



## **VIRUS SPRAYS FOR FALSE CODLING MOTH – COMPATIBILITY, TIMING AND MOLASSES**

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### **Compatibility**

As reported in Cutting Edge 75 of December 2008, Cryptogran has been shown to be compatible in a tank-mix with the following products (example of a trade name in brackets): mancozeb (Dithane), benomyl (Benlate), strobilurins (Ortiva, Cabrio, Flint), oil, abamectin (Agrimec), methidathion (Ultracide), pyriproxyfen (Nemesis), methomyl (Lannate). It is likely that the compatibility profile of Cryptex will be identical to that of Cryptogran. However, this should first be checked with the suppliers of Cryptex.

At this time of the year, the greatest benefit of such a compatibility profile is that the **virus can be applied as a tank-mix with sprays for citrus black spot**. Timing of sprays is obviously important for both false codling moth (FCM) and black spot. However, coordination of timing is possible.

It is very important to bear in mind that if oil is included in the tank mixture, no wetter should be included. The oil will serve the same purpose as a wetter. Alternatively, consideration can be given to the replacement of oil with a wetter. Care must be taken to ensure that this is acceptable for all products in the tank mix and that an appropriate wetter is used. Note that the molasses component (250 ml/100 L water for Cryptogran) must still be included.

It would be a great saving in cost, time and labour, if sprays for different pests and diseases could be tank mixed and applied simultaneously.

### **Timing**

Virus sprays such as Cryptogran and Cryptex, are only effective against neonate (newly hatched) FCM larvae. Moths, eggs and pupae are unaffected and older larvae are protected inside the fruit. It is therefore imperative that virus sprays be timed to coincide with periods when the highest percentage of the population is in the form of neonate larvae. This timing can

be predicted with the use of FCM pheromone traps.

Until such time as it can be shown that other dispensers are also able to release pheromone at a constant rate, only the Lorelei dispenser is recommended. This is available from Hendrik Hofmeyr of CRI (022-921 2618). This dispenser can be used in either a PVC pipe-trap or a Delta-trap. Delta traps tend to catch more moths. However, what is important is not the number of moths caught but the trend in moth catches. Traps must be hung in a consistent manner, according to recommendations (see Lorelei product label or CRI's IPM Production Guidelines). There are known to usually be at least six generations of FCM per year. Generational peaks can be detected by peaks in moth catches (which are male moths attracted by the female pheromone). The most reliable way in which to detect these peaks is through the use of an area-wide network of traps. Data from individual traps can sometimes be ambiguous. However, this will be overcome by inspecting the data from several traps in the same region, and following the overall trend shown by all of the data.

**Virus sprays should be applied approximately a week after the trap peak** or even the start of the trap peak (which could continue for a couple of weeks). A peak in moth catches will indicate a peak in mating activity, which will be followed shortly by a peak in egg-laying activity and naturally a peak in the incidence of egg hatching.

Many years of experience and the accumulation of much data throughout the country has confirmed the first flight peak to generally be a small one in October (or even earlier in certain regions). Throughout most of the country, the largest and most important flight peak usually occurs in late November or early December. It is this activity peak which should be targeted with the first virus spray of the season. This means that in most of the country, **the first virus spray should be applied somewhere between late November and around mid-December**. This will differ from region to region, depending on the temperature regime of the area. In the Western Cape, the November/December flight peak might not be as pronounced as elsewhere in country. However, it is just as important to target this activity peak.



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Subsequent virus sprays should similarly be applied approximately a week after later peaks in FCM trap catches. Assuming that virus is the approach of choice, anything between one and four virus sprays could be required per season, depending on the susceptibility of the cultivar or variety, the historical and current severity of FCM pressure in the orchard in question, and the sensitivity and profitability of the intended export market. For guidance on where these peaks are likely to occur, consult a CRI entomologist or a local citrus consultant.

The need for an early virus spray on susceptible cultivars such as Navel oranges, Satsuma mandarins and Turkey Valencias is without question. It is possible that less susceptible cultivars, such as other Valencia types and grapefruit, may only require their first treatment later in the season – possibly after a flight peak in late February or early March. However, if rejections for FCM on such cultivars were unacceptably high in previous seasons, then action should be taken to minimise such a recurrence. The first virus application should then also be made after the late November/early December flight peak. Diligent treatment of FCM at this time is extremely effective in sustainably knocking the population down, leading to lower late season levels of FCM and reduced post-harvest risk. Treatment of FCM later in the season will then be against an already suppressed population and should therefore be more effective.

## Molasses

The addition of molasses makes a significant difference to the efficacy of a virus spray, hence the registration with molasses. However, there are indications that molasses shortages may be experienced. If problems are experienced in the acquisition of molasses, Henry Skinner of CRI (013-7598000) may be able to assist growers in the north of the country. Failing this, contact your local distributor or the supplier of the virus product for an alternative recommendation.

Any queries or requests for more detailed technical information in regard to this article can be addressed to Dr Sean Moore, CRI: [seanmoore@cri.co.za](mailto:seanmoore@cri.co.za).



## VIRUS-BESPUITINGS VIR VALSKODLINGMOT – VERENIGBAARHEID EN TYDSBEREKENING

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### Verenigbaarheid

Soos voorgelê in Snykant nr 75 van Desember 2008, is bewys dat Cryptogran in 'n tenkmengsel verenigbaar is met die volgende produkte (voorbeeld van 'n handelsnaam tussen hakies): mancozeb (Dithane), benomil (Benlate), Strobilurine (Ortiva, Cabrio, Flint), olie, abamektien (Agrimec), methidathion (Ultracide), piriproxifen (Nemesis), methomil (Lannate). Dit is waarskynlik dat die verenigbaarheidsprofiel van Cryptex identies aan dié van Cryptogran sal wees, maar dit moet eers met die verskaffers van Cryptex bevestig word.

Op hierdie stadium van die seisoen is die grootste voordeel van so 'n verenigbaarheidsprofiel dat die **virus as 'n tenkmengsel saam met die swartvlek bespuitings toegedien kan word.** Tydsberekening van bespuitings is natuurlik belangrik vir beide valskodlingmot (VKM) en swartvlek. Nogtans is koördinering van die tydsberekening wel moontlik.

Dit moet egter in gedagte gehou word dat as olie in die tenkmengsel ingesluit word, 'n benatter nie gebruik moet word nie. Die olie sal dieselfde doel as die benatter dien. Alternatiewelik kan dit oorweeg word om die olie met 'n benatter te vervang, maar dan moet gesorg word dat so 'n praktyk vir al die produkte in die tenkmengsel aanvaarbaar is en dat 'n geskikte benatter gebruik word. Let wel dat die molasse komponent (250 ml per 100 L water vir Cryptogran) nog ingesluit moet word.

Baie geld, tyd en arbeid kan gespaar word as produkte vir verskillende plae en siektes saam in 'n tenk gemeng en gespuit kan word.

### Tydsberekening

Virusbespuitings, soos Cryptogran en Cryptex, is net teen pasuitgeborede VKM-larwes doeltreffend. Motte, eiers en papies is nie vatbaar nie en ouer larwes word binne die vrugte beskerm. Daarom is dit van uiterste belang dat die tydsberekening van virus

bespuitings ooreenstem met tye wanneer die grootste persentasie van die bevolking in die vorm van pasuitgeborede larwes is. Hierdie tydsberekening kan deur die gebruik van VKM-feromoonlokvalle voorspel word.

Tot tyd en wyl bewys kan word dat ander vrystellers ook die vermoë het om feromoon teen 'n konstante tempo vry te stel, word net die Lorelei-vrysteller aanbeveel. Hierdie vrystellers is van Hendrik Hofmeyr van CRI (022-921 2618) beskikbaar. Hierdie vrystellers kan of in 'n PVC-pyplokval of 'n Delta-lokval gebruik word. Delta-lokvalle is geneig om meer motte te vang, maar wat belangrik is, is nie hoeveel motte gevang word nie, maar die tendense in motvangste. Lokvalle moet deurentyd op dieselfde manier opgehang word, volgens aanbevelings (sien Lorelei produk-etiket of CRI se GPB Produksieriglyne). Dit is bekend dat daar gewoonlik minstens ses generasies per jaar is. Generasiepieke kan deur pieke in mot-vangste (mannelijemotte gelok deur die wyfieferomoon) bepaal word. Die betroubaarste manier om hierdie pieke te identifiseer, is deur gebruik van 'n areawye netwerk van lokvalle. Data van individuele lokvalle kan soms verwarrend wees, maar dit kan oorkom word deur data van 'n reeks lokvalle in dieselfde streek dop te hou en om die oorheersende tendens van al die data te volg.

**Virusbespuitings moet ongeveer 'n week na die lokvalpiek,** of selfs die begin van 'n lokvalpiek (wat vir meer as 'n week kan voortduur), **toegedien word.** 'n Piek in lokval vangstes sal 'n piek in paringsaktiwiteit aandui, wat kort daarna deur 'n piek in eierlegging en natuurlik 'n piek in die uitbroei van eiertjies gevolg sal word.

Baie jare se ondervinding en die versameling van groot hoeveelhede data van regdeur die land bevestig dat die eerste vlugpiek van die seisoen gewoonlik 'n klein piek in Oktober is (of selfs vroeër in sekere streke). In meeste streke in Suid-Afrika kom **die grootste en belangrikste vlugpiek gewoonlik laat in November of vroeg Desember** voor. Dit is hierdie aktiwiteitspiek waarteen die eerste virusbespuiting van die seisoen gemik moet word. Dit beteken dat in meeste streke moet die eerste virusbespuiting iewers tussen laat-November en om en by middel-Desember toegedien word. Dit sal van area tot area verskil, afhangende van algemene temperature



in die streek. In die Wes-Kaap mag die November/Desember vlugpiek dalk nie so ooglopend so elders in die land wees nie. Nietemin is dit net so belangrik om aksie teen hierdie aktiwiteitspiek te neem.

Daaropvolgende virusbespuitings moet soortgelyk, ongeveer 'n week na latere pieke in VKM lokval-vangste, toegedien word. As virusbehandeling die benadering van keuse is, kan enigiets tussen een en vier virusbespuitings per seisoen toegedien word. Dit sal afhang van die gevoeligheid van die kultivar of variëteit, die historiese en huidige VKM-druk in die betrokke boord, en die sensitiwiteit en winsgewendheid van die spesifieke uitvoermark. Vir riglyne oor wanneer die pieke moontlik gaan plaasvind, kan 'n CRI-entomoloog of 'n plaaslike sitruskonsultant gekonsulteer word.

Die noodsaaklikheid vir 'n vroeë virus-bespuiting op vatbare kultivars soos navellemoene, Satsuma-mandaryne en Turkey Valencias kan nie bevraagteken word nie. Dit is moontlik dat minder-vatbare kultivars soos ander Valencia-tipes en pomelo's hulle eerste virusbespuiting eers later in die seisoen nodig gaan kry – moontlik na 'n vlugpiek laat in Februarie of vroeg in Maart. As afkeurings vir VKM op sulke kultivars onaanvaarbaar hoog was in vorige seisoene, moet aksie geneem word om te verhoed dat so iets weer gebeur. In so 'n geval moet die eerste virus-bespuiting ook direk na die laat-November/vroeë-Desember vlugpiek

toegedien word. Deeglike bestryding van VKM op hierdie vroeë stadium behoort die populasie baie doeltreffend af te bring. Dit sal tot laer vlakke van VKM laat in die seisoen en verminderde na-oes risiko lei. Behandeling van VKM later in die seisoen behoort dan doeltreffender te wees omdat die VKM bevolking alreeds onderdruk is.

## **Molasse**

Die byvoeging van molasse maak 'n beduidende verskil aan die doeltreffendheid van 'n virusbespuiting, daarom die registrasie met molasse. Daar is ongelukkig aanduidings dat daar dalk 'n tekort aan molasse in die land mag wees. As probleme met die beskikbaarheid van molasse ondervind word, sal Henry Skinner van CRI (013-7598000) boere in die noordelike dele van die land moontlik kan help. Andersins kan jou plaaslike verspreider of die verskaffer van die virus-produk vir 'n alternatiewe aanbeveling gekontak word.

Enige navrae of versoeke vir meer tegniese inligting in verband met hierdie skrywe kan gestuur word aan Dr. Sean Moore, CRI: [seanmoore@cri.co.za](mailto:seanmoore@cri.co.za).