

If growers do not take the trouble to assess the exact importance of these causative agents, they may well lay the blame for their fruit drop at the door of an irrelevant factor. Obviously, once fruit has dropped, it has been lost. However, the accumulation of data on the relative contribution of the various factors to fruit drop will assist towards more informed decision-making in the future and realistic expectations of the various plant protection treatments applied.

OPSOMMING

Nawel-lemoene is baie vatbaar vir enige nadelige omgewings-faktore en fisiologiese afwykings. Dit kan moontlik toegeskryf word aan die teenwoordigheid van die sekondêre infeksies binne die vruggie. Gevolglik word groot getalle vrugte deur die seisoen afgespeen. Die eerste vrugval tydperk is bekend as fisiologiese vrugval of November vrugval. Vrugval hou daarna aan tot oestyd, met nog 'n noemenswaardige piek in Desembermaand opgevolg met 'n derde piek in Maart- of Aprilmaand. Hierdie laaste gebeurtenis is bekend as laat-somer vrugval. Die term, vooroesvrugval, verwys gewoonlik na vrugte wat val nadat hulle volwassendheid bereik het, maar voor oestyd. Hierdie artikel gee 'n opsomming van al die bekende oorsake van nawel-lemoen vrugval van na Novembermaand tot en met oestyd. Hierdie faktore kan opgedeel word in die volgende kategorieë: entomologies, patologies, omgewings/fisiologies, geneties en chemies. Die belangrikheid van hierdie faktore wissel deur die seisoen. Hulle relatiewe belangrikheid sal ook verskil van seisoen tot seisoen, area tot area en boord tot boord. Oor die algemeen is die drie belangrikste uitkenbare faktore wat somer vrugval in nawel-lemoene veroorsaak, VKM *Alternaria* swart kernvrot en nawelend bars. Produsente word daarom sterk aanbeveel om gereelde inspeksies van vrugte wat geval het in elke nawel-lemoenboord uit te voer. Die versameling van data oor die relatiewe belangrikheid van die onderskeie veroorsakende faktore sal help met besluitnemings en watter van die verskeie plantbeskermingsbehandelings wat toegedien moet word.

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CITRUS BLACK SPOT

G.C. SCHUTTE

Growers are reminded that mancozeb is not permitted to be sprayed on fruit later than December if destined for the Canadian market. Benomyl sprays or sprays resulting in a residue of carben-dazim must no longer be used for CBS control. Copper fungicides or strobilurins in tank mixtures with copper are the only options for January. If this spray mixture is considered, 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 was 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 were 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.

CROP LOAD AND FRUIT QUALITY MANAGEMENT

G.H. BARRY, J.S. VERREYNNE

Fruit growth and size: Fruit growth during this time is important to achieve optimum size. Due to the possibility of hot, dry conditions during mid-summer, irrigation practices must be optimum to ensure that limited water supply does not adversely affect fruit growth. Hand thinning by removing the smallest fruit can be done until late December/early January.

Management (Ed. T.G. GROUT). Citrus Research International, pp. 89-90. • MOORE, S.D., PITTAWAY, T., BOUWER, G. & FOURIE, J.G. 2004. Evaluation of *Helicoverpa armigera* nucleopolyhedrovirus, HaNPV, for control of *Helicoverpa armigera* Hübner (Noctuidae: Lepidoptera) on citrus in South Africa. Biocontrol Science and Technology 14(3): 239-250. • NEWTON, P.J. 1989. The influence of citrus fruit condition on egg laying of the false codling moth, *Cryptophlebia leucotreta*. Entomologia Experimentalis et Applicata 52: 113-117. • NEWTON, P.J. 1998. False codling moth *Cryptophlebia leucotreta* (Meyrick). In: Citrus pests in the Republic of South Africa. E.C.G. Bedford, M.A. van den Berg & E.A. de Villiers. (eds.) Dynamic Ad, Nelspruit, South Africa, pp. 192-200. • PEEVER, T.L., CARPENTER-BOGGS, L., TIMMER, L.W., CARRIS, L.M. & BHATIA, A. 2005. Citrus black rot is caused by phylogenetically distinct lineages of *Alternaria alternata*. Phytopathology 95: 512-518. • SCHUTTE, G.C., BEETON, K.V., PELSER, P. du T. & LESAR, K. 1994. Post-harvest control of *Alternaria* navel-end rot with pre-harvest chemical sprays. Citrus Journal 4(1): 26-28. • STEWART, W.S. & CLOTZ, L.J. 1947. Some effects of 2,4-D on fruit drop and morphology of orange. Botanical Gazette 109: 150-162. • WAGER, V.A. 1941. The November-drop and navel-end-rot problems on Navel oranges. Farming in South Africa 16(181): 143-144. • WARE, A.B. & GROUT, T.G. 2003. Red scale (*Aonidiella aurantii* (Maskell)). In: Integrated Production Guidelines for Export Citrus, Volume III: Integrated Pest and Disease Management (Ed. T.G. GROUT). Citrus Research International, pp. 125-136. • WOOLHOUSE, H.W. 1978. Senescence processes in the life cycle of flowering plants. Bioscience 28, 25-31.

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.

Dieo 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 dieo at harvest.

INTEGRATED PEST MANAGEMENT BOORDSANITASIE

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Die versameling van afgevalde vrugte, asook vrugte op die boom wat met valskodlingmot (VKM) besmet is, help om die plaag te bekamp. Hoe vroeër in die seisoen met boordsanitasie begin word, hoe beter kan die motbevolking onderdruk word. Die voordelige invloed van boordsanitasie kan veral gesien word aan die afwesigheid van noemenswaardige oesskade gedurende die seisoen tot relatief kort voor oestyd.

Teen die tyd dat dié tydskrif verskyn behoort boordsanitasie alreeds in volle swang te wees. Alle afvalvruiggies moet opgetel en vernietig word deur hulle minstens 300 mm diep te begrawe of in dromme met water te gooi. Groter vrugte behoort met 'n trekker-aangedrewe hamermeul fyn gekap te word. Indien so iets nie beskikbaar is nie, moet die vrugte minstens vier weke lank in plastieksakke toegebind te word sodat die VKM-larwes kan vrek. Deursigtige (biodegradeerbare) plastiek-saansmissakke kan nie hiervoor gebruik word nie, aangesien die larwes daardeur kan vreet. Die taaier, ondeursigtige tipe plastieksakke is wel geskik.

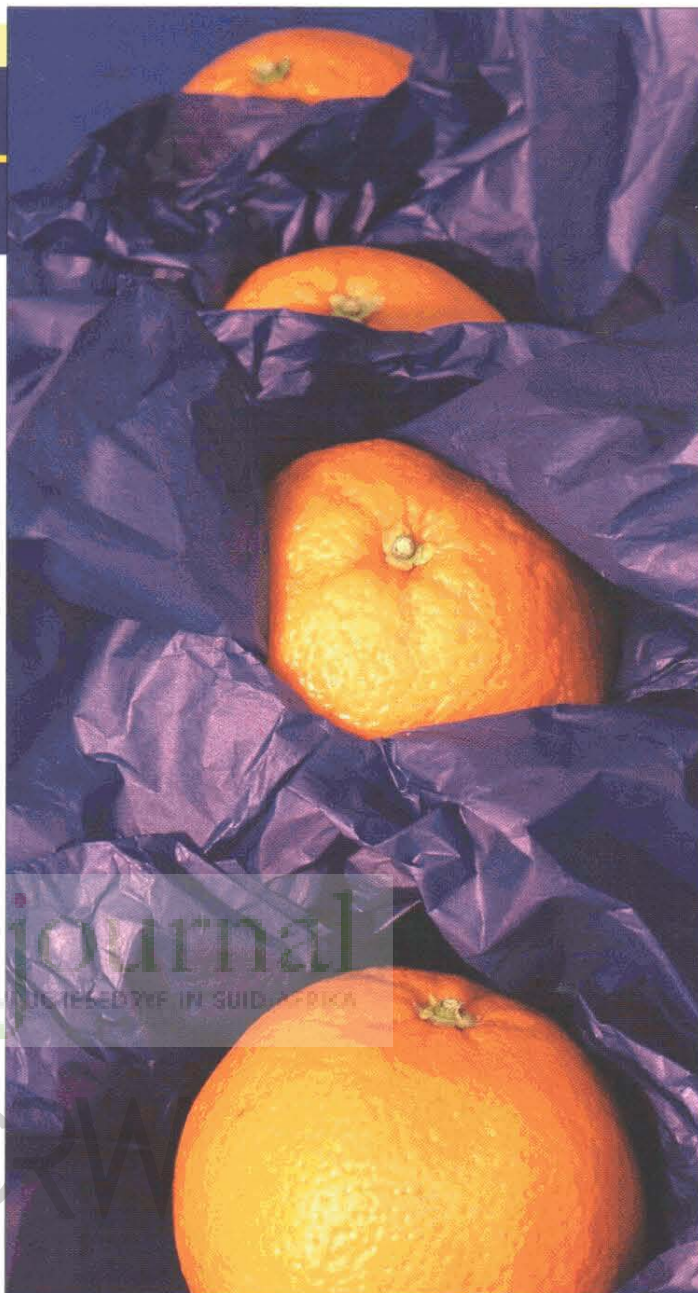
Boordsanitasie help nie net om VKM te onderdruk nie. Dit dra ook by tot vrugtevliegonderdrukking en vrugte wat met groen en blou *Penicillium*-, asook bruinvrotswamme, besmet is, word terselfdertyd verwyder.

GRONDGEDRAAGDE SIEKTES

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Phytophthora beheer

Alhoewel redelike goeie reënval gedurende Desembermaande voorkom is Januarie en Februarie gewoonlik droër en die dagtemperatuur 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 dagtemperatuur 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; en dat geen voorkomende behandeling vir bruinvrot gespuit behoort te word indien daar nie goeie deurdringende reën geval het nie.

Aalwurm beheer

Geen aalwurmdoertoediening behoort gedoen te word indien daar nie minstens 50 mm reën voorgekom het nie. Die reën en besproeiingswater is nodig om die aalwurmdoders effektief deur die grondprofiel te was. Met die droogtetoestande wat tans heers (tydens skryf van die artikel) is daar in talle gevalle onvoldoende besproeiingswater beskikbaar en is die meeste van die besproeiingstelsels nie effektief genoeg om die middels deeglik deur die grondprofiel te was nie.