

# EXTENSION BRIEFS for December 2011 & January 2012

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## INTEGRATED PEST MANAGEMENT

S.D. MOORE

**False codling moth** The practice of evaluating fruit drop should be initiated in December or January in all FCM susceptible orchards and should be conducted weekly right up to harvest. The inspection of dropped fruit will provide exact data for losses due to FCM; an indication of the efficacy of treatments; a possible indication of whether further treatments for FCM are required; and an indication of post-harvest risk and therefore market suitability. In addition, such surveys will corroborate the accuracy of trap data and enable producers to gain confidence in their trap counts or indicate possible problems with the trapping procedure, in particular poor trap placement.

It is recommended that at least five trees be used as a data station. Each orchard should have its own data station. All dropped fruit must be collected under the data trees, cut open and the probable reason for the fruit drop recorded. FCM infestation is identified either by the presence of the larva or the presence of its frass (and moulted head capsules), if the larva has already exited the fruit. Note that there are other larvae which can also infest fruit and these should not be confused with FCM larvae. Fruit fly and vinegar fly larvae should fairly easily be distinguishable from FCM larvae. However, some larvae can easily be mistaken for FCM larvae (e.g. Carob moth and scavenging beetle larvae) if inspections are not conducted with the necessary attention to detail. Particularly with Navel oranges, there are often a multitude of other causes of fruit drop, such as fruit splitting, *Alternaria* navel end rot, bud mite and several others, including natural abscission and other unidentifiable factors. Without cutting fruit it is very easy to form an incorrect impression of the extent of the FCM problem and therefore the efficacy of treatments.

*Note:* Orchard sanitation is by far the most effective control measure for FCM. Research trials have shown that weekly removal and destruction of fallen fruit removes about 85% of the FCM population from the orchard. Without proper orchard sanitation effective control of FCM is not possible.

*Remember:* It is important to realise that the use of any "harsh" or disruptive products more than 4 weeks after petal fall can have a devastating impact on FCM egg parasitoids, leading to elevated levels of FCM infestation in fruit (see Cutting Edge 124).

**Mealybug** Growers should be scouting for mealybug regularly, by inspecting underneath calyxes and thereby determining percentage of fruit infested. The most effective way of doing this is to break the fruit off from the calyx. Both the fruit and the underside of the calyx should then be inspected. Where mealybug is under good biocontrol, infestation should peak during December in the northern production areas and during January

in the Cape production areas. If mealybug infestation does not decline during early January and late January to early February, respectively, suppression with a chemical treatment is advisable on early maturing cultivars. Trial results have demonstrated that buprofezin (Applaud) is by far the most effective corrective option for mealybug control. Where buprofezin is applied correctively it is imperative that application be targeted against the younger stages of mealybug i.e. eggs, crawlers and second instars. In addition, it is crucial that a full cover film spray be applied.

This is also a good time to determine which species of mealybug are present. This is important, as it appears that the biocontrol complexes of oleander mealybug and longtailed mealybug, in particular, might not be as effective as that of citrus mealybug. Therefore, treatments can be applied more easily when either of these species is identified as the dominant species in a particular orchard. The phytosanitary status of certain species must also be borne in mind.

## CROP AND FRUIT QUALITY MANAGEMENT

J.S. VERREYNNE

**Fruit growth and size** Fruit growth during this time is important to achieve optimum size at harvest. An individual factor or a combination of factors may be responsible for small fruit size. All the factors influencing fruit size should be considered and managed optimally. Please refer to Cutting Edge no. 103 for a revision of the various lemon fruit size management strategies.

Fruit size and crop load prediction should commence after the physiological fruit drop period. Please refer to the article "Fruit size and crop load prediction for citrus" in the SAFJ of Oct/Nov 2009 for details on how these predictions can be made. Regrowth control, especially after heavy pruning earlier in the season, should commence. A lot of regrowth adversely affects fruit size and is antagonistic to fruit colour development, especially for early maturing cultivars.

**Creasing:** Gibberellic acid (GA) is applied in January to reduce the incidence of creasing. It should be noted that improper timing of GA delays colour development.

**Oleo incidence:** Late summer vegetative growth of bearing trees should be kept to a minimum as excessive vegetative vigour during this period is associated with high incidence of oleo at harvest.

**Rind colour development:** Late nitrogen application and the use of high concentration, heavy summer oil sprays should be avoided as these treatments are antagonistic to rind colour development. In addition, GA treatment to reduce creasing incidence is also antagonistic to colour development.



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## **DISEASE MANAGEMENT GRONDGEDRAAGDE SIEKTES**

**M.C. PRETORIUS**

**Phytophthora beheer** Alhoewel redelike goeie reënval gedurende Desember-maande voorkom, is Januarie en Februarie-maande gewoonlik droër en die dagtemperatuur heelwat hoër. Daarom die waarskuwing dat indien van fosfonate gebruik gemaak gaan word om *Phytophthora* wortelvrotte te beheer, die middels met sorg en volgens gebruiksaanwysings toegedien moet word. Wat van uiterste belang is, is dat die middels nie gespuit behoort te word indien dagtemperatuur hoër as 28°C is nie, of die bome onder enige mate van droogte- of hitte stres verkeer nie. Geen bespuitings moet gedoen word indien enige warm bergwinde waai nie. Geen wortelvrotbespuitings behoort in hierdie warm maande op vroeë sagtesitruskultivars, bv. Satsumas, Clementines, gespuit te word nie.

### **Aalwurmbheer**

Reën, asook besproeiingswater, is nodig om die aalwurmdoders effektief deur die grond profiel te was. Dienaawurmdoders toe op nat gronde direk na 'n goeie reënbui. Volg die toediening op met ten minste 35 mm besproeiing.

### **Wenk vir effektiewe bestuur van wortelgesondheid**

Onthou die neem van grond en wortelmonsters as 'n bestuurshulpmiddel, om die aalwurm en *Phytophthora* status in die grond en wortels van sitrusboorde te bepaal, moet ten minste elke drie jaar gedoen word. Dit is uiters noodsaaklik om 'n monster te neem voordat 'n boord vir herplantdoeleindes verwyder word om die aalwurm en *Phytophthora* status te bepaal vir toekomstige verwysings.

## **FRUIT AND FOLIAR DISEASES**

**G.C. SCHUTTE**

Growers are reminded that mancozeb may not be sprayed later than December on fruit destined for the Canadian market and not later than the end of January for Japan. Carbendazim and any other breakdown products of the benzimidazole fungicide group that results in carbendazim residue (Benlate, Spotless, Bavistin, Bendazid, Knowin) may again be sprayed on fruit intended for the EU and countries that abide by the CODEX MRL system (refer to Recommended Usage restrictions document). Copper fungicides or strobilurins in tank mixtures with copper or mancozeb are also options for January. If a spray mixture containing copper will be used, then a copper spray less than 60 days prior to this is not recommended as it will cause stippling. Remember that the addition of mancozeb or copper fungicides is essential and has been proven to be necessary for effective control of CBS in independent studies. Never allow gaps to occur in and during the susceptible period from October to January, especially where contact fungicides are chosen for control. Problem periods are usually over Christmas and New Year. Follow-up treatments are necessary where rainfall occurred within 6 hours after applications. Pennfluid (420 g/L SC; mancozeb) and Spoton B (500 g/kg WP; benomyl) were recently registered for the control of CBS.