

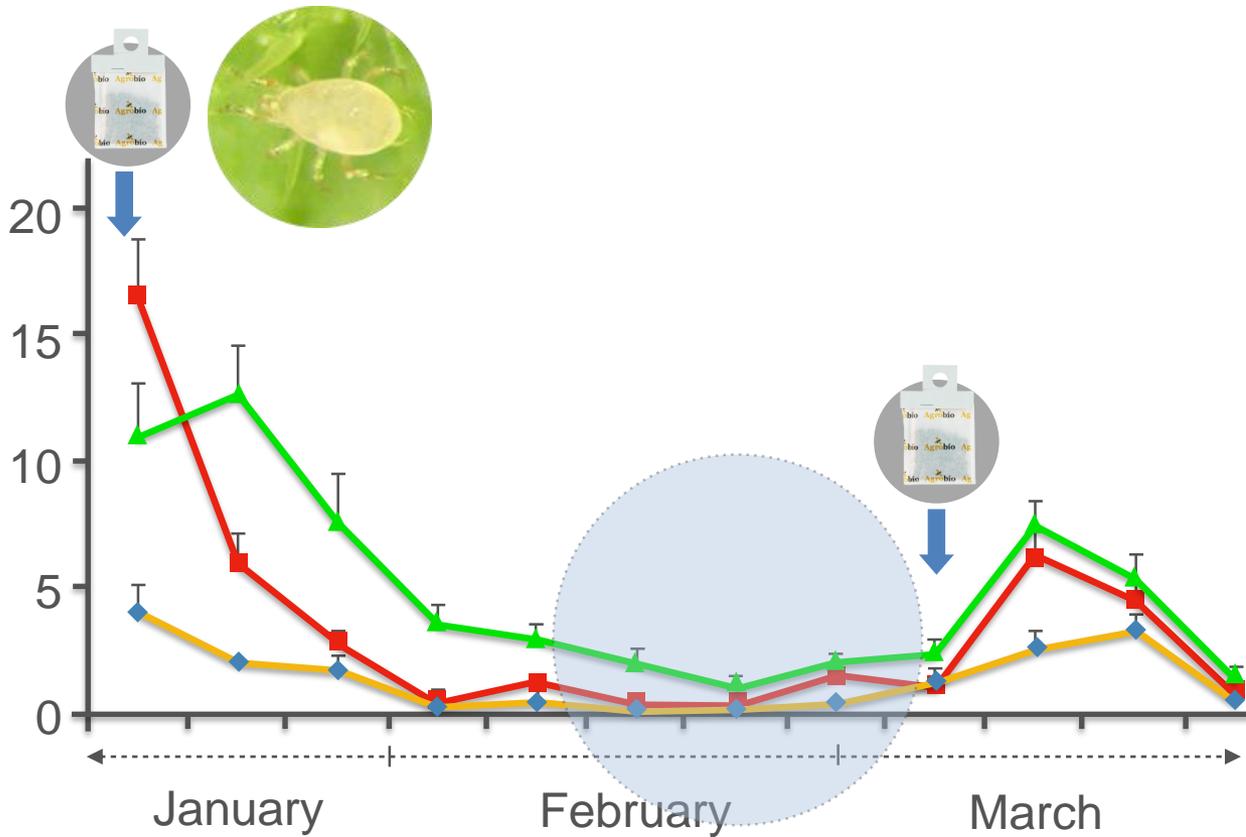
Prey mites as an innovative strategy for biocontrol

Enric Vila - R&D Agrobío



Tools to guarantee high populations of predators?

.....



Examined strategies...

- **Released formulations:**

Controlled release sachets



- **Food:**

- *Ephestia*
- Artemia
- Pollen



- **Alternatives diets:**

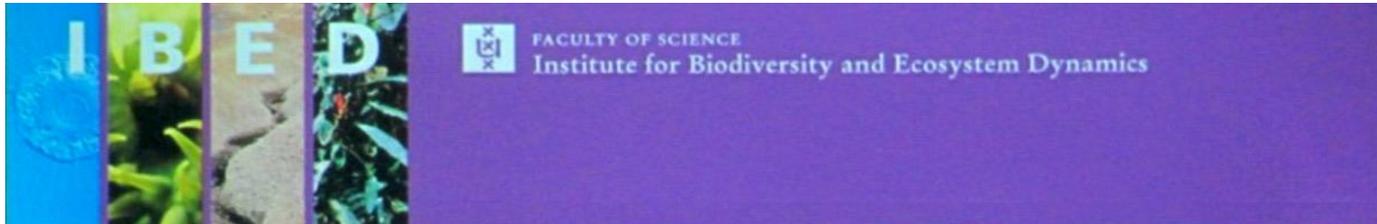
Prey mites on ground



 **WAGENINGEN UR**
For quality of life

Examined strategies...

ICA 2014, Kyoto



IBED
FACULTY OF SCIENCE
Institute for Biodiversity and Ecosystem Dynamics



Supplying the belowground-food web with alternative food increases control of aboveground plant pests
Karen Muñoz-Cárdenas, Firdevs Ersin-Dogan, Maria Pappas, Juliette Pijnakker, Ada Leman, Maurice Sabelis and Arne Janssen

Examined strategies...

ICA 2014, Kyoto

Potential problems of using the soil food web for the production of alternative food for plant-dwelling predators

1

Is it the “*right*” alternative prey species?

2

Do the plant-inhabiting predators need to go down to the litter?

3

Does alternative food in the litter improve biocontrol?

4

Predators already in litter

Which is the interaction of soil-predatory mites and plant-inhabiting mites when an alternative prey is added?

19/34

Prey mites as an in-crop food source

.....

1st

First successful experiences on ornamentals



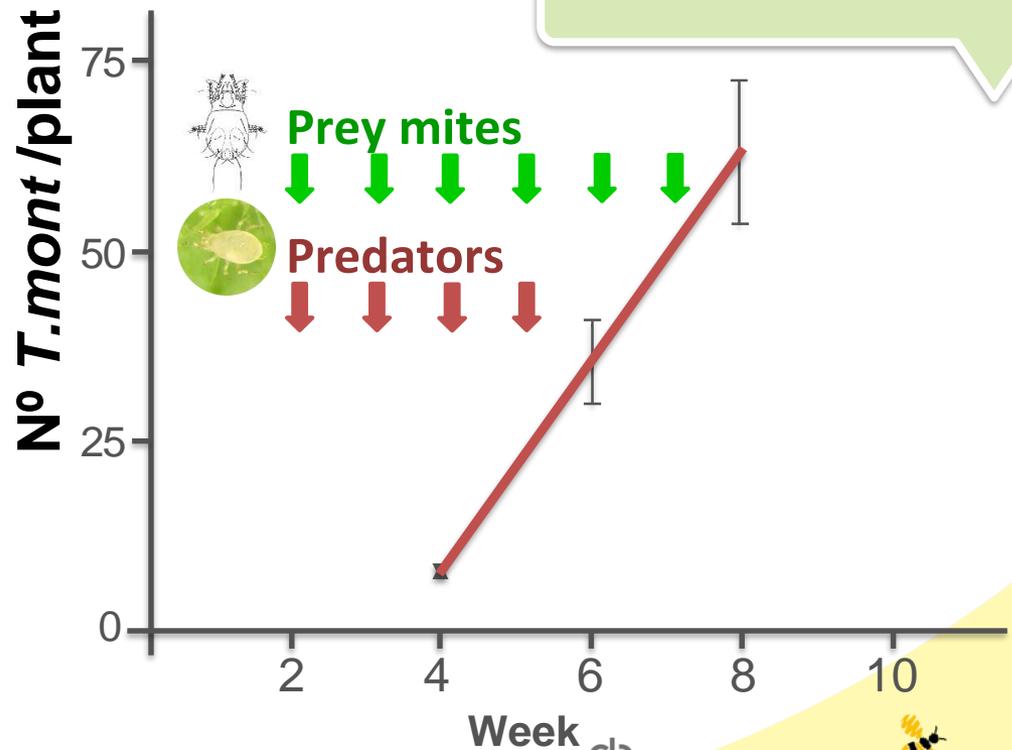
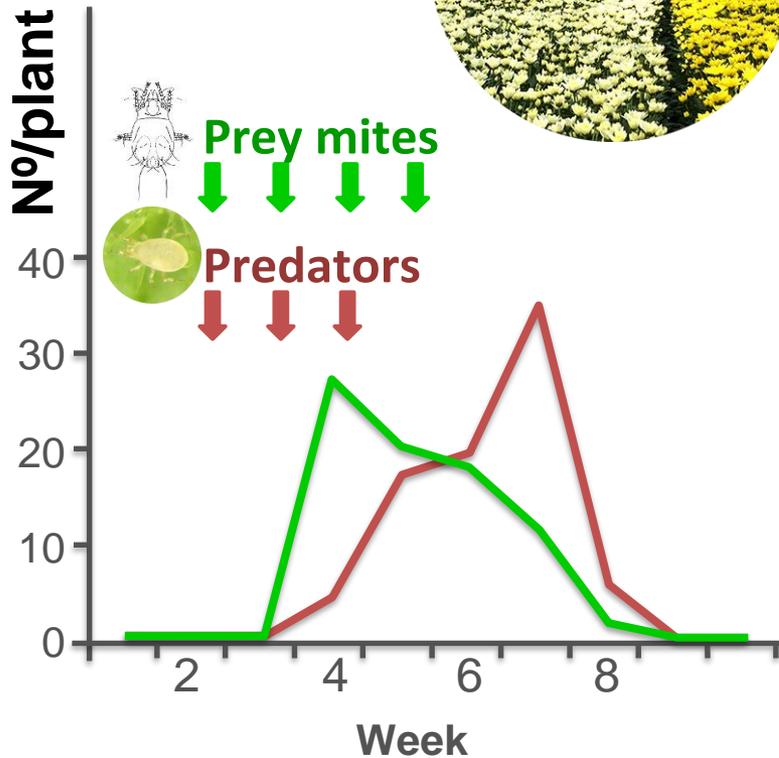
T. montdorensis + prey mites on Chrysanthemums

— *T. montdorensis*
— Prey mites

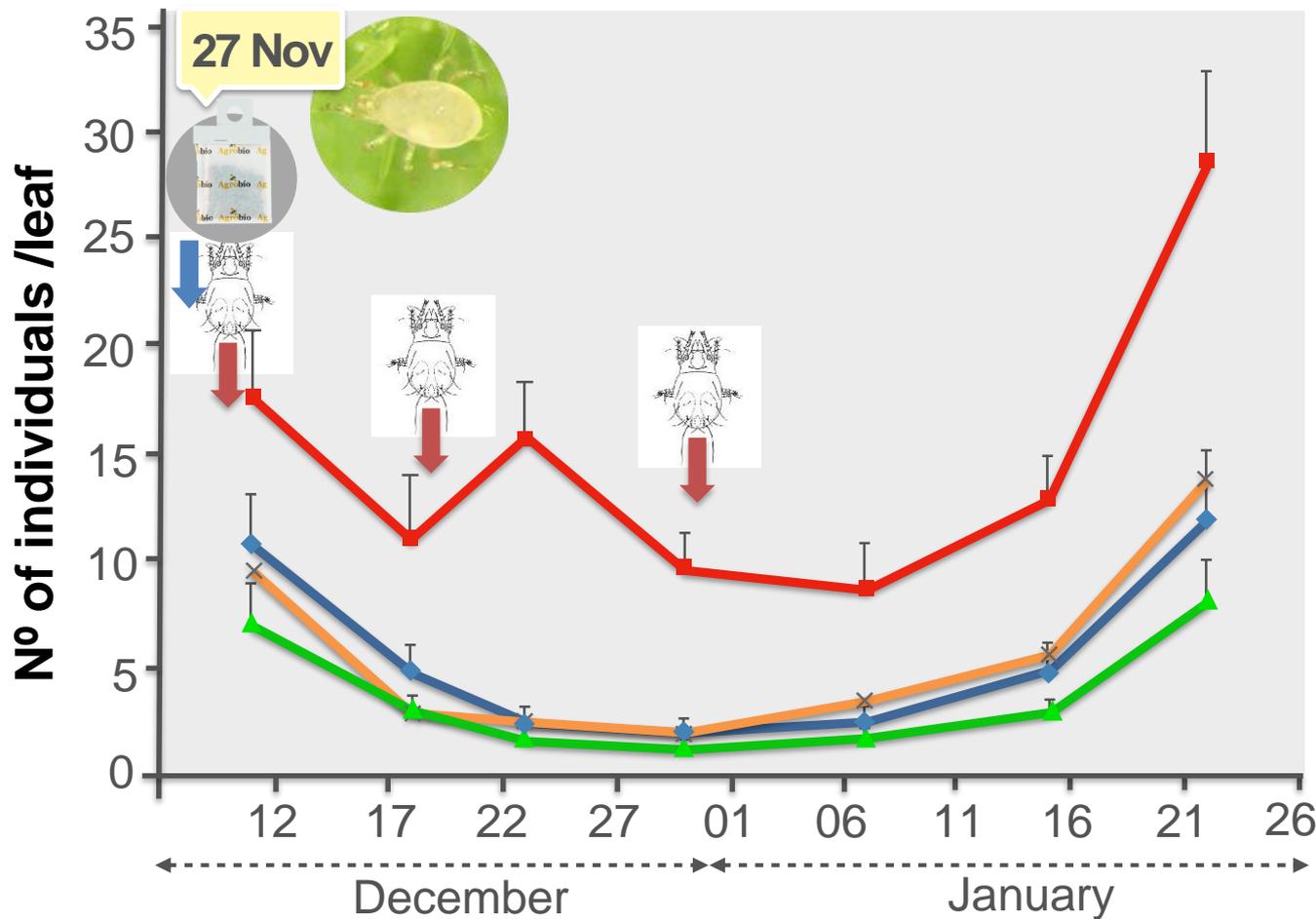


N= 22 crops (kaps)
4 growers
March-August 2016

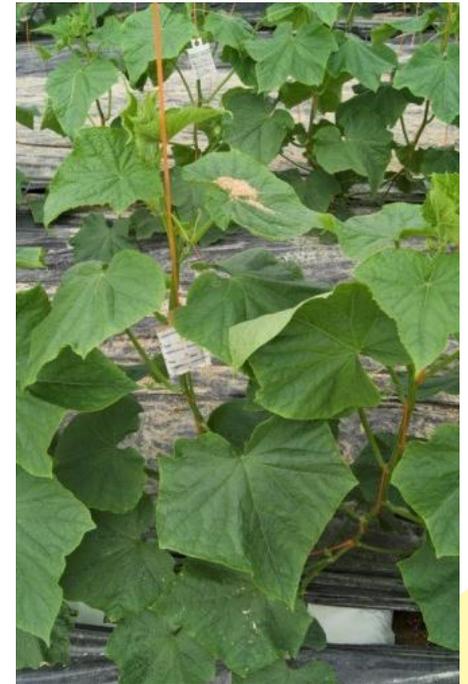
**Good control ✓
of thrips
<0.3 ind./plant**



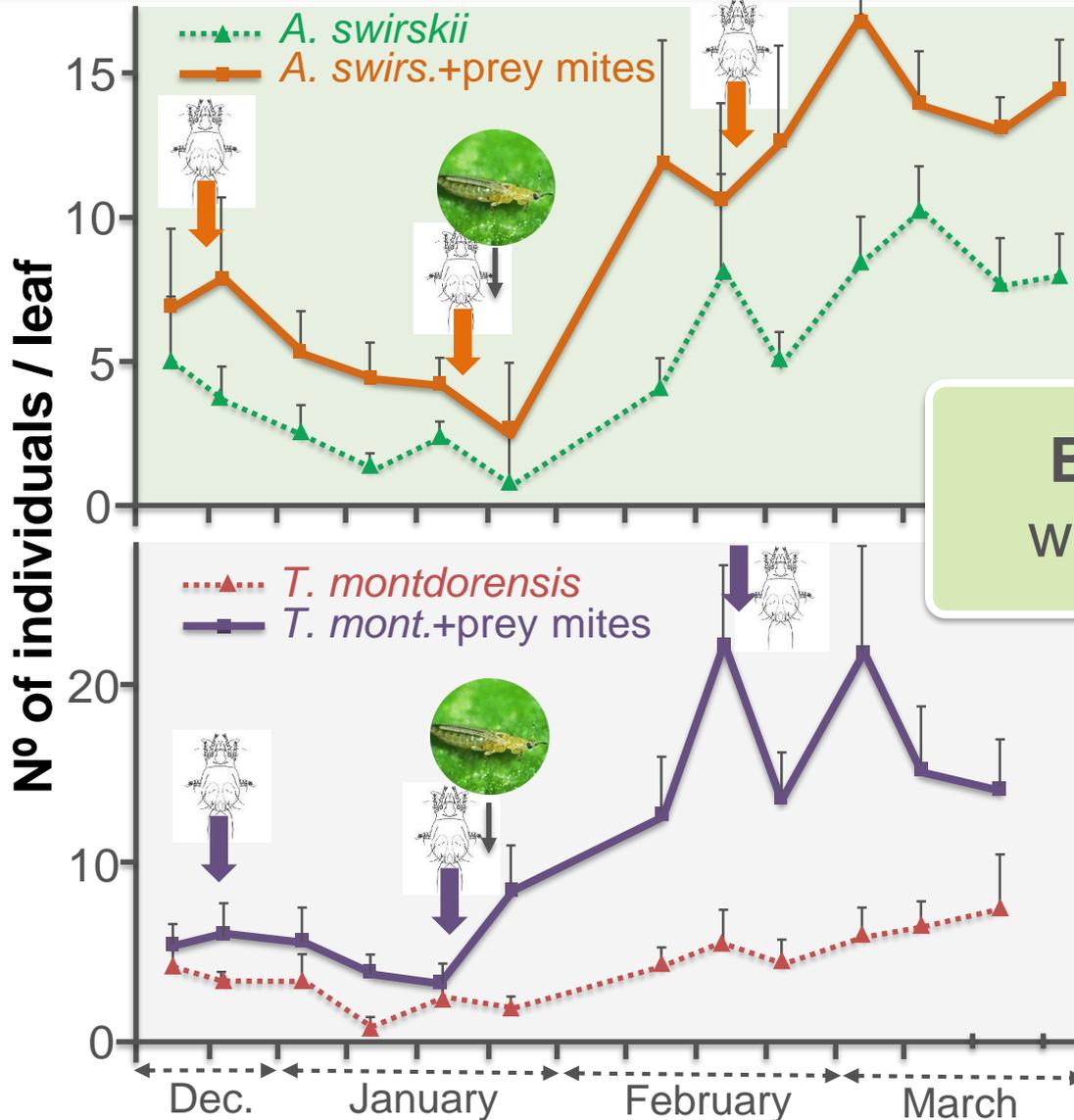
A. swirskii + prey mites on cucumbers



- Prey mites
- Twine-pollen
- Control
- Vermiculite-pollen



Control of thrips on cucumbers



Better control of thrips when prey mites added



1 sachet / 2 plants



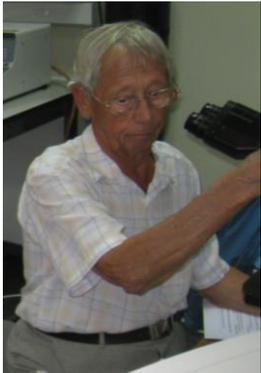
3 adults/plant

Conclusions

- Releases of **prey mites** has provided:
 - an effective biocontrol program for **chrysanthemums**
 - Development of higher predatory populations on **cucumbers**
 - ✓ control of **thrips** in winter
 - ✓ fast establishment in spring
- Similar results on other ornamentals (cut flowers & pot plants) and vegetables
 - *T. montdorensis* against **tomato russet mite**
 - *A. andersoni* + *A. swirskii* against **spider mites**
- Patent pending

· Thank you for your attention ·

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