SAMEN INVESTEREN IN DE OPEN RUIMTE

Green Works

VLM VLAAMSE LANDMAATSCHAPPIJ

FAB in the Flemish region: lessons learned and latest promising results

Dr. Marion Liberloo

SOLABIO coördinator

Flemish Land Agency, Flanders, Belgium

Interreg Vlaanderen Nederland

Europa investeert in uw regio

Europese Unie

Europees Fonds voor Regionale Ontwikkeling

solabio

Grenzeloze biodiversiteit

Summary

- Main conclusions of conference ‘Green works’
- Conclusions, recommendations & points of discussion of FAB related workshops during ‘Green works’
  - Farmers: obvious partners for biodiversity or not?
  - Paying for biodiversity?
  - Functional agro biodiversity: the future of our agriculture?
    - Example from Flanders: natural pest control
  - Soil biodiversity: the key for more biodiversity on farmland
    - Example from Flanders: the importance of field margins for soil fauna

Main conclusions of conference 'Green works'

12-13th October 2010, Bruges

Developing open space in peri-urban areas,

valuing green investments,

with a focus on biodiversity

Green Works

Main conclusions of conference 'Green works'

12-13th October 2010, Bruges

- Biodiversity is **global**: **share** experience!
- Impact of participation of **local people** is underestimated, people need to own their local environment, avoid top down decision making
- Communicate to non believers in a **simple** language
- Demonstrate **public money** is paying for **public goods**: quantify ecosystem services
- More **private sector** investments are needed

Green Works

Farmers obvious partners for biodiversity or not?

Bart Schoukens, Boerenbond

Agrobiodiversity is a product of farming (i.e.sunken roads, skylarks, meadow birds,..),

therefore

farmers have a responsibility to safeguard biodiversity;

Society demands several public services from agriculture:

food, nature, water quality, recreation, energy, tourism,..




Farmers obvious partners for biodiversity or not?

Bart Schoukens, Boerenbond

Lack of confidence between farmers and nature organizations:

"Farmers destroy life, creating deserts…"

"Nature conservationists work against farming…"

? farming= fight against nature ?

Farmers obvious partners for biodiversity or not? Bart Schoukens, Boerenbond

Restore confidence and respect between farmers and nature conservation organizations through:

- Well thought, realistic management plans
- Plans can be imposed on or developed together with farmers
- Result depends on **motivation** farmers and **knowledge**!

How to increase motivation & knowledge farmers?

Farmers obvious partners for biodiversity or not?

Bart Schoukens, Boerenbond

Important role of **agro-environmental cooperations!**

- From individual to collective efforts
- Getting farmers motivated
- Create a positive atmosphere : constructive approach, negotiation on equal level
- Re-education and training of farmers on agri environmental management
- Improve efficiency: individual “execution” or co-operation : sharing machinery and techniques

Paying for biodiversity or not?

Prof. Geert De Snoo, Universiteit Leiden

- Paying farmers to take agro environmental measures (AEM):

no increase of intrinsic **motivation** of farmers, **no commitment**

- **Voluntary** measures contribute to **self identity**, **proud** farmers!
- Factors of success:
  - Give feedback through a farm report
  - Gather farmers in a group: stimulate discussion and exchange of knowledge, social interaction

YES

- ✓ Entrepreneurs have to **make a living**
- ✓ Temporary payments needed to **overcome costs** of conversion/adaptation to new practices
- ✓ **Compensation** of income loss
- ✓ **Incentive** to voluntary commitment
- ✓ Public goods (money) for **public services**
- ✓ If commitment by result
- ✓ Possibility to work area-based = according to a plan
- ✓ Way to **draw attention** in the whole sector = coincide with 'traditional' culture

NO

- ✓ On a **voluntary** base
- ✓ Need to be an **awareness** about alternative options
- ✓ Farmers have to 'believe' in it –or else there is **no commitment**
- ✓ No **long-term** involvement **nor effect** when farmers decide to stop **after contract**
- ✓ No internalization of fundamental values = no way to sustainable 'behavior' entrepreneurship
- ✓ Introduce **inequality** between farmers
- ✓ **Market regulation principle** (demand on food?)
- ✓ Commitment by **legislation** (control!)

Paying = necessary for large involvements of farmers

BUT

"We should not see farmers as homo economicus!"

Governments should invest in:

- Increasing involvement of farmers in **decision making**
- Organizing farmers in **cooperations**: social interaction as a tool to increase motivation
- Defining biodiversity **goals** for a **wider area**
- Introducing biodiversity in the **education** of farmers
- Raising **public awareness**
- Behavioral aspects of farmers (motivation, commitment)
- **Personal assistance** to the farmer + feedback (report?)
- **Positive communication**

Functional agro biodiversity, the future of our agriculture? Paul van Rijn, University Amsterdam

Flowers for farming: natural pest control

Natural enemies have **very specific needs**: availability nectar, pollen, timing, distance to the field.

There is **no such golden mixture** serving all purposes

Composition seed mixture is very important: **native seeds**!

FAB only works when **pesticide use is minimized**

Functional agro biodiversity, the future of our agriculture? Paul van Rijn, University Amsterdam

Current AEM: buffer strips are not divers enough: towards multifunctional margins??

multiple functions ⟺ functionality

Is FAB a basic service of agriculture : included in **cross compliance** (pollination!, natural pest control)

or should FAB be paid for as an agro environmental measure serving **public goods**?

FAB forms a part of **green infrastructure**, and is example of **multifunctional land use**

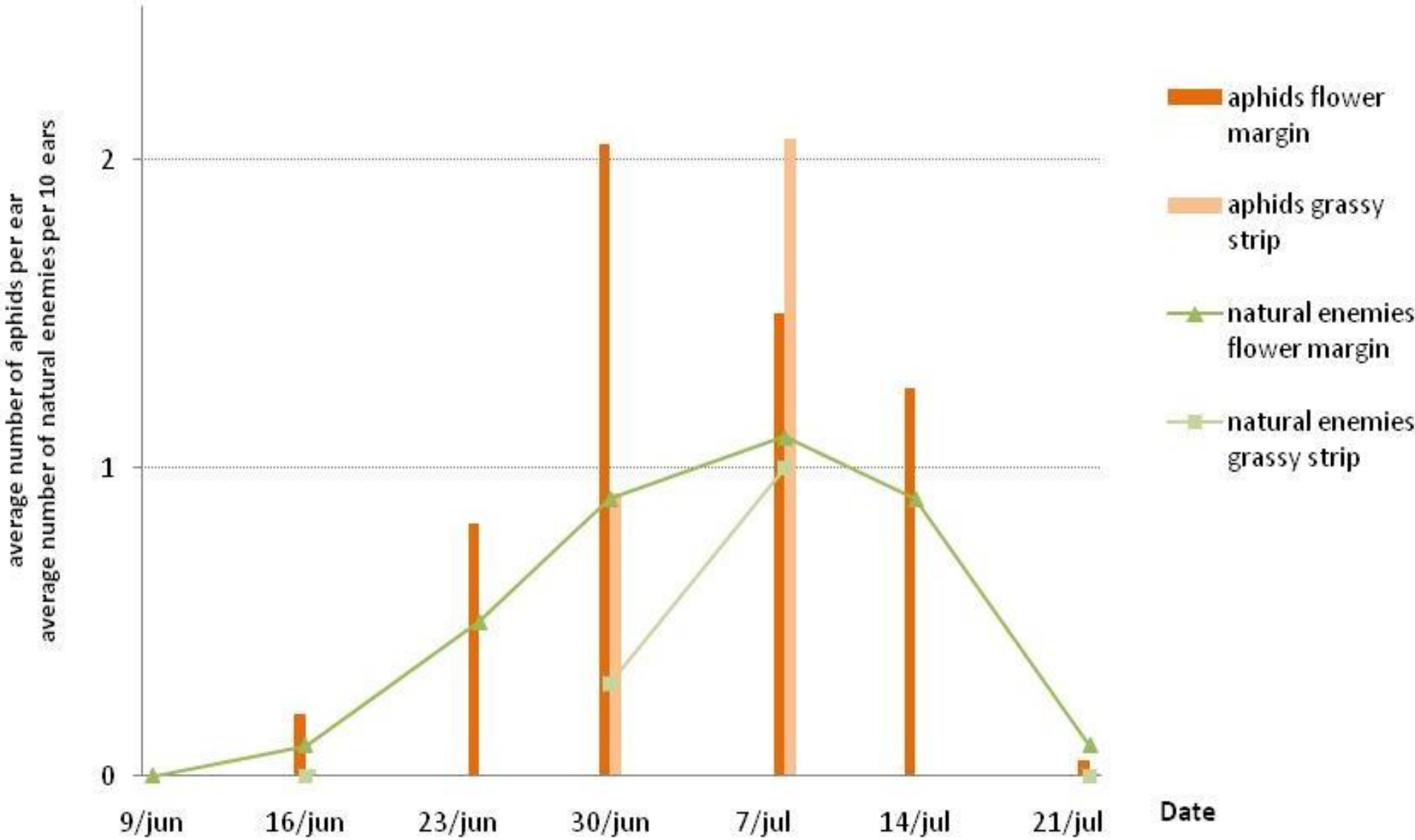
Make FAB visible: through **regional branding**

Example from Flanders: natural pest control

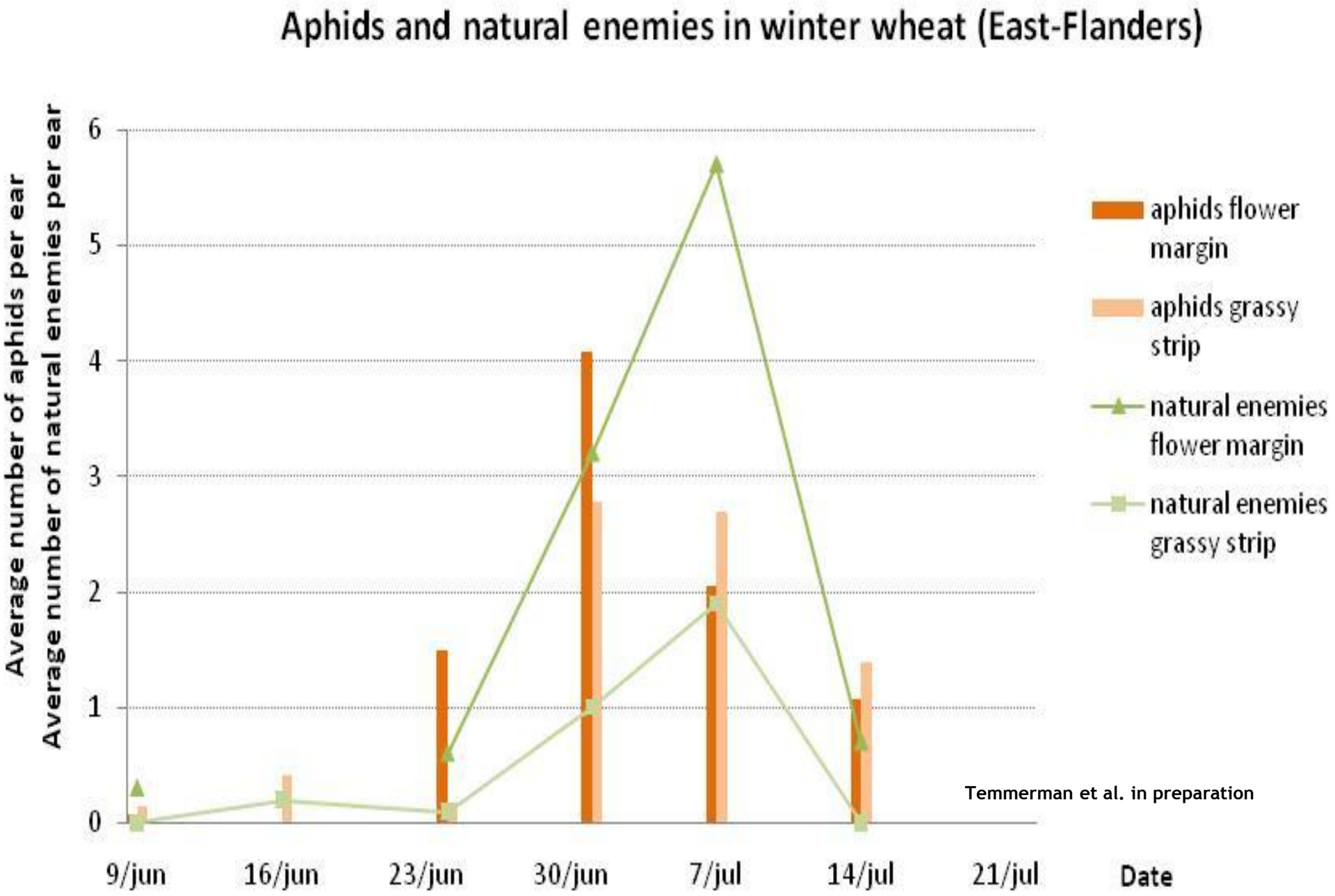
Effect of **flower** and **grass** field margins on flying insect population (yellow combi-traps) in the field margins and at different distances from the field edge

Effect of natural enemies on plague densities in crop: scouting

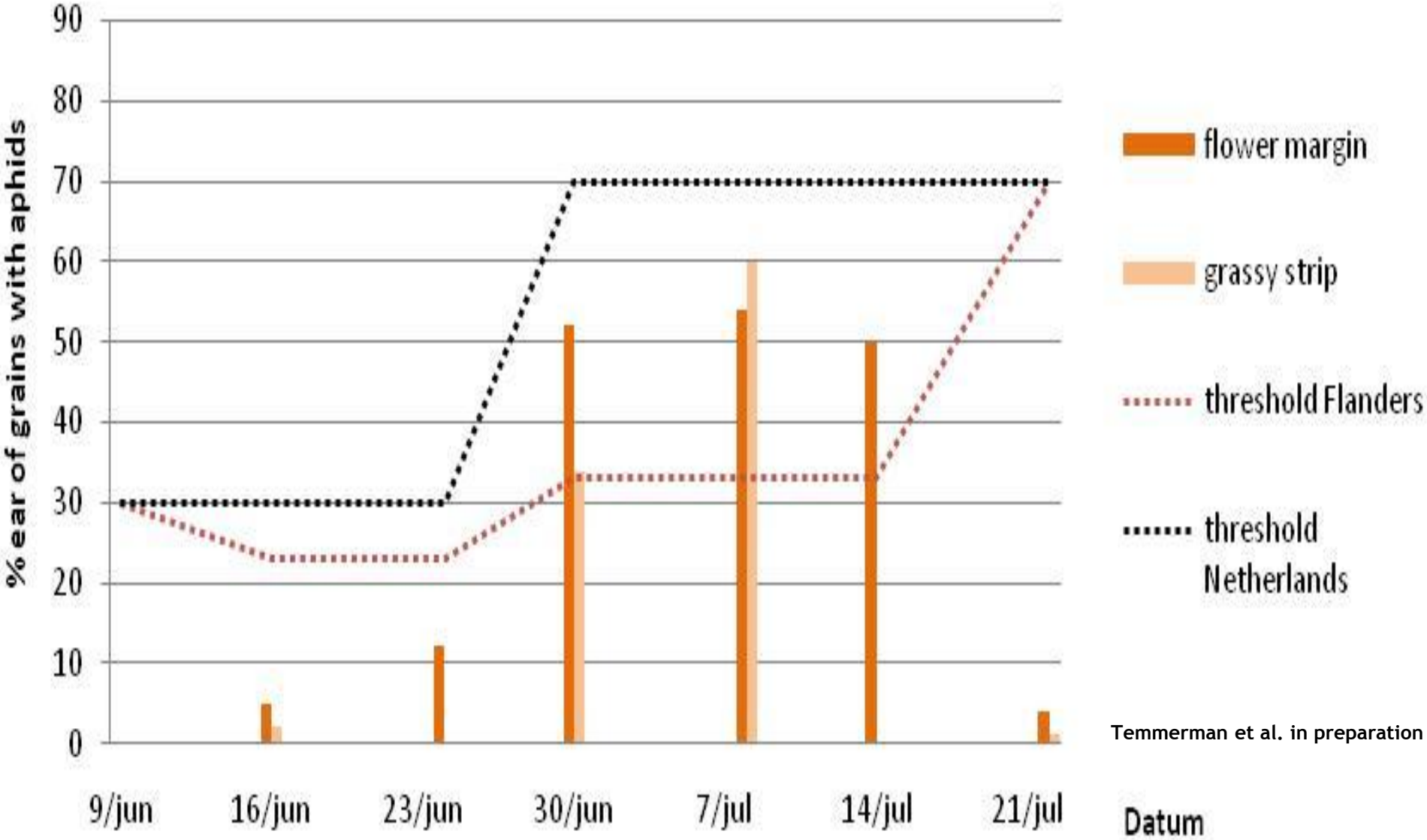
Aphids and natural enemies in winter wheat (West-Flanders)



Temmerman et al. in preparation


Aphids and natural enemies in winter wheat (East-Flanders)
Average number of aphids per ear
Average number of natural enemies per ear
6
5
4
3
2
1
0
9/jun
16/jun
23/jun
30/jun
7/jul
14/jul
21/jul
Date
aphids flower margin
aphids grassy strip
natural enemies flower margin
natural enemies grassy strip
Temmerman et al. in preparation

Aphid pressure in winter wheat in West Flanders



Temmerman et al. in preparation

Soil biodiversity: the key for more biodiversity on farmland, dr. Mirjam Pulleman, Universiteit Wageningen

Soil biodiversity: the key for more biodiversity on farmland, dr. Mirjam Pulleman, Universiteit Wageningen

Soil biodiversity should be **a priority for European union policy**, as it provides multiple services:

- a healthy, living soil ensures a **sustainable food production**
  - soil structure /compaction: role of soil biota!
  - organic material
  - herbicides, pesticides: natural 'army' present in soil is vulnerable
- flooding – **water storage** function
- **carbon sequestration**

Soil biodiversity: the key for more biodiversity on farmland, dr. Mirjam Pulleman, Universiteit Wageningen

- **nutrient fixation**
- **control erosion**
- function of soil for the **aboveground biodiversity** (“appealing biodiversity”)
- **Plant health**, and resistance
- …

What policy measures provide most potential for conserving/restoring soil biodiversity?

Agro environmental measures should focus on the **input of biomass on an annual basis**

Example from Flanders: the importance of field margins for soil fauna

Speciescape (Wheeler, 1990)

Example from Flanders: the importance of field margins for soil fauna

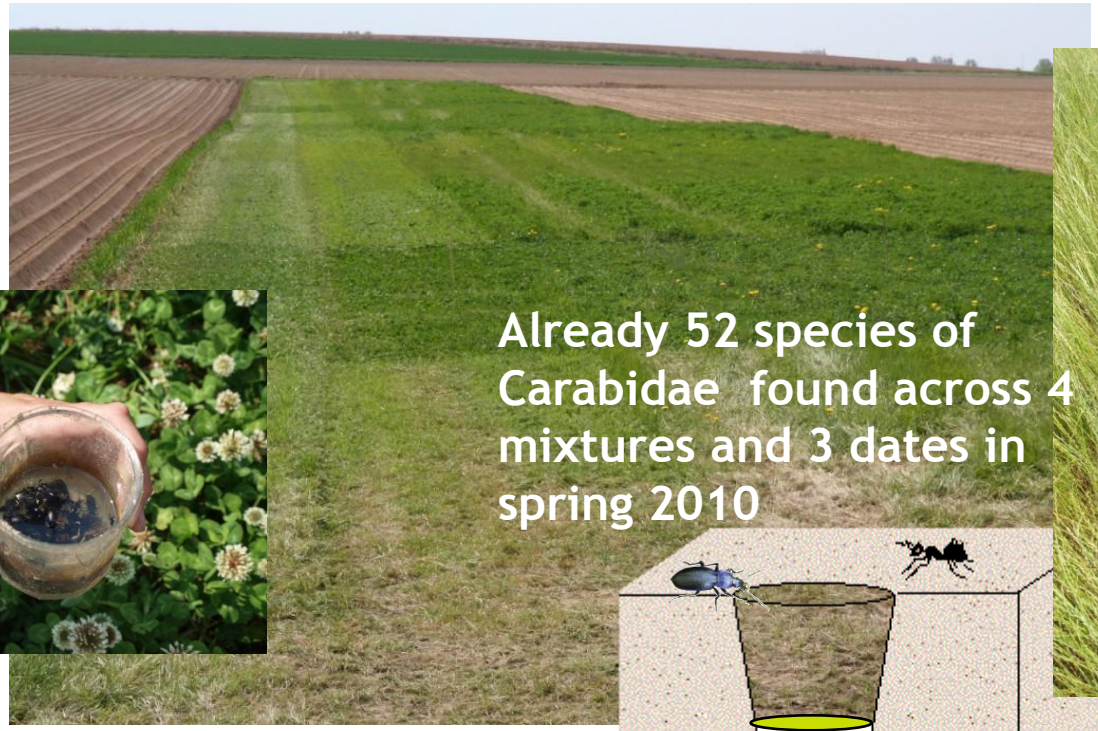
Aims study:

- **Demonstrate** to farmers the function of soil fauna for agriculture
- Investigate the **effect of field margin type** (as a habitat) on **population** of beetles (Carabidae), ants and spiders:
  - Dispersion of soil fauna from edge into the crop
  - Effect of vegetation composition and structure
  - Effect of field margin management (fased mowing)
  - Effect of land management (tillage/no tillage)
  - Community analysis
- Expand the **inventory** of farmland soil fauna – red list species

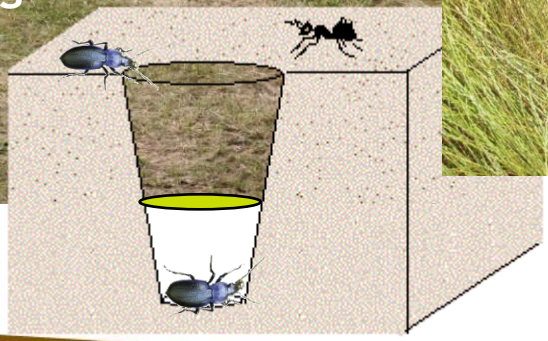
Example from Flanders: the importance of field margins for soil fauna

2010 + 2011:

7 field margins, different seed mixtures, different crops, are monitored every 2 weeks, from april-july and september-november using pot falls



Already 52 species of Carabidae found across 4 mixtures and 3 dates in spring 2010



In collaboration with Eugène Stassen (determinations) and KBIN

Carabidae: top predators of the soil & ecological indicators

polyphagous predators and/or scavengers

Carabidae: ecologic indicators & natural pest predators

Snale eaters

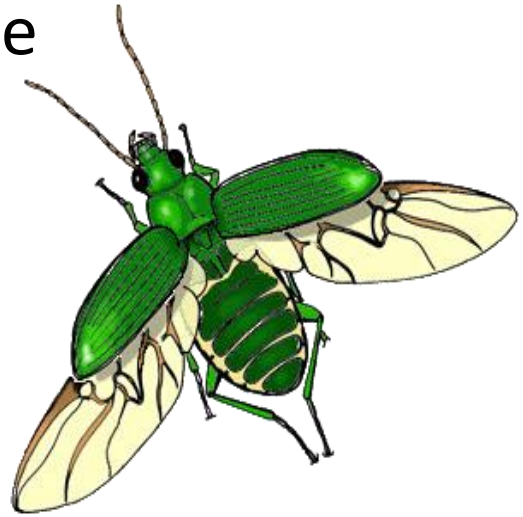
Licinus depressus cuts open snale shell with its jaws like a can opener

Snale beetle *(Cychrus sp.)* with narrow head to feed on snales

Carabidae: top predators of the soil & ecological indicators

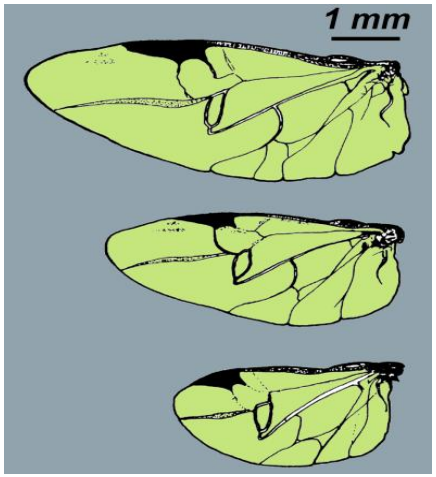
Carabidae help fight against pests and are indicators of environmental quality:

- species composition, community size and flight ability are indicators of habitat type, quality size and age

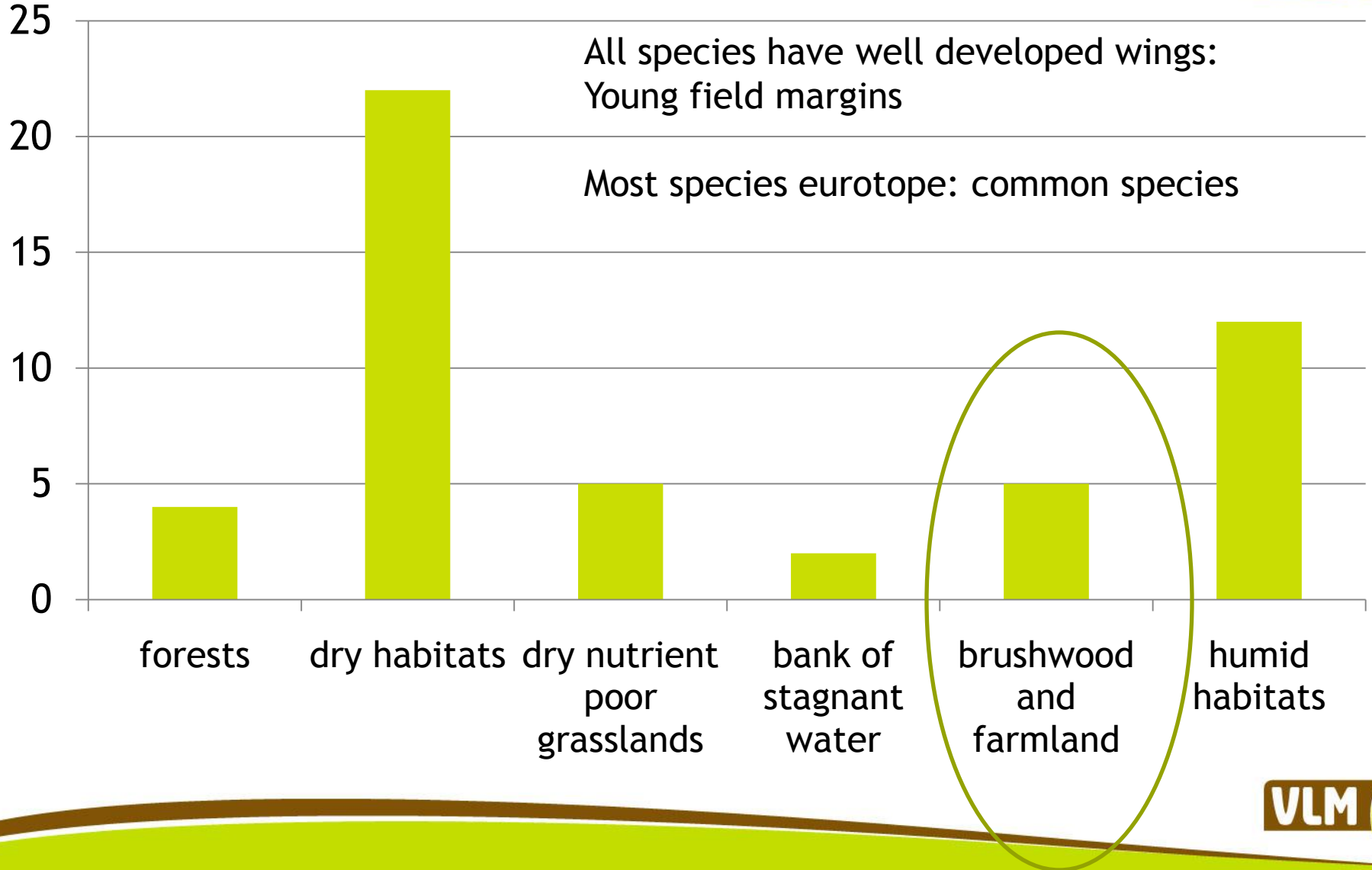


Flying species/indivuals colonise newly formed habitats

Wing polymorphy



number of species per habitat type




Thank you!