

## Packhouse inspections for false codling moth

by

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Citrus Research International (CRI) is currently constructing a proposed Systems Approach to false codling moth (FCM) management, as presented at the recent CRI Postharvest Workshops. Included in this Systems Approach is a comprehensive packhouse inspection system. **All citrus packhouses are strongly urged to implement the following proposed system during the coming packing season, even if only on a limited scale for trial purposes.** This is in order to a) become familiar with the system, particularly should it or something similar become mandatory in the future, and b) provide the packhouse with reliable data to indicate whether improvements in FCM management (both in orchard and packhouse) might be required. The proposed inspection standard (point 4) is a suggestion and carries no authority at this stage.

- 1 On delivery of citrus fruit to the packhouse, a random sample of 200 fruit per delivery from an orchard must be removed and inspected for FCM infestation. A delivery from an orchard is defined as all bins delivered from an orchard during the course of 1 day. Fruit delivered from the same orchard on subsequent days are considered separate deliveries. The fruit sample must be taken as evenly as possible from all bins delivered from the orchard (the entire sample must not be taken from only one bin) and without any bias towards the appearance of the fruit.
- 2 This inspection must be conducted by a suitably trained person and must be conducted destructively i.e. fruit must be cut\*.
- 3 A fruit should only be recorded as infested if an FCM larva (live or dead) is found in the fruit.
- 4 If more than 1 infested fruit is recorded per sample of 200 fruit, a further 400 fruit from the same delivery must be sampled in the same manner, thus now a total of 600 fruit being inspected per delivery.
- 5 Results from all inspections must be recorded.
- 6 After inspection, citrus fruit must be thoroughly graded on the packing line to

remove any fruit with blemishes that may be associated with FCM infestation.

- 7 Packhouse graders must be trained to identify fruit with signs of FCM infestation.
- 8 The number of graders, fruit throughput rate and lighting must be managed to maximise effectiveness of removing FCM infested fruit during grading.

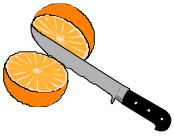
\*Procedure for fruit inspection:

- a) thoroughly inspect fruit for any marks which might possibly indicate a point of FCM penetration;
- b) cut the rind away under the mark in thin slivers which will allow observation of even the shallowest penetration of a very small larva;
- c) continue cutting into the flesh of the fruit either until infestation or the lack of it is confirmed;
- d) this procedure must be followed for any such marks observed on the rind of the fruit;
- e) thereafter, or if no such marks are observed, the same process of layered cutting must be followed on the navel end of navel oranges;
- f) thereafter and in the case of non-navel cultivars, the fruit must be cut into quarters and carefully inspected for any signs of infestation;
- g) if any such signs are observed, then further cutting and inspection should be conducted in the relevant quarter of fruit;
- h) as soon as a larva is found in a fruit, no further cutting on that fruit is required.

It is proposed that if this inspection system is followed, packhouses will a) far more effectively alert themselves to any FCM risk in a consignment of fruit, and b) allow themselves opportunity to take remedial action and/or direct the fruit to an appropriate market. Packhouses are encouraged to once again study the presentation on this topic, which is on the CD that was handed out at the CRI Postharvest Workshops.

CRI would greatly appreciate any feedback (comments and data) from packhouses implementing such an inspection system during the 2013 packing season. This information, which will assist in the development of a packhouse inspection system within an FCM Systems Approach, will be treated with the necessary confidentiality.

Please direct queries, comments and data to Dr Sean Moore – [seanmoore@cri.co.za](mailto:seanmoore@cri.co.za).



## Pakhuis-inspeksies vir valskodlingmot deur

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Citrus Research International (CRI) is tans besig om 'n voorgestelde Stelselsbenadering vir die bestuur van valskodlingmot (VKM) te ontwikkel, soos wat onlangs by die CRI Na-oes Werkswinkels aangebied is. In hierdie Stelselsbenadering is 'n omvattende pakhuis inspeksiesisteen ingesluit. **Alle sitruspakhuis word dringend aanbeveel om die volgende voorgestelde stelsel gedurende die komende pakseisoen te implementeer vir proefdoeleindes, selfs op 'n beperkte skaal.**

Die doel hiervoor is om a) meer vertrouwd te word met die stelsel, veral as dit, of iets soortgelyks, in die toekoms verpligtend word, en b) die pakuis met betroubare data te voorsien wat sal aandui of verbeteringe in VKM bestuur (beide in die boord en pakhuis) dalk benodig word. Die voorgestelde inspeksie standaard (punt 4) is 'n voorstel en is op hierdie stadium nie afdwingbaar nie.

- 1 By lewering van sitrusvrugte by die pakhuis moet 'n ewekansige monster van 200 vrugte per besending van 'n boord geneem word en vir VKM besmetting ondersoek word. 'n Besending van 'n boord word gedefinieer as alle bakke afgelewer van 'n boord gedurende die loop van 1 dag. Vrugte afgelewer van dieselfde boord op daaropvolgende dae word as aparte besendings beskou. Die vrugmonster moet so eweredig moontlik oor al die bakke wat van die boord gelewer is (die volle monster moet nie net van een bak geneem word nie) geneem word en sonder enige voorkeur tov die voorkoms van die vrugte.
- 2 Hierdie inspeksie moet deur 'n goed-opgeleide persoon gedoen word en moet destruktief uitgevoer word, d.w.s. alle vrugte moet gesny word\*.
- 3 'n Vrug moet net as besmet aangeteken word as 'n VKM larwe (lewendig of dood) in die vrug gekry word.
- 4 As meer as 1 besmette vrug per monster van 200 vrugte aangeteken word, moet 'n verdere 400 vrugte van dieselfde besending op dieselfde manier ondersoek word, dus nou 'n monster van 600 vrugte per besending wat ondersoek word.
- 5 Die resultate van alle inspeksies moet aangeteken word.

- 6 Na inspeksie moet sitrusvrugte deeglik op die paklyn gegradeer word om enige vrugte met enige letsels wat moontlik met VKM geassosieer word, te verwyder.
- 7 Pakhuisgradeerders moet opgelei word om vrugte met tekens van VKM besmetting te identifiseer.
- 8 Die aantal gradeerders, tempo van vrugvloei en beligting moet bestuur word om die doeltreffendheid om enige VKM besmette vrugte gedurende die graderingsproses te verwyder, te maksimaliseer.

\*Prosedure vir vrugte inspeksies:

- a) inspekteer vrugte deeglik vir enige letsels wat moontlik 'n VKM penetrasie kan aandui;
- b) sny die skil onder die letsel in 'n dun skywe weg, wat observasie van selfs die vlakste penetrasiemerk van 'n baie klein larwe sal toelaat;
- c) hou aan om tot in die vleis van die vrug te sny, totdat besmetting, of afwesigheid daarvan, bevestig kan word;
- d) hierdie prosedure moet gevolg word vir enige sodanige merke wat op die skil van die vrug opgelet word;
- e) daarna, of as geen sodanige merke opgelet word nie, moet dieselfde proses, om 'n dun skywe weg te sny, op die nawelent van nawellemoene gevolg word;
- f) daarna, asook in die geval van ander variëteite, moet die vrug in kwarte gesny word en noukeurig vir enige tekens van besmetting ondersoek word;
- g) as enige sodanige tekens opgelet word, moet die betrokke vrugkwart verder gesny en ondersoek word;
- h) sodra 'n larwe in 'n vrug gekry word, is dit nie nodig om die spesifieke vrug verder te ondersoek nie.

Dit word voorsien dat indien hierdie inspeksiestelsel gevolg word, pakhuis a) baie meer doeltreffend gewaarsku kan word van enige VKM risiko in 'n besending vrugte, en b) die geleentheid vir regstellende aksie het en/of die vrugte na 'n geskikte mark gestuur kan word. Pakhuise word aangemoedig om weereens die aanbieding van hierdie onderwerp te bestudeer wat op die CD verskyn wat by die CRI Na-oes Werkswinkels uitgegee is.

CRI sal enige terugvoer (kommentaar en data) waardeur van pakhuis wat so 'n inspeksie-stelsel



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gedurende die 2013 pakseisoen implementeer. Hierdie inligting, wat sal help met die ontwikkeling van 'n pakhuis-inspeksie stelsel binne 'n VKM Stelselsbenadering, sal met die nodige vertroulikheid hanteer word.

Rig asseblief navrae, kommentaar en data aan Dr Sean Moore – [seanmoore@cri.co.za](mailto:seanmoore@cri.co.za).