EXTENSION BRIEFS
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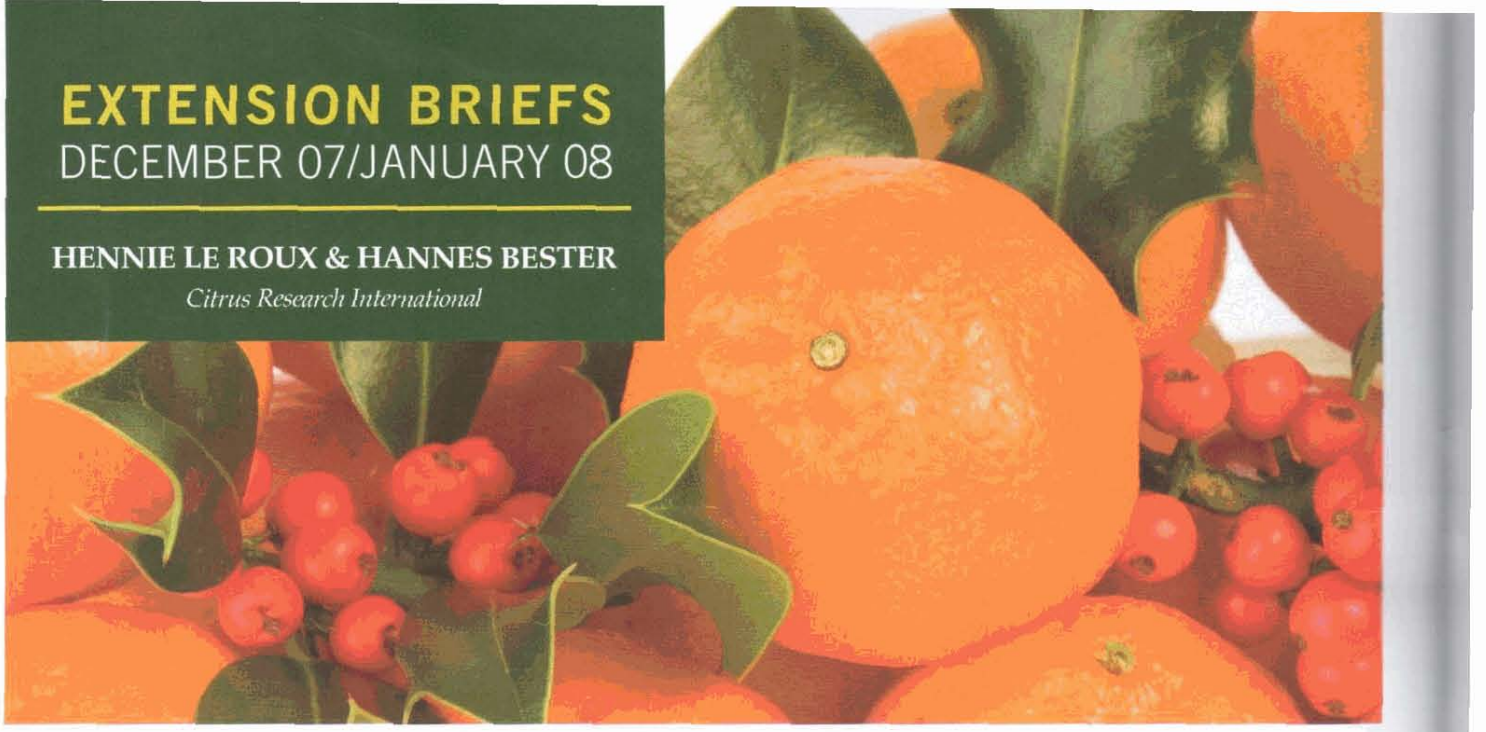
HENNIE LE ROUX & HANNES BESTER
Citrus Research International



INTEGRATED PEST MANAGEMENT (S.D. MOORE)

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. However, residue restrictions unfortunately prohibit its usage for most markets at this late stage of the season. Where the corrective usage of buprofezin is permissible (with a 45 day withholding period) it is imperative that any application of buprofezin be targeted against the younger stages of mealybug i.e. eggs, crawlers and second instars.

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 are identified as the dominant species in a particular orchard. The phytosanitary status of certain species must also be borne in mind.

Lemon borer moth

Moths of the lemon borer moth (or citrus flower moth), *Prays citri*, are attracted to lemon blossoms. These pests often appear in spring (most often in imidacloprid-treated orchards) but tend to reach even higher levels on the mid-summer blossom. Growers should inspect these blossoms to determine whether they are infested with larvae or pupae. These can be identified by their colouration, which is usually greenish and the association of webbing with pupation. Even if the damage to, and loss of blossom is not considered sufficiently severe to justify control measures, no intervention will allow the development of a second generation. It is the moths of this second generation which lay their eggs on the lemon fruitlets. Hatching larvae can potentially cause severe damage. It is therefore more effective to control the first generation. No plant protection products are registered for use against the lemon borer moth. However, there are a number of pesticides which are effective, including Bt (DiPel) and mevinphos.

CROP & FRUIT QUALITY MANAGEMENT (J.S. VERREYNNE)

Fruit growth and size:

Fruit growth during this time is important to achieve optimum size.

Irrigation: Due to the possibility of hot, dry conditions during mid-summer, irrigation practices must be optimal to ensure that limited water supply does not adversely affect fruit growth. Moisture stress during phase II (starting ± 60 days after full bloom) of fruit growth results in smaller fruit. Faster and more uniform fruit growth results from more frequent short cycle irrigation compared to long cycle irrigation.

Fertilisation: Leaf N:K ratio is important for fruit size and should be between 1.6 and 2.2. Low K levels will influence fruit size negatively. Avoid nitrogen fertilisation after December.

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.

Hand thinning: Selective removal of 20-30% of fruit from heavy bearing trees (the small and blemished fruit are removed) within 21 days from the November/December fruit drop period can improve fruit size and the earlier this can be done after the November/December drop the greater the effect would be. This is, however, a time consuming practice, but removing the small fruit, that would not attain marketable size, at an early stage would be cheaper than harvesting these small fruit with clippers at maturity.

Chemical thinning: See notes in Extension Briefs of SA Fruit Journal volume 6 part 5, or Oct/Nov 2007.

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 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.

GRONDGEDRAAGDE SIEKTES (M.C. PRETORIUS)

Phytophthora-beheer

Alhoewel redelike goeie reënval gedurende Desembermaande voorkom, is Januarie en Februarie gewoonlik droër en die dagtemperature heelwat hoër. Daarom die waarskuwing dat indien van fosfonate gebruik gemaak gaan word om *Phytophthora* wortelvrot en bruinvrot 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 dagtemperature hoër as 28°C is nie, of die bome onder enige mate van droogte- of hittestres verkeer nie. Geen bespuitings moet gedoen word indien enige warm bergwinde waai nie. Geen voorkomende behandeling vir bruinvrot behoort gespuit te word nie. **Geen buffers, wat gebruik word om die water pH reg te stel, is nodig om by die tenkmengsel gevoeg te word nie indien van fosfonaatprodukte gebruik gemaak word.**

Aalwurm-beheer

Reën asook besproeiingswater is nodig om die aalwurmdoders effektief deur die grondprofiel te was. Dien aalwurmdoders toe op nat gronde direk nadat goeie reën voorgekom het of ná besproeiing. Volg die toediening op met ten minste 35 mm besproeiing.

Wenk vir effektiewe bestuur van wortelgesondheid

Die neem van grond en wortelmonsters as ń 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 ń monster te neem voordat ń boord vir herplant doeleindes verwyder word om die aalwurm en *Phytophthora* status te bepaal.

CITRUS BLACK SPOT (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 result in carbendazim residue (Benlate, Spotless, Bavistin, Bendazid, Knowin) may not be sprayed on fruit intended for the EU and countries that abide by the CODEX MRL system. Growers that have treated citrus with carbendazim could consider sending this fruit to the Middle East, Korea, Canada or Japan. Copper fungicides or strobilurins in tank mixtures with copper or mancozeb are the only 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 permitted 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. Sporekill (100 ml) is registered for the control of CBS in tank mixtures of reduced rates of mancozeb or copper of 100 g/100 L water in both cases.