

# Western corn rootworm - PAL trap

*Diabrotica v. virgifera* LeConte.  
Adult male beetles are 4-7 mm long, have a flat body with 3 broad, dark stripes on their yellowish-white back. Sometimes the dark stripes are more or less converged. Thorax is not spotted, yellowish-brown, while the similarly looking and in Central Europe abundant non-pest elm leaf beetle (*Galerucella luteola*) is larger and has black-spotted thorax. Larvae live in the soil among the roots and have a whitish, soft, maggot-like body.

**Host plant** is **maize**, but feeds also on some other graminaceous plants. **Damage:** The greater damage is caused by the larvae, which chew and often bore throughout the root-stock and roots of maize in the soil. The whitened, spotted colour of the leaves is characteristic, shows deficiency in nutrients.

Indirect damage: plants with dead roots often collapse, sometimes they can recover and straighten up, this way forming a "goose-neck" shape, characteristic of the damage by western corn rootworm (WCR) larvae. Adult beetles cause damage by chewing the grains at the tip of the unmatured maize-ears, They also damage the stigma, which can cause fertilization problems. This damage, however, is not so significant as the root-damage caused by the larvae. The **PAL** traps should be placed at **1.0-1.5 m** height (or below the upper level of vegetation) at maize plants 5-10 m inside a maize field. Recommended starting time of trapping in Central Europe is **mid-June**.



PAL

www.kis.si



www.ipm.iastate.edu



© www.diabrotica.ro



www.ianr.unl.edu

The damage of the adult beetle

**Selectivity** of the PAL trap: In Central Europe the bait of the trap does not attract any other insects. Flies, wasps etc. are caught in the sticky layer by chance only.

The trap does not loose from its activity for at least 4-6 weeks in the field, depending on environmental conditions. In order to ensure reliable monitoring, the whole trap should be replaced after this time period, WCR appeared in Europe quite recently. First beetles were discovered near Beograd (Yugoslavia) during the summer of 1992<sup>[1]</sup>. By 2004 many Central- and Western European countries have been infected<sup>[2]</sup>.

Application of pheromone traps ensure **early detection** of the pest in a new geographical area, or the monitoring of the flight where the pest already established itself. Pheromone traps proved to be the **most sensitive tool** for detection of the beetle<sup>[3,4]</sup>.

*The larvae and their damage*



[www.eppo.org](http://www.eppo.org)



[www.agricomseeds.net](http://www.agricomseeds.net)



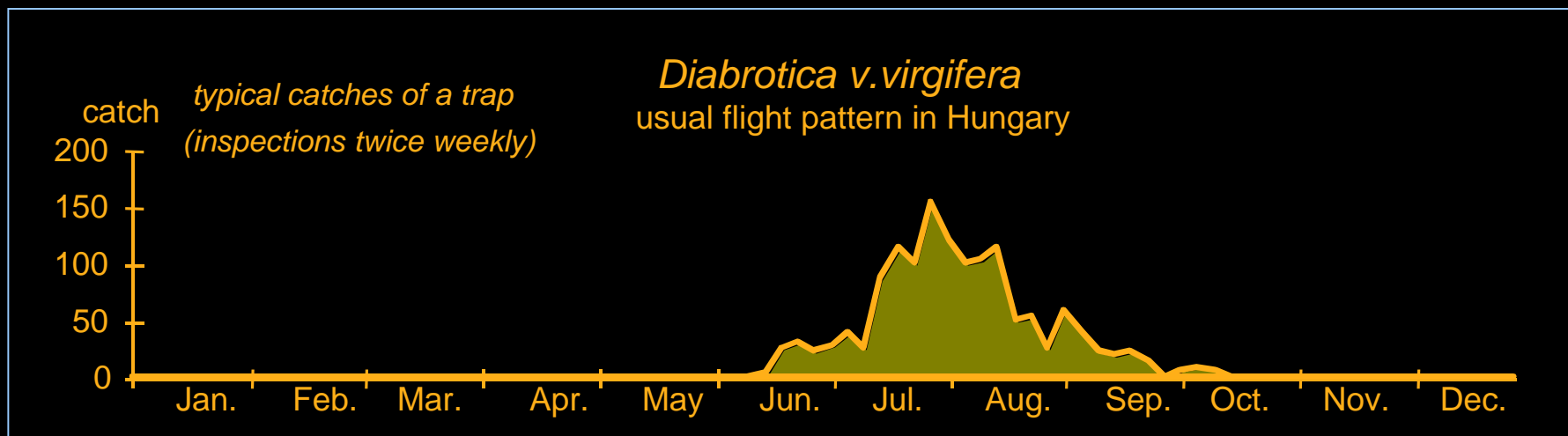
[www.bayercropscience.ro](http://www.bayercropscience.ro)

In 1996, for example, from the total of 788 WCR beetles captured in detection trials in Croatia, 769 was caught in pheromone traps and only 21 in other types of trapping devices<sup>[3]</sup>.

<sup>[1]</sup> Čamprag, D., Bača, F. *Pesticide Science*, 45:291-292, 1995. <sup>[2]</sup> for current distribution of WCR in Europe see [www.mkk.szie.hu/dep/nvtt/wcrnet](http://www.mkk.szie.hu/dep/nvtt/wcrnet) <sup>[3]</sup> Igrc-Barcič, J. *IWGO Newsletter*, 16(2):22-23, 1996; Zlof, V. *IWGO Newsletter*, 16(2):16-17, 1996. <sup>[4]</sup> Ilovai, Z. *IWGO Newsletter*, 16(2):18, 1996; Tóth, M. et al., *Növényvédelem*, 32:447, 1996.



Occurrence of WCR in Europe until 2004 as detected by PAL traps— for up-to-date distribution pls refer to <sup>[2]</sup>



is a registered trademark of the Plant Protection Institute, MTA ATK, Budapest, Hungary.

**To order / to inquire:** MTA ATK Növényvédelmi Intézet (Plant Prot. Inst. MTA ATK) Budapest, Pf 102, H-1525, Hungary  
phone. +(36-1)-391-8637, +(36)-30-9824999; fax +(36-1)-3918655; e-mail: <[csalomon.orders@julia-nki.hu](mailto:csalomon.orders@julia-nki.hu)> or  
<[h2371tot@ella.hu](mailto:h2371tot@ella.hu)>; internet: <<http://www.julia-nki.hu/traps/>>.



In the field, when captured WCR beetles are left in the trap for some days, they can be covered by the sticky material, so that the colouring of the elytrae is no longer easily visible.



The EU research project DIABROTICA (QLK5-CT-1999-0110) recommends to use PAL traps baited with pheromone as the standard detection tool for *Diabrotica v. virgifera* in Europe.