

Ladybirds and biological control in Belgium, with a special focus on *Harmonia axyridis*

Workshop 27.11.03
Flemish Institute of Nature Conservation – Brussels



Horpi Systems S.A. - 27/11/03

1

I. Company presentation

- Horpi Systems ⇒ young company created in 1999, settled in Verlainne (Liège)
- Active in the integrated and biological control against pests in crops and forests
- Also specialized in pollination

Horpi Systems S.A. - 27/11/03

2

I. Company presentation – production activities

- *Adalia bipunctata*
 - Larvae ⇒ control >> aphids
 - Eggs ⇒ breeding kit « Adalia Box » (educational programme)
- *Rhizophagus grandis*
Predatory coleoptera >> spruce bark beetle
Dendroctonus micans

Horpi Systems S.A. - 27/11/03

3

I. Company presentation – Trading activities

- *Adalia bipunctata* : larvae + breeding kit
- *Rhizophagus grandis*
- Biological products for gardeners and professional producers :
 - Gardeners
 - Fruit growers (apple, pear, strawberries...)
 - Horticulturists (vegetables and ornamental plants)
 - Forests managers, green areas managers

Horpi Systems S.A. - 27/11/03

4

I. Company presentation – Trading activities

A wide range of biological products :

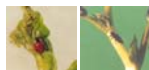
- Beneficials
- Organic fertilizers
- Traps
- Bio-pesticides
- Bumblebees hives

Horpi Systems S.A. - 27/11/03

5

II. General presentation – *Adalia bipunctata*

- A2 = native ladybird
- Most prolific ladybird of our regions
- Able to have 2 generations / year
- Adults start laying eggs early when leaving hibernation places (february to end April)
- 1st generation larvae ⇒ specially abundant in trees (end of april)

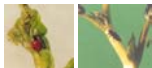


Horpi Systems S.A. - 27/11/03

6

II. General presentation – *Adalia bipunctata*

- 1st generation adults ⇒ June
- Eggs of these F1 adults ⇒ preferentially on herbaceous plants
- 2nd generation of adults ⇒ August
- These adults will look for overwintering sites in September (bark crevices)
- Diapause period – Dormance period
- Why *Adalia bipunctata*?



Horpi Systems S.A. - 27/11/03

7

III. Purchase of *Adalia bipunctata* larvae

- Gardeners : via garden centers (voucher to be sent to Horpi Systems)
- Producers : salads, strawberries, fruit growing, ornamental plants
- Green areas : « big trees »
- Wholesalers (Belgium + France)

Horpi Systems S.A. - 27/11/03

8

III. Purchase of *Adalia bipunctata* larvae

Packaging :

- Use of L2 larval stage
- Packages :
 - Gardener ⇒ 50 larvae
 - Professional producer ⇒ 100 & 250 larvae

Horpi Systems S.A. - 27/11/03

9

IV. *Adalia bipunctata* introduction to control aphids

Quantities to be introduced :

- Biological control
- Various factors
- R & D

Horpi Systems S.A. - 27/11/03

10

IV. *Adalia bipunctata* introduction to control aphids

Quantities to be introduced :

- Gardeners
 - Roses and other flowers : 3 to 5 per flowering stem
 - Trees and ornamental shrub : 3 to 5 per aphid hotspot
 - Fruit trees (low): 10 to 20 per tree (early introduction) or 1 larvae per aphid colony
 - Big trees : 100 larvae for 30 cm diameter trunk
 - Fruit shrub : 3 to 5 per stem or 10 per heavy infestation
 - Vegetable garden (salad, strawberry,...) : 2 to 5 per plant

Horpi Systems S.A. - 27/11/03

11

IV. *Adalia bipunctata* introduction to control aphids

HOW TO IMPROVE THE CONTROL WITH LADYBIRD LARVAE ?

- Early introduction
- Glue ring (5-10 cm high) >< !!! ANTS !!!
- Severe aphids infestation ⇒ cleaning treatment with biological insecticide (pyrethrum, nettle manure, soap,...)

Horpi Systems S.A. - 27/11/03

12

IV . *Adalia bipunctata* introduction to control aphids

Quantities to be introduced :

- Professional growers :
 - Salad : 5/m²
 - Strawberries : 10–20/m² (in and around hotspots)
 - Apples and pears : 5 – 25/tree (short tree)
 - Ornamental : 10 – 25/m²
- Green areas (trees)
 - Acer sp, Tilia sp : 200 / tree (Ø 30 cm)
600 / tree (Ø 100 cm)

V . Conclusion

- Gardeners ⇒ 60%
- Professionals ⇒ 40%
 - Big trees ⇒ 70%
 - Others ⇒ 30%
- R & D
 - Decreasing production costs
 - Increasing introductions efficiency