



## Monitoring for surveillance of the invasive fruit fly- *Bactrocera invadens*

*Bactrocera invadens*, the African Invader fly, is a pest of Asian origin capable of infesting various commercial fruit crops. *Bactrocera invadens* was first detected on the African continent, in Kenya, in 2003. It is now listed in most countries in Western, Eastern and Central Africa as well as in some Southern African countries: Mozambique, Zambia and Namibia. In 2010, specimens of this invasive pest were intercepted in South Africa, in two separate areas in northern Limpopo, and in Botswana, Chobe district.

In South Africa, early detection of the pest allowed for timely intervention in both areas where *B. invadens* was intercepted. The pest has been successfully eradicated from South Africa. Eradication was achieved through early detection of the incursion and the rapid deployment of ground-applied male annihilation treatments and air/ground-applied protein bait treatments.

Interceptions of the fly in South Africa and Botswana last year are an indication that the areas in Southern Africa currently free of this pest are under risk of incursions. **In accordance with the recommendations of the National *B. invadens* Steering Committee, all producers of export fruit are called upon to commence monitoring for *B. invadens*. It is especially important for all growers producing fruit for export to commence with on-farm monitoring and to maintain such monitoring as evidence that the farm remains free of this pest.**

*Bactrocera invadens* can be monitored using methyl eugenol (ME), a parapheromone attractant specific to males of this pest. ME must be placed in bucket-type traps e.g., Moroccan trap, Lynfield trap or a Chempac Bucket trap. ME is commercially available in South Africa. River Bioscience supplies a relatively low cost lure plus Lynfield-type trap and a description of how to make one's own trap for use with the supplied lures can be found on [www.riverbioscience.co.za](http://www.riverbioscience.co.za). Each trap should contain only one ME dispenser and extreme care must be taken while handling the attractant to avoid contaminating the outside of the trap. An insecticide such as DDVP (dichlorvos) should also be placed inside the trap to kill any attracted flies. Dichlorvos is

commercially available as solid strips and a small piece (1 cm x 1cm) can be used per trap. ME baited traps should be suspended on host trees such as mango, citrus, marula and guava. The recommended trap density for surveillance in production areas is 1 trap per km<sup>2</sup> or 1 trap per 100 ha.

Trap details such as trap number, host type (e.g. citrus, mango, guava), block number and if possible, the GPS positions, should be recorded when placed. Traps should be serviced (checked and emptied of caught specimens) every week or fortnight and fresh ME and dichlorvos should be placed inside the trap every 6 weeks. **It is essential to keep all trap servicing records even if no specimens are caught.** All trapping information (trap details and service records) must be forwarded to the relevant surveillance coordinators:

- Citrus – Aruna Manrakhan  
aruna@cri.co.za, 013 759 8000
- Deciduous fruit including grapes – Leslie Brown  
Leslie@fruitgro.co.za, 082 853 1471
- Subtropical fruit – Wilna Stones  
[Wilna@subtrop.co.za](mailto:Wilna@subtrop.co.za), 015 307 3676
- Small and new fruit crops - Elrita Venter  
[elrita@alternafruit.co.za](mailto:elrita@alternafruit.co.za), 0823462577
- All other fruit and vegetable crops –  
Department of Agriculture, Forestry & Fisheries  
Jan Hendrik Venter,  
[JanHendrikV@nda.agric.za](mailto:JanHendrikV@nda.agric.za), 012 319 6384

Very few insect specimens should be found in these traps but if specimens are caught they should be placed in closed plastic vials and shipped to the relevant surveillance coordinators. A trapping protocol that includes datasheets for records of trap details and trap servicing is available from the surveillance coordinators.

Maintenance and expansion of surveillance of *B. invadens* in all production areas is of great and immediate importance to each individual grower and the industry as a whole.

Document drafted by Aruna Manrakhan & Vaughan Hattingh, Citrus Research International; 28 March 2011  
On behalf of the *Bi* Steering Committee



## Monitering van die indringer vrugtevlug - *Bactrocera invadens* - vir opname doeleindes

*Bactrocera invadens* is 'n indringer vrugtevlug van asiatische oorsprong, wat die potensiaal het om 'n verskeidenheid kommersieel gewasse te infesteer. Die eerste opname van *B. invadens* in Afrika was in 2003 in Kenya gedoen. Na beraming word die pes tans in Wes-, Oos-, Sentraal- en in sekere lande in Suider-Afrika aangetrof: Mosambiek, Zambië en Namibië. Gedurende die 2010 seisoen is daar by twee persele in die noordelike Limpopo en in Botswana (Chobe-distrik) eksamplare van die vrugtevlug in lokvalle onderskep.

Die vroeë onderskepping van *B. invadens* het dit moontlik gemaak dat daar betyds ingetree kon word, wat sodoende tot die suksesvolle uitwissing van die pes in Suid-Afrika gelei het. Uitwissing kon suksesvol geskied deur vroeë onderskepping, gepaard met die vinnige te voet aanwending van mannetjie-vernietigingsbehandelings en die lug/grond toediening van proteïen lokase.

Die onderskepping van *B. invadens* in Suid-Afrika en Botswana dui opnuut aan dat die pesvrye areas van Suider-Afrika onder bedreiging is. **In eenstemming met die aanbevelings van die *Bactrocera invadens* Bestuurskomitee word alle vrugteprodusente, veral die wat vir die uitvoermark produseer, aangemoedig om vir die pes te monitor en dit te volhou as bewyse van die plaas se pesvryheid.**

*Bactrocera invadens* kan met behulp van metiel-eugenol (ME), 'n paraferomoon tipe lokaas, gemonitor word, wat spesifiek is vir die mannetjies. ME moet in 'n emmer tipe lokval geplaas word soos byvoorbeeld die Marokko, Lynfield of Chempak lokval. ME is kommersieel in Suid Afrika beskikbaar. River Bioscience verskaf 'n lae koste lokaas sowel as 'n Lynfield tipe lokval, terwyl aanwysings oor hoe om jou eie lokval te maak op hul webtuiste [www.riverbioscience.co.za](http://www.riverbioscience.co.za) bekom kan word.

Elke lokval moet slegs een ME skyfiehouer ontvang en dit moet versigtig hanteer word om kontaminasie van die buitekant van die lokval te voorkom. Verder moet 'n insekdoder soos DDVP (dichlorvos) ook in die lokval geplaas word om gelokte vrugtevlieë te dood. DDVP is kommersieel in Suid Afrika beskikbaar in die vorm van 'n solliedestroom, waarvan slegs 'n blokkie van

1cm × 1cm voldoende vir gebruik sal wees. ME lokvalle behoort in gasheer gewasse soos mango, sitrus, koejawel of marula gehang te word. Die aanbevele digtheid van die lokvalle is 1 lokval per km<sup>2</sup> of 1 per 100ha.

Wanneer die lokvalle gehang word, moet die lokval nommer, gasheer tipe (bv. mango, sitrus of marula), blok nommer en, sover moontlik, die GPS koördinate aangeteken word. Die lokvalle moet een maal per week of elke tweede week gediens word (gaan na en verwyder alle gevangde eksamplare), terwyl die ME en DDVP elke 6 weke vervang moet word. **Dit is van kardinale belang om die lokval diensrekord op datum te hou, al word geen eksamplare gevang nie.**

Alle diensrekords (data en lokval informasie) moet aan die relevante opname koördineerders gestuur word:

- Sitrus – Aruna Manrakhan  
aruna@cri.co.za, 013 759 8000
- Sagte vrugte en druiwe – Leslie Brown  
Leslie@fruitgro.co.za, 082 853 1471
- Subtropiese vrugte – Wilna Stones  
[Wilna@subtrop.co.za](mailto:Wilna@subtrop.co.za), 015 307 3676
- Klein en nuwe vrugte - Elrita Venter  
[elrita@alternafruit.co.za](mailto:elrita@alternafruit.co.za), 0823462577
- Alle ander vrugte en groente gewasse –  
Departement van Landbou, Bosbou & Vissery  
Jan Hendrik Venter,  
JanHendrikV@nda.agric.za, 012 319 6384

Daar behoort nie baie insekte in die lokvalle gevind te word nie, maar indien wel moet hulle in verseëelde plastiese houers geplaas word en na die relevante koördineerders gestuur word. 'n Lokvalprotokol, sowel as 'n *B. invadens* uitkenningsblad kan van die betrokke koördineerders bekom word.

Die onderhoud en uitbreiding in die opnamenetwerk van *B. invadens* in alle produksie areas is nie net van uiterste belang vir elke individuele produsent nie, maar ook vir die hele bedryf.

Dokument opgestel deur Aruna Manrakhan & Vaughan Hattingh, Citrus Research International; 28 March 2011  
Namens die Bi Bestuurskomitee