

# *Lyprauta* spp. (Diptera: Keroplatidae) in orchid greenhouses in The Netherlands

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For quality of life





# Production of Phalaenopsis in the Netherlands

- 2004
  - 80 ha (60 growers)
  - 35 M plants
  
- 2009
  - 220 ha
  - 96 M plants

# New insect problem

- Phalaenopsis generally requires little use of insecticides
- In 2002, growers reported root damage caused by insect larvae, longer and thinner than the well-known fungus gnats (Sciaridae)
- Project financed by the Dutch Production Board was started in 2004

















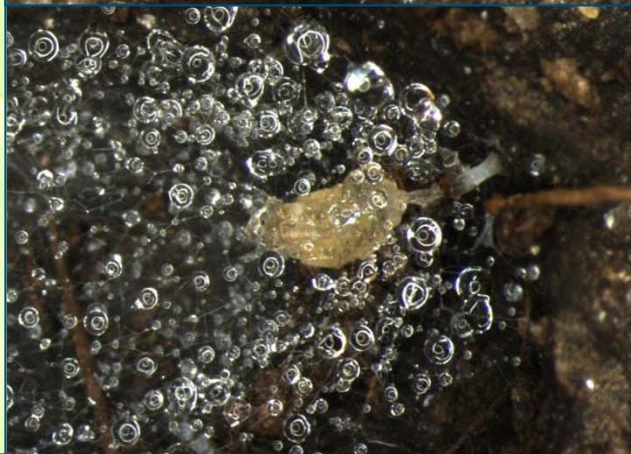


# Identification

- Glasshouse soils house a variety of Limoniidae, Mycetophilidae, Sciaridae and Keroplatidae
- 3 species of Keroplatidae (“long horn gnats”)
  - *Proceroplatus trinidadensis*, new for Europe
  - *Lyprauta chacoensis*, common in South America
  - *Lyprauta cambria* nov. spec. Chandler
- *Lyprauta*: 25 species (Evenhuis, 2006)
  - *Lyprauta oberthueri* Matile in Europe
  - 3 species in Africa
  - Most species in North and South- America (Papavero, 1978; Matile, 1990).

# *Lyprauta* spp.

- Adults found in spider webs
- Monitoring with light traps
- Life-cycle (in laboratory)
  - larvae > 4 weeks
  - pupae 6 - 7 days
- Larvae
  - in silk tunnels
  - mycophagous and/or predaceous ?
  - secretion of oxalic acid from labial glands





# Laboratory observations on natural enemies

- No predation by *Atheta coriaria* adults
- No predation by predatory mites
  - *Hypoaspis miles* Laelapidae
  - *Hypoaspis aculeifer* Laelapidae
  - *Macrocheles robustulus* Macrochelidae
- Mortality by nematodes
  - *Steinernema feltiae*
  - *Heterorhabditis bacteriophora*



# Laboratory test of insecticides

- Malathion (malathion)
- Actellic (pirimifos-methyl)
- Vydate (oxamyl)
- Dimethoat (dimethoate)
- Mesurol (methiocarbe)
- Curater (carbofuran)
- Methomex (methomyl)
- Decis (deltamethrin)

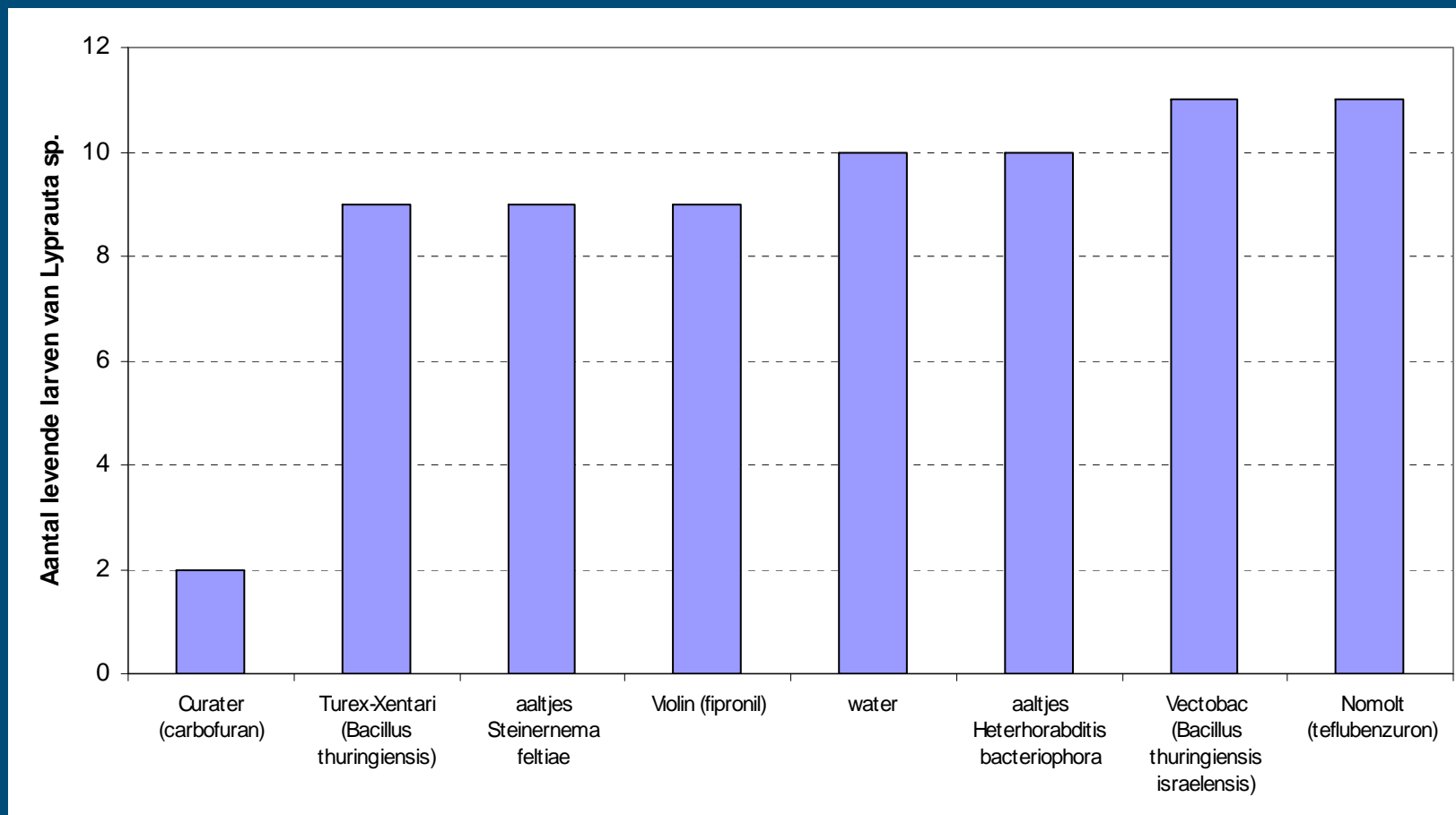








# Greenhouse test of antagonists



# Conclusions

- A preliminary investigation revealed 3 species of Keroplatidae including a species nova
- Heated greenhouses probably house more invasive species than we are aware of
- Because broad spectrum insecticides are abandoned, a wider variety of arthropods becomes apparent
  - native + exotic
  - pests, beneficials
- In this environment, integrated pest management tends to become more complicated