



Mealybug alert

Sean Moore, Vaughan Hattingh, Elma Carstens
and Wilma du Plooy
Citrus Research International (CRI)

Information has been received that warrants concern about the levels of mealybug infestation on fruit inspected for export to South Korea. It is important that this situation receives urgent attention, to protect access to the South Korean and other markets. Careful attention needs to be given to ensuring that effective control of mealybug has been achieved in the field. Increased attention should be given to intensified monitoring for mealybug in orchards. Orchard selection and late corrective treatments should be considered as far as possible. Likewise, packhouse procedures should be focussed on reducing the risk of consignment rejections.

The following recommendations will assist in reducing the risk of rejections:

1. Effective mealybug control in the orchard:
 - Routine **scouting for mealybug** in the orchards should be conducted. This must be done in the normal manner recommended by CRI for scouting for mealybug (see “Orchard Inspection” and “Mealybugs” in “Integrated Production Guidelines Volume 3” on CRI’s website (www.citrusres.com)). A minimum of 5 trees per hectare and 10 fruit per tree (including inside fruit) should be inspected.
 - **Late corrective treatments** can still be applied in certain circumstances, taking care to comply with the pre-harvest intervals for specific export markets. The following late corrective treatment options are available:
 - Closer (sulfoxaflor) – 12 ml/100 L water
 - Lesson (fenpyroximate) – 200 ml/100 L water
 - Tivoli (spirotetramat) – 30-40 ml + oil – 300 ml/100 L water

Note that recent experience indicates that corrective treatment of mealybug late in the season with any of these products is not likely to provide more than 50% reduction in mealybug infestation.
2. Identifying any problematic orchards:
 - Within the last two weeks before harvest an **orchard inspection** for mealybug infestation should be conducted. This should be conducted as described above for routine scouting but due to the critical importance of this inspection, fruit should be removed from the tree, the **calyx must be lifted or removed from the fruit** (inspecting both on the underside of the calyx and on the fruit) and a magnifying glass must be used.
 - On first delivery of fruit from the orchard to the **packhouse, a sample of 100 fruit can be inspected for mealybug**. As for orchard monitoring, inspection should also be conducted under the calyx of the fruit and a magnifying glass must be used. If the fruit are Navel oranges, inspection must also be conducted inside the navel-end if there is any sign of residues or sooty mould on the fruit. This must be done by slicing the navel-end open, piece by piece.
3. If **mealybug residues and sooty mould** are present, the following packhouse procedures will assist in their removal:
 - **High pressure spray** washing with one of two alternatives:
 - Use a registered wetter with a high pressure spray. Registered wetters leave no residue, so will not contribute to the permissible count of residues, or affect the packhouse’s chemical schedule.
 - Use a registered SOPP, which has a detergent-type action. Be aware that using this will add a chemical to the count of permissible residues. It is imperative to rinse well after the wash application (convert at least two of the high pressure spray lines to apply clean water only), as SOPP does pose a risk of rind burn on sensitive citrus types. Should SOPP be used in the wash-phase, consider using OPP (registered) as one of the follow-up fungicides, as it will then still count as a single residue. The European MRL for OPP is 10 ppm,



so over-application even with the wash is unlikely.

For any further queries contact Dr Sean Moore (seanmoore@cri.co.za) or Dr Wilma du Plooy (wilma@cri.co.za).



Witluis waarskuwing

Sean Moore, Vaughan Hattingh, Elma Carstens
en Wilma du Plooy
Citrus Research International (CRI)

Kommerwekkende inligting oor die vlakke van witluisbesmetting op vrugte wat vir uitvoer na Suid-Korea geïnspekteer word, is ontvang. Dit is belangrik dat hierdie situasie dringend aandag geniet om toegang tot die Suid-Koreaanse en ander markte te beskerm. Sorgvuldige aandag is nodig om te verseker dat effektiewe beheer van witluis in die boord plaasvind. Verder moet intensiewe monitering van witluis in boorde gedoen word. Boordseleksie en laat-in-seisoen korrektiewe behandelings moet sover moontlik oorweeg word. Net so moet pakhuisprosedures fokus om die risiko te verminder dat besendings afgekeur kan word.

Die volgende aanbevelings sal help om die risiko van afkeurings te verminder:

1. Effektiewe witluisbeheer in die boord:

- Roetine **monitering vir witluis** in die boorde moet gedoen word. Dit moet op die normale manier soos deur CRI vir die monitering van witluis aanbeveel, gedoen word (sien "Orchard Inspection" en "Mealybugs" in "Integrated Production Guidelines Volume 3" op CRI se webtuiste (www.citrusres.com). 'n Minimum van 5 bome per hektaar en 10 vrugte per boom (insluitende vrugte aan die binnekant van die boom) moet ondersoek word.
- **Laat-in-seisoen korrektiewe behandelings** kan steeds in sekere gevalle toegedien word, maar met die nodige voorsorg om aan die voor-oes intervalle vir spesifieke uitvoermarkte te voldoen. Die volgende laat-in-seisoen korrektiewe behandelingsopsies is beskikbaar:
 - Closer (sulfoxaflor) – 12 ml/100 L water
 - Lesson (fenpyroximate) – 200 ml/100 L water
 - Tivoli (spirotriamat) – 30-40 ml + olie – 300 ml/100 L water

Neem asseblief kennis dat onlangse ondervinding daarop dui dat die korrektiewe behandeling van witluis laat in die seisoen met enige van hierdie produkte, waarskynlik nie meer as 50%

vermindering in witluisbesmetting tot gevolg sal hê nie.

2. Identifiseer enige boorde met probleme:

- In die laaste twee weke vóór oes moet 'n **boord-inspeksie** vir witluisbesmetting uitgevoer word. Dit moet gedoen word soos hierbo beskryf vir roetine-monitering, maar as gevolg van die kritieke belang van hierdie inspeksie moet vrugte van die boom verwyder word, **die kelkblare moet opgelig of van die vrug verwyder word** (beide die onderkant van die kelkblare en die vrug moet geïnspekteer word) en 'n vergrootglas moet gebruik word.
- 'n **Monster van 100 vrugte** kan met die eerste aflewering van vrugte van die boord aan **die pakhuis geïnspekteer word vir witluis**. Soos vir boordmonitering, moet die onderkant van die kelkblare van die vrug geïnspekteer word en 'n vergrootglas moet gebruik word. As dit nawels is, moet die binnekant van die nawel-end ook geïnspekteer word om te bepaal indien daar enige tekens van reste of roetskimmel op die vrug is. Dit moet gedoen word deur die nawel-end stuk-vir stuk oop te sny.

3. As **witluisreste en roetskimmel teenwoordig is** sal die volgende pakhuisprosedures help om dit te verwyder:

- **Hoë druk spuitwas** met een van twee alternatiewe:
 - Gebruik 'n geregistreerde benatter met 'n hoë drukbespuiting. Geregistreerde benatters laat geen residue nie, en sal dus nie bydra tot die toelaatbare telling van residue, of die pakhuis se chemiese skedule beïnvloed nie.
 - Gebruik 'n **geregistreerde SOPP**, wat 'n wasmiddel-tipe aksie het. Wees bewus daarvan dat die gebruik hiervan 'n chemikalie tot die telling van toelaatbare residue sal voeg. Dit is noodsaaklik om na die was toediening goed af te spoel (skakel ten minste twee van die hoëdruk spuitlyne oor na net skoon water), aangesien SOPP 'n risiko



vir chemiese brand vir sensitiewe sitrustipes inhou. Indien SOPP in die wasfase gebruik word, oorweeg dit om OPP (geregistreer) as een van die opvolg swamdoders te gebruik, aangesien dit steeds 'n enkele residu sal wees. Die Europese MRL vir OPP is 10 ppm, dus is 'n oor-toediening selfs mét die was onwaarskynlik.

Vir enige verdere navrae kontak vir Dr Sean Moore (seanmoore@cri.co.za) of Dr Wilma du Plooy (wilma@cri.co.za).