese bederf op Suid Afrikaanse sitrus in die markte.
- skil probleme op sommige kultivars.

VOORSORGMATREËLS EN AANBEVELINGS

- Verminder beserings op vrugte tydens pluk, hantering en vervoer na pakhuis.
- Hanteer die vrugte soos 'n bederfbare produk omdat dit 'n bederfbare produk is.
- Aangaande verwydering van dooiehout in bome.
- Aangaande boord sanitasie is 'n nie - onderhandelbare vereiste.
- Verminder die vertraging tussen pluk en behandeling. Hoe langer die vertraging hoe meer die kans vir hoë bederf.
- Verpakte vrugte moet so gou moontlik verkoel word.

AANBEVELINGS VIR PAKHUISE WAT STEEDS ONTGROEN

Pluk selektief vir ontgroening: Plaas **kleurbreek** vrugte alleen in kratte, en nie vrugte van verskillende kleure in dieselfde krat nie.

JOU HEFFING WERK VIR JOU – PRODUSENTE SE HEFFINGS WORD AANGEWEND OM DIE AKTIWITEITE VAN DIE CRI TE BEFONDS

STORT (“DRENCH”) MET AANBEVOLE MENGSELS BINNE 24-36 URE

Vrugte **moet nie** te lank in ontgroening bly nie. (**verkieslik nie langer as 48 ure nie; maksimum 72 ure**).

Verlengde tyd in ontgroening stel vrugte bloot aan swak gehalte en bederf.

MOET NIE BEDORWE VRUGTE (VERAL GROEN EN BLOUSKIMMEL EN SUURVROT), WAT IN KRATTE NA ONTGROENING GEKRY WORD, IN PAKHUIS WAS-STELSELS DOMPEL NIE. VERWYDER HIERDIE BESMETTE VRUGTE VOOR DIE VRUGTE OP DIE PAKLYN KOM.

AANBEVELINGS VIR PAKHUISE WAT NIE ONTGROEN NIE

OPSIE: “Drench” met **STANDAARD MENGSEL** en laat kratte vir 1-2 dae staan voor verpakking.

VERWYDER BEDORWE VRUGTE UIT DIE KRATTE. MOET NIE BEDORWE VRUGTE IN PAKHUIS WAS STELSELS DOMPEL NIE.

PHYTOPHTHORA BRUINVROT

Verwyder laaghangende vrugte om die risiko van **Phytophthora bruinvrot** infeksie na reënval te verminder.

Moet nie laaghangende vrugte vir verpakking pluk nie. Verwyder hierdie vrugte voor bome gepluk word.

Kontakswamdoders, op hul eie, (**koper** teen 200 g / 100 l of Dithane teen 200 g / 100 l), kan vir die beskerming van vrugte teen **Phytophthora bruinvrot** na reënval gespuit word. Kontakswamdoders moet na enige opvolg reënval weer gespuit word.

Die Fosfonaat registrasie vir die beheer van bruinvrot is onttrek a.g.v. geïsoleerde fito skade op vrugte en nadat eise teen die maatskappye in gestel is. Die geregistreerde blaarbespuitings van die Fosfonate vir die beheer van Kraag- en Wortelvrot sal ook teen bruinvrot effektief wees.



Produsente gebruik die Fosfonate nietemin op eie risiko.

PAKHUIS

Pakhuis skoonheid en sanitasie is van uiterste belang, veral tydens hoë bederf. Saniteer oppervlakke meer gereeld en verwyder en begrawe bedorwe vrugte ten minste 100 m van die pakhuis af. Nat-dompel stelsels behoort daaglik skoongemaak te word, en gereeld gedurende die dag effektief gesaniteer word. Die dompel van bedorwe vrugte in die nat-dompel stelsel sal die stelsel besmet, die aktiwiteit van die saniteermiddel verminder en toenemend meer vrug-besmetting veroorsaak. Voor-pakhuis sortering en verwydering van bedorwe vrugte, verwyderd van die behandeling-, sorter- en verpakingsareas word hoogs aanbeveel om die besmetting van die hele pakhuisstelsel te vermy.

Sorg dat pakhuis chemikalieë teen die aanbevole konsentrasies aangewend word en dat pakhuis prosedures en kritiese beheer punte deeglik **bestuur** word.

Streng verpakking vir beserings, kraakskil en oor ryp vrugte ens. moet toegepas word.

BELANGRIKE PUNTE OM TE ONTHOU

MOET NIE TYD EN GELD MORS OM VOOR OES MIDDELS, WAT NIE GEREGISTREER IS OF AANBEVEEL WORD NIE, TEEN BRUINVROT EN DIE ANDER NA-OES PATOGENE TE SPUIT NIE. HIERDIE

MIDDELS HET 'N BEPERKTE UITWERKING EN SAL NIE JOU BEDERF PROBLEME OPLOS NIE.

GEBRUIK NET DIE BASIESE BOORD PRAKTYKE EN PAKHUIS AANBEVELINGS, MAAR VERBETER BESTUUR VAN SANITASIE EN CHEMIKALIEË.

Alle beskadigde vrugte word beskou as **Hoë Risiko** vrugte vir uitvoer.

Latente en wondpatogeen besmette vrugte op die boom veroorsaak verdere ontwikkeling van latente besmetting en verspreiding van wond besmetting in uitvoerkartonne.

Oorryp vrugte, wat verby die optimale interne gehalte is, en wat vir kouesterilisasie markte gepak word, is minder bestand teen koueskade tydens opberging/verskeping.

Vrugte wat met gehalte probleme in die markte aankom word gereeld teen laer pryse verkoop. Dit is dan 'n groot verlies vir die produsent.

PRODUSENTE MOET BEWUS WEES VAN DIE RISIKO OM HIERDIE VRUGTE UIT TE VOER EN DAN BESLUIT OM UIT TE VOER OF NIE UIT TE VOER NIE.

VERWYS NA DIE CRI WEBWERF VIR DIE PAKHUIS WERKSWINKEL SE AANBIEDING "WASTE CONTROL" VIR DIE PAKHUIS AANBEVELINGS