

### Mini data sheet on *Leucinodes orbonalis*

*Leucinodes orbonalis* was added to the EPPO A1 List in 2012. A full datasheet will be prepared, in the meantime you can view here the data which was previously available from the EPPO Alert List (added to the EPPO Alert List in 2008-deleted in 2012).

**NOTE:** the taxonomy of African species of *Leucinodes* and *Sceliodes* has been revised in 2015 (Mally *et al.*, 2015<sup>1</sup>) and conclusions suggested that *L. orbonalis* does not occur in Africa (in these studies, African specimens were attributed to other *Leucinodes* species).

#### *Leucinodes orbonalis* (Lepidoptera: Pyralidae) - Eggplant fruit borer

**Why:** Since 2004, more than 120 interceptions of *Solanum* fruits infested by *Leucinodes orbonalis* and imported from Asia and Africa have been made by several EPPO member countries. The Panel on Phytosanitary Measures recommended that this pest should be included into the EPPO Alert List.

**Where:** *L. orbonalis* is a tropical pest which occurs in Asia and Africa.

**EPPO region:** absent.

**Asia:** Bangladesh, Brunei Darussalam, Cambodia, China, India, Indonesia, Japan, Laos, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Saudi Arabia, Singapore, Sri Lanka, Taiwan, Thailand, Vietnam.

**Africa:** Burundi, Cameroon, Congo, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mozambique, Nigeria, Rwanda, Sao Tome & Principe, Sierra Leone, Somalia, South Africa, Tanzania, Uganda, Zambia, Zimbabwe.

**On which plants:** Its major host is aubergine (*Solanum melongena*) but *L. orbonalis* can attack other solanaceous plants such as *S. tuberosum* (potato), *S. aculeatissimum*, *S. indicum*, *S. myriacanthum*, *S. torvum*, *Lycopersicon esculentum* (tomato), *Capsicum annum* or weeds (*S. nigrum*). The pest has also been reported on the following crops: *Beta vulgaris*, *Ipomoea batatas*, *Mangifera indica*, *Pisum sativum*.

**Damage:** Damage is caused by larvae which feed on fruits. Eggs are laid on leaves and young shoots. Hatching larvae crawl to the nearest shoots or fruits and bore inside. On fruit, larvae usually enter just below the calyx. 6 larval instars have been observed. Last instar larvae bore exit holes and pupate in plant debris on the soil surface, usually near the stem of the host plant. Adults are white with brown wing patterns (wingspan of 18 to 24 mm) and active at night.

Pictures can be viewed on the Internet:

[http://www.ento.csiro.au/gallery/moths/slideshow.php?set\\_albumName=Leucinodesorbonalis](http://www.ento.csiro.au/gallery/moths/slideshow.php?set_albumName=Leucinodesorbonalis)

[http://www.avrdc.org/LC/eggplant/rear\\_efs03intro.html](http://www.avrdc.org/LC/eggplant/rear_efs03intro.html)

**Dissemination:** Adults can fly over short distances, they are considered as weak flyers but no further details are given. Over longer distances, infested fruits can disseminate the pest.

**Pathway:** Plants for planting, fruits of *Solanum* and other host plants from countries where *L. orbonalis* occurs, soil?

**Possible risks:** Aubergines (*S. melongena*) and other hosts such as tomato (*Lycopersicon esculentum*), potato (*S. tuberosum*), and *Capsicum annum* are widely grown in the EPPO region. In countries where *L. orbonalis* occurs, significant yield losses have been reported (e.g. in Asia more than 65% yield losses are reported on aubergine). Chemical control is the

<sup>1</sup> Mally R, Korycinska A, Agassiz DJL, Hall J, Hodgetts J, Nuss M (2015) Discovery of an unknown diversity of *Leucinodes* species damaging Solanaceae fruits in sub-Saharan Africa and moving in trade (Insecta, Lepidoptera, Pyraloidea). *ZooKeys* 472, 117-162.

main method used (several active substances can be applied) but there is some indication that the pest has developed resistance. The presence of the insect may be easily overlooked during inspection, as holes can be very small. Considering the tropical nature of the pest, it is unlikely that the pest will survive outdoors in the northern part of the EPPO region but it probably could survive under protected conditions. More studies are needed to evaluate its establishment potential in the Southern part of the EPPO region which appears to be more at risk. Finally, *L. orbonalis* has been intercepted many times on fruit consignments, but the risk of transfer from infested fruits to crops is probably rather low.

#### Sources

- Bishop S, Matthews L, MacLeod A (2006) CSL Pest Risk Analysis. York, UK.  
<http://www.defra.gov.uk/plant/pra/LeucinodesOrbonalis.pdf>
- CABI (2007) Crop Protection Compendium. Datasheet on *Leucinodes orbonalis*.  
<http://www.cabicompendium.org/cpc/home.asp>
- Van der Gaag DJ, Stigter H (2005) Pest Risk Analysis *Leucinodes orbonalis* (Guénéé). Plant Protection Service, the Netherlands. [http://www.minInv.nl/cdIpub/servlet/CDLServlet?p\\_file\\_id=14186](http://www.minInv.nl/cdIpub/servlet/CDLServlet?p_file_id=14186)
- Zhang B-C (1994) Index of the economically important Lepidoptera. CABI Wallingford, UK, 468 pp.

EPPO RS 2008/011

Panel review date -

Entry date 2008-01