



## **STATUS OF THE INVASIVE FRUIT FLY- *BACTROCERA INVADENS* - IN SOUTH AFRICA**

On 23 March 2011, one exotic fruit fly specimen was detected in a surveillance trap in the Tshipise area, Limpopo province. The specimen was identified as *Bactrocera invadens*, a quarantine pest of serious concern to the Southern African region. A week later, a delimiting survey was deployed by the Department of Agriculture, Forestry and Fisheries to determine the geographical extent of the occurrence in accordance with the South African *Bactrocera invadens* action plan (<http://www.citrusres.com/>; <http://www.hortgro.co.za/>; <http://www.satgi.co.za/>). Subsequently, on 26 May 2011, 2 more specimens of *B. invadens* were found in 2 separate methyl eugenol baited traps in the Tshipise area, within 3 km from the first detection site.

A risk assessment was conducted and phytosanitary actions were implemented in the Tshipise region on 7 June 2011 to control the movement of fruit from the area under delimitation according to the provisions of Regulation R110 of the Agricultural Pests Act, 1983 (Act number 36 of 1983). Eradication procedures commenced in the area on 7 June 2011 and will continue for at least 8 weeks. An area of approximately 125 km<sup>2</sup>, along the Tshipise–Pafuri road and along the Tshipise–Musina road, has been quarantined and is currently under eradication. A combination of ground applied male annihilation treatments (fibreboard blocks impregnated with methyl eugenol and malathion, targeting males) and air/ground applied protein bait treatments (targeting females and males) is being used for eradication.

At the end of the initial eight week eradication effort, all blocks for male annihilation will be removed and intensive monitoring will be carried out for a period of 4 weeks to determine if eradication has been successful. If no further flies are caught during the 4 weeks of post treatment monitoring, eradication will be declared and quarantine will be lifted.

In general, *B. invadens* can be monitored through trapping using methyl eugenol (ME). ME is commercially available and can be used with bucket type traps. Each trap should contain one

ME dispenser. Extreme care must be taken while handling the attractant in order to avoid contamination on the outside of the trap. An insecticide such as DDVP (dichlorvos), should also be placed inside each trap to kill any attracted flies. Dichlorvos is commercially available as solid strips and a small piece (1cm x 1cm) can be used per trap. Traps should preferably be suspended on host trees such as mango, citrus, guava and peach but alternatively on other fruit trees in absence of known hosts. In case of vegetable crops such as tomatoes, pepper and pumpkin, which are also hosts of *B. invadens*, traps can be placed in the immediate surrounding vegetation.

In order to monitor the progress of eradication, it is essential that **all fruit and vegetable production areas (inclusive of home garden areas on farms) within the eradication zone have 3-5 ME baited traps per km<sup>2</sup>.**

In all other **fruit and vegetable production areas outside of the eradication zone**, surveillance trapping should either be set up or continued for detection of the pest. **Density of ME baited traps for detection in production areas (inclusive of home garden areas on farms) should be 1 per km<sup>2</sup>.**

When traps are set up, the following details should be recorded: farm name, location, host tree, date trap set, GPS positions). **Traps should be serviced (checked and emptied of caught specimens) every week in the eradication zone and at least once every month outside of the eradication zone.** Fresh attractants and dichlorvos should be placed inside the trap every 6 weeks. It is essential to record all trap servicing records (date when trap checked and date when trap re-baited) even if no specimens are caught.

All trapping information (trap details and service records) must be forwarded to the relevant surveillance co-ordinators (citrus - Aruna Manrakan, [aruna@cri.co.za](mailto:aruna@cri.co.za), 013-7598000; deciduous fruit including grapes – Leslie Brown, [Leslie@fruitgro.co.za](mailto:Leslie@fruitgro.co.za), 0828531471; subtropical fruits – Wilna Stones, [Wilna@subtrop.co.za](mailto:Wilna@subtrop.co.za), 015-3073676; all other fruit and vegetable crops – Department of Agriculture, Forestry and Fisheries: Jan Hendrik Venter, [JanHendrikV@nda.agric.za](mailto:JanHendrikV@nda.agric.za), 012-3196384). If specimens are caught, they



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should be placed in closed plastic vials and the relevant surveillance co-ordinator must be contacted immediately for arrangements to forward the specimens for identification. A trapping protocol that includes datasheets for records of trap details and trap servicing is available from the surveillance co-ordinators.

All commercial fruit growers throughout South Africa are advised to continue with or, if not doing so already, commence with such surveillance monitoring on their properties. The existence of historic trapping data may be of great economic benefit to growers in that it will provide evidence of pest freedom in the event of the fly becoming established in some areas of South Africa. It is imperative that growers immediately make known (in accordance with the procedures described above) any catches of suspected *B. invadens*. Growers should not fear the consequences of quarantine in the event of such an early detection and the implementation of eradication procedures, since it is still possible to move (under permit) host material from such quarantined sites in compliance with established additional risk mitigation procedures. **With early detection, the chances of successful eradication are very good.**

Aruna Manrakhan & Vaughan Hattingh, CRI, 013-7598000; 15 July 2011



## STATUS VAN DIE INDRINGER VRUGTEVLIEG- *BACTROCERA INVADENS* – IN SUID-AFRIKA

Op 23 Maart 2011 is een eksotiese vrugtevlieg monster in 'n waarnemings lokval in die Tshipise area, Limpopo provinsie gevind. Die monster is as *Bactrocera invadens* geïdentifiseer, 'n plaag van kwarantyn belang vir die Suider Afrikaanse streek. 'n Week later is 'n delimeterings opname deur die Departement van Landbou, Bosbou en Visserye van stapel gestuur om die omvang van die geografiese verspreiding te bepaal ooreenkomstig die Suid-Afrikaanse *Bactrocera invadens* aksieplan (<http://www.citrusres.com/>; <http://www.hortgro.co.za/>; <http://www.satgi.co.za/>). Daaropvolgend, op 26 Mei 2011, is nog twee *B. invadens* monsters in 2 aparte metiel-eugenol gelaaide lokvalle in die Tshipise area gevind, binne 3 km vanaf die eerste waarneming.

'n Risiko bepaling is uitgevoer waarna fitosanitêre aksies in die Tshipise area op 7 Junie 2011 geïmplementeer is, om die beweging van vrugte vanuit die delimeterings area volgens die stipulasies van Regulasie R110 van die Wet Op Landbouplae, 1983 (Wet nommer 36 van 1983) te beheer. Uitroeiing prosedures in hierdie area het op 7 Junie 2011 begin en sal vir ten minste 8 weke aanhou. 'n Geskatte area van 125 km<sup>2</sup>, langs die Tshipise-Pafuri pad en langs die Tshipise-Messina pad, is onder kwarantyn en uitroeiing vind tans plaas. 'n Kombinasie van grond toegediende manlike vernietigings behandelings (veselbord blokke geïmpregneer met metiel-eugenol en malathion, gerig op mannetjies) sowel as lug/grond toegediende proteïene lokaas behandelings (teiken wyfies en mannetjies) word vir uitroeiing gebruik.

Aan die einde van die oorspronklike agt weke van die uitroeiingspoging, sal al die manlike vernietigingsblokke verwyder word en intensiewe monitering sal vir 'n periode van 4 weke gedoen word om te bepaal of die uitroeiing suksesvol was. As geen verdere vlieë gevang word tydens hierdie 4 weke van na-behandeling monitering, sal uitroeiing verklaar word en die kwarantyn sal gelig word.

Oor die algemeen kan *B. invadens* gemoniteer word deur gebruik te maak van lokvalle gelaai met metiel-eugenol (ME). ME is kommersieel

beskikbaar en kan met emmer tipe lokvalle gebruik word. Elke lokval moet een ME-vrysteller

bevat. Tydens die hantering van die lokmiddel moet uitermatige voorsorg getref word om te voorkom dat die buitekant van die lokval gekontamineer word. 'n Gifmiddel soos DDVP (dichlorvos) moet ook in elke lokval geplaas word om gelokte vlieë te dood. Dichlorvos is kommersieel beskikbaar in soliede stroke, maar 'n klein blokkie (1cm x 1cm) moet per lokval gebruik word. Lokvalle moet verkieslik in gasheerbome geplaas word soos mango, sitrus, koejawel en perske, maar andersins in ander vrugtebome sou die bekende gasheerbome afwesig wees. In die geval van groentegewasse soos tamaties, groenpepers en pampoene, wat ook gashere van *B. invadens* is, kan lokvalle in die onmiddellike omringende plantegroei geplaas word.

Om die vordering van die uitroeiing te monitor is dit noodsaaklik dat **alle vrugte en groente produksie-areas verbouing (insluitend plaashuis tuine) binne die uitroeiing sone 3 tot 5 ME lokvalle per km<sup>2</sup> het.**

In alle **vrugte en groente produksie-areas buite die uitroeiing sone**, is dit noodsaaklik dat waarnemings lokvalle uitgeplaas word of dat andersins voort gegaan word om die plaag op te spoor. **Die digtheid van ME lokvalle vir monitoring in hierdie produksie-areas (plaashuis tuine ingesluit) is 1 per km<sup>2</sup>.**

Sodra die lokvalle opgestel is, moet die volgende aangeteken word: plaasnaam, ligging, gasheerplant, datum wat die lokval opgehang is sowel as die GPS-koördinate. **Lokvalle binne die uitroeiing sone moet weekliks nagegaan word en monsters moet verwyder word, terwyl lokvalle buite die sone slegs maandeliks nagegaan hoef te word.** Lokaas en dichlorvos moet elke 6 weke vervang word. Dis van uiterste belang om alle lokval dienste data aan te teken (datum wanneer die lokval nagegaan is sowel as die datum wanneer die lokval herlaai is) al is geen monsters in die tydperk gevang nie.

Alle lokval inligting moet na die verantwoordelike moniterings koördineerders aangestuur word (sitrus – Aruna Manrakhan, [aruna@cri.co.za](mailto:aruna@cri.co.za), 013-7598000; sagtevrugte insluitend druiwe – Leslie Brown, [leslie@dfptresearch.cp.za](mailto:leslie@dfptresearch.cp.za), 021-8828470; subtropiese vrugte – Wilna Stones,



[Wilna@subtrop.co.za](mailto:Wilna@subtrop.co.za), 015-3073676; alle ander vrugte en groente – Departement van Landbou, Bosbou en Visserye: Jan Hendrik Venter,

[JanHendrikV@nda.agric.za](mailto:JanHendrikV@nda.agric.za), 012-3196384). Indien monsters gevang is, moet hulle in 'n verseelde plasiekhouer geplaas word waarna die verantwoordelike moniterings koördineerder onmiddellik gekontak moet word om reëlings te tref vir die aanstuur van die monster vir identifikasie. 'n Lokval protokol, wat datablaaie vir die aantekening van lokval inligting en lokval dienste insluit, kan vanaf die moniterings koördineerders bekom word.

Alle kommersiële vrugtekwekers regdeur Suid-Afrika word aangeraai om voort te gaan, of as dit nie alreeds gedoen word nie, om met 'n waarneming moniteringsprogram op hulle eiendom te begin. Die bestaan van historiese lokvaldata mag van groot ekonomiese belang vir kwekers wees omdat dit getuieis van plaagvryheid verskaf indien die vlieg in sekere areas van Suid-Afrika gevestig sou raak. Dit is dringend noodsaaklik dat kwekers onmiddellik enige vangste van verdagte *B. invadens* bekend maak (soos deur bogenoemde prosedures beskryf word). Kwekers hoef nie die gevolge van kwarantyn te vrees in die geval van so 'n vroeë opsporing en die implementering van uitroei prosedures nie, omdat dit nog steeds moontlik is om gasheermateriaal te beweeg (met die nodige permit) vanaf sulke kwarantynterreine ooreenkomstig met bestaande addisionele risiko mitigasie prosedures. **Met vroeë opsporing is die kans vir suksesvolle uitroeiing baie goed.**

Aruna Manrakhan & Vaughan Hattingh, CRI, 013-7598000; 15 Julie 2011