Bumblebee pollination & Natugro in Black currant

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Sven Behr

- 1987 start Beekeeping
- 2006 certified pollination specialist / beekeeper
- 2009 start business selling bumblebees
- 2010 Start working for Koppert as a consultant

Koppert Biological Systems

World market leader

Biological crop protection

Natural pollination

Consultancy and advice

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Koppert right now

- Family company
- World-wide market leader in providing biological crop protection and natural pollination
- Delivers products to 80 countries
- Subsidiaries in 19 countries
- 800 employees worldwide

Activities

- Biological crop protection
- Natural pollination
- Consultancy and Advice

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Koppert's mission

"To be the most preferred partner in developing and marketing pollination systems and integrated pest management for protected and high value crops, by being a reliable provider of innovative, effective and top-quality solutions."

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In other words

We can assist growers:

1. To increase yield

2. To improve the quality of your crop

3. To work in a sustainable manner (people, planet, profit)

4. To increase your profit!

Healthy crops for a healthy future

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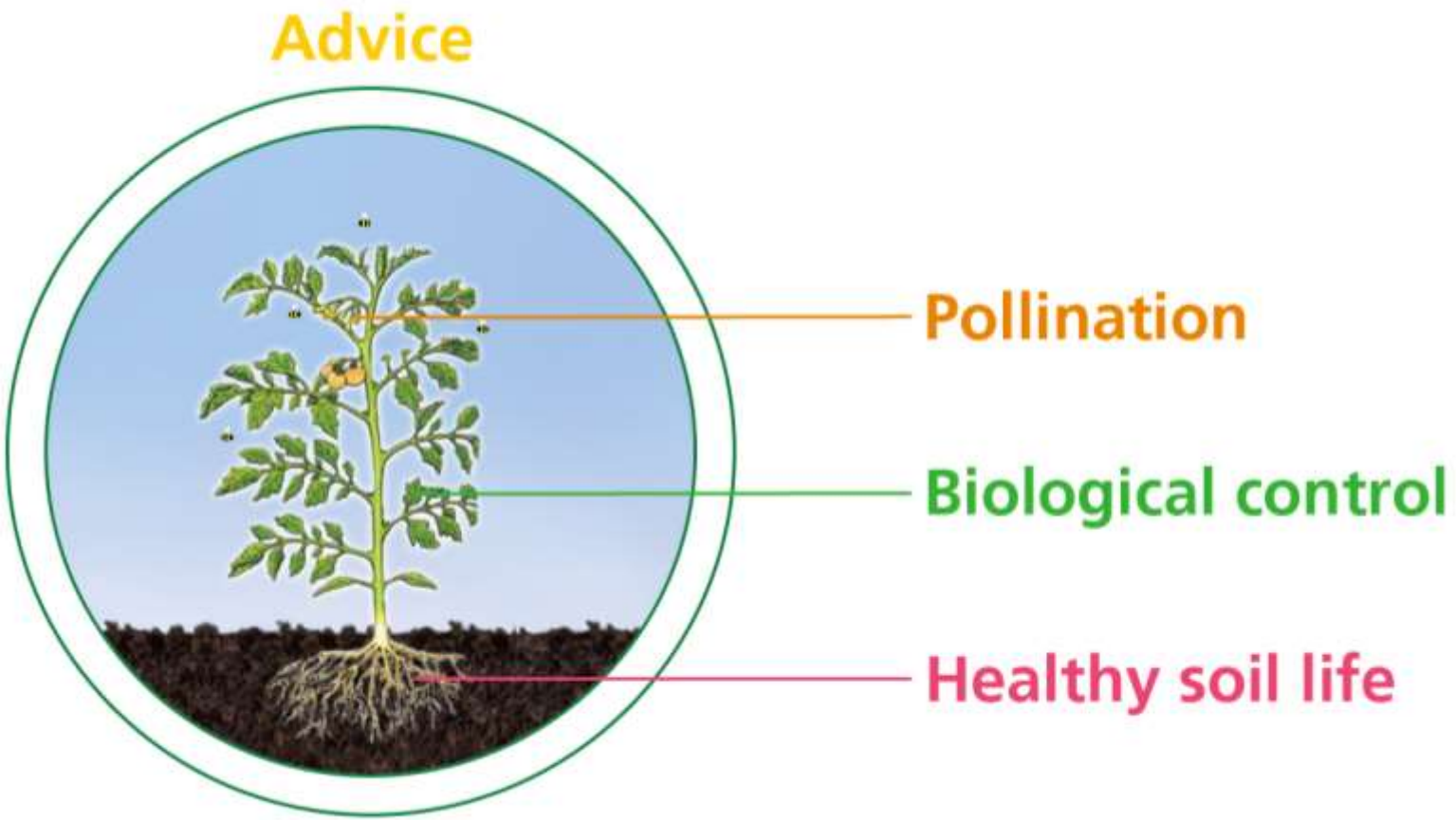
Natural plant vitality



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Black currant

Main problems → Pollination and fruit drop

Bumblebees experiences in Germany, Poland, Netherlands, United Kingdom

Outcomes:

- high bumblebee activity in crop
- Bumblebee remain attracted to crop
- More fruit set, fruit size, bigger total harvest and early ripening

Points of attention → Need for scientific based data from real production fields.

Reason Bumblebee & Natugro trial by Koppert

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Introduction Bumblebees

Until 1989 → Honeybees most common

1989 → Discovery Bumblebees best pollinators for Tomatoes
1993 → other crops & outdoor
2000 → increasing use in more and more outdoor crops

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Bumblebee crops

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Why bumblebee pollination?

Very efficient pollinators:

- Buzz pollination
- High pollen transfer (due to size & hairs)
- High flower visitation rate
- Active from early morning till late evening
- ‘Hop through crop’

> Very good cross-pollinators!

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Why bumblebee pollination?

Active under suboptimal conditions

- with low temperatures (> 8 C)
- with poor light cloudy weather
- light rain & wind

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Why bumblebees?

Easy application

- No third party
- Pesticides: Bee Home system
- Use in successive cultivations
- Additional & next to honeybees
- Not aggressive

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Natugro concept → Improve plant vitality

- Optimizing soil micro life in the root zone
- A combination of natural products (plant and fungal based)
- Improving plant metabolism /natural disease suppression / resistance against stress
- Reducing dependence on chemicals and fertilizers

Results

➔ More vital and healthy plants

➔ Better fruit set and productions

Research question → Will Natugro support better productions in Black currant ?

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The Trial

Goals

- Improve pollination and fruit set
- Collect scientific based trials in commercial fields
- Duration of trials ➔ 2 seasons

Set up

- Three fields
- Field 1 & 2 at Heiko Danner
- Field 3 at Wolfgang Weber

Four 'Treatments'

- Natugro + Tripol (5 Tripols/ha)
- Natugro
- Tripol (5 Tripols/ha)
- 'Control'

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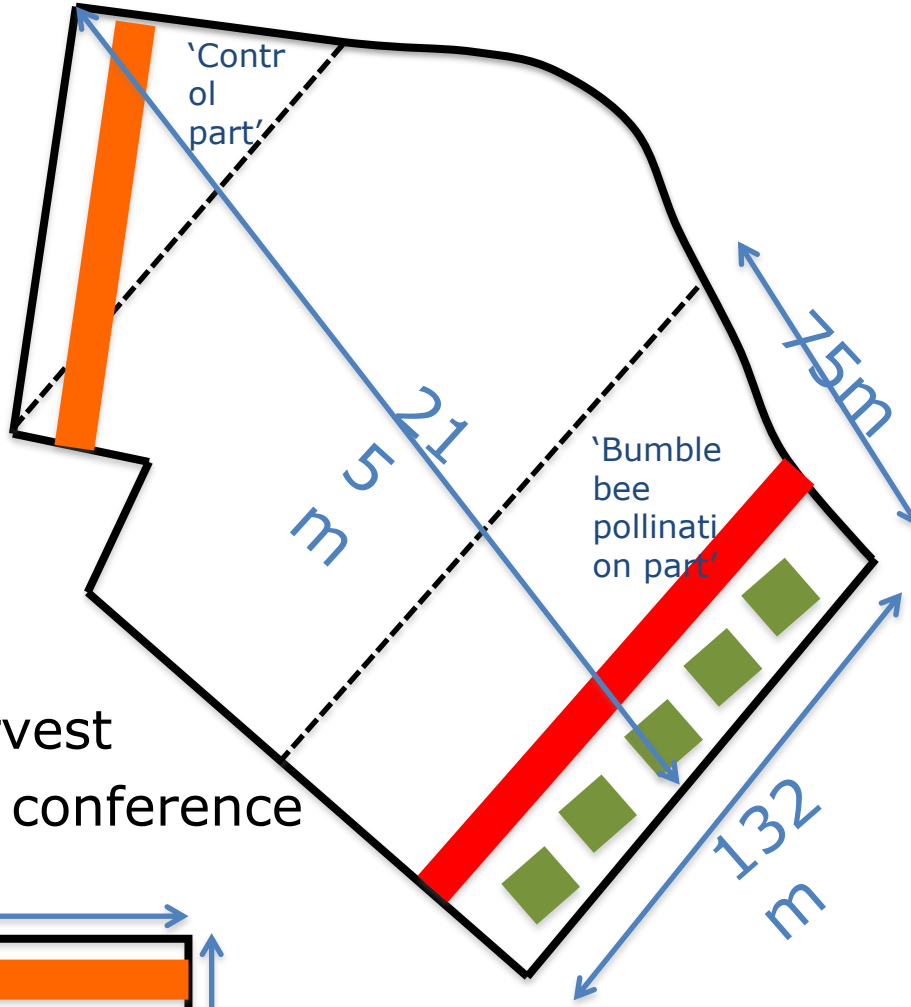
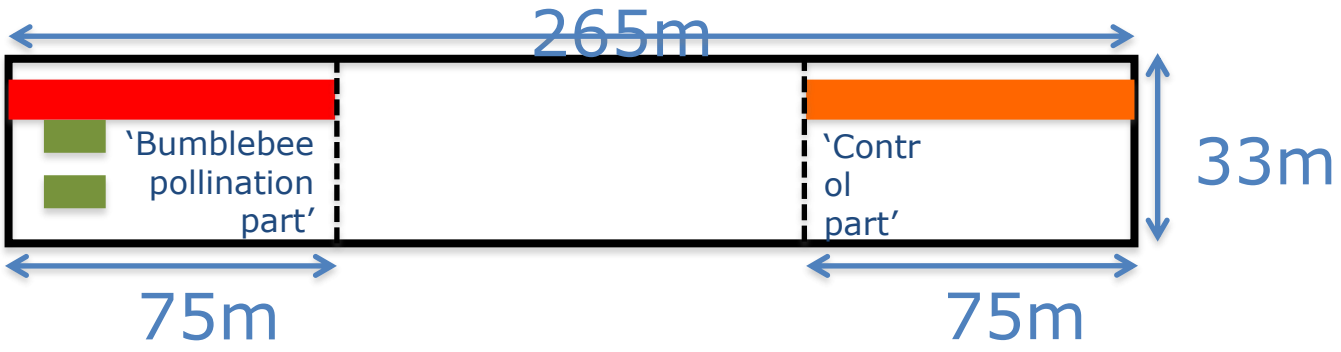
Data collection

- Bumblebee activity / Distribution
- Colony development
- Plant development
- Fruitset and weight
- Total harvest



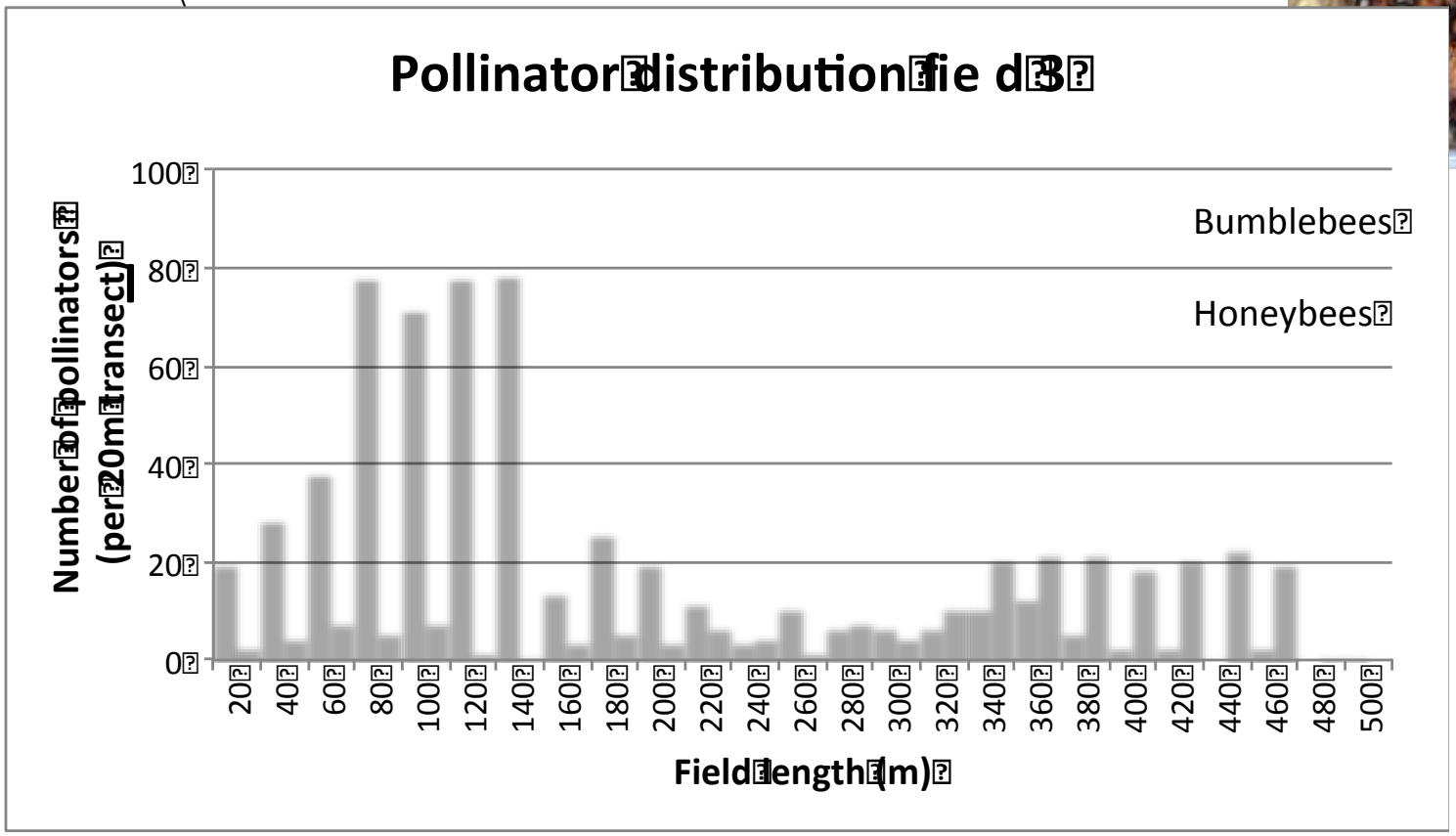
Moment of measurements:

- Final results : at harvest
- **Indicative** data collection :before conference

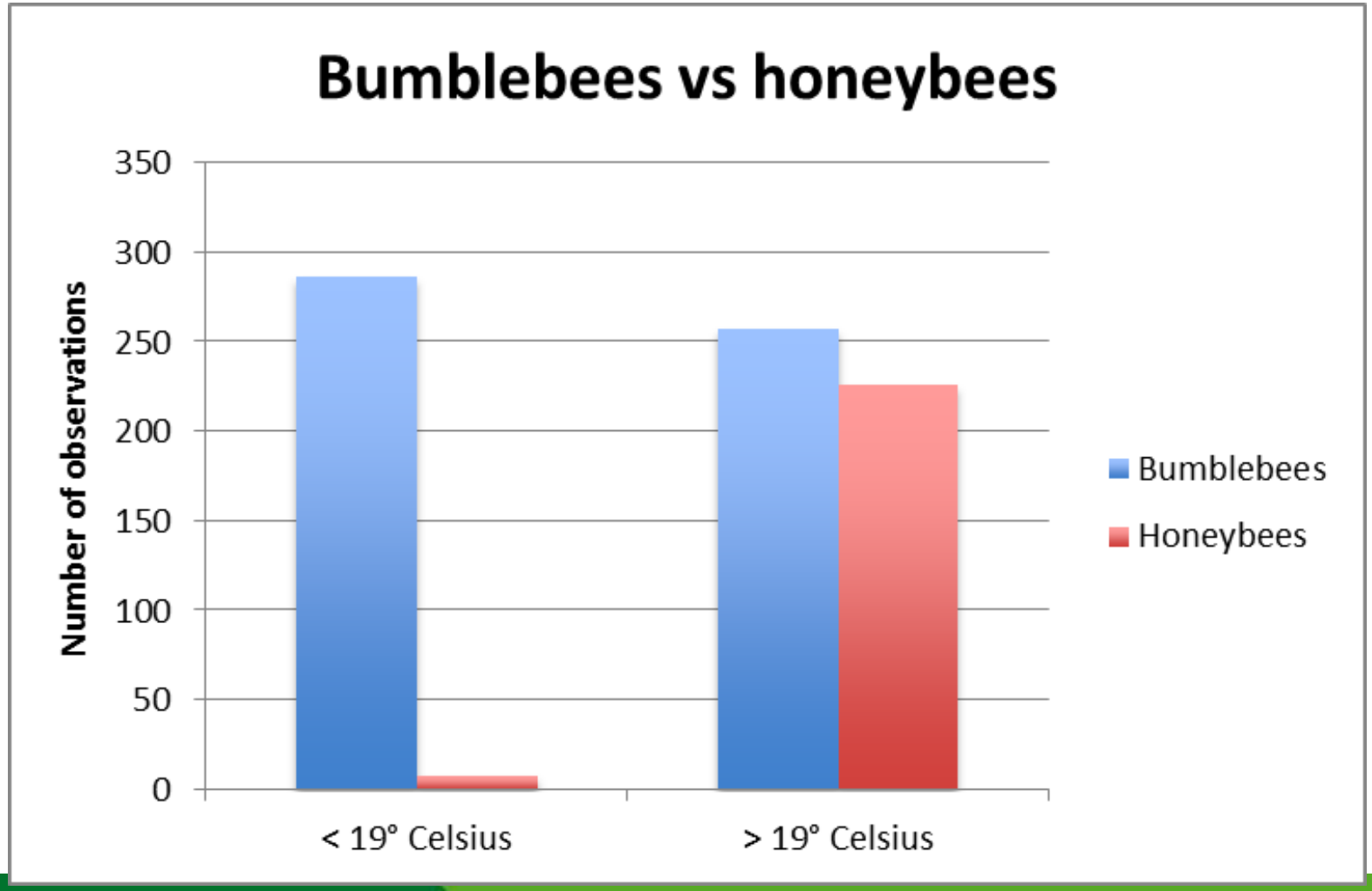


Some results

- Very good bumblebee activity
- Distribution of bumblebees



Bumblebee activity at lower temperature



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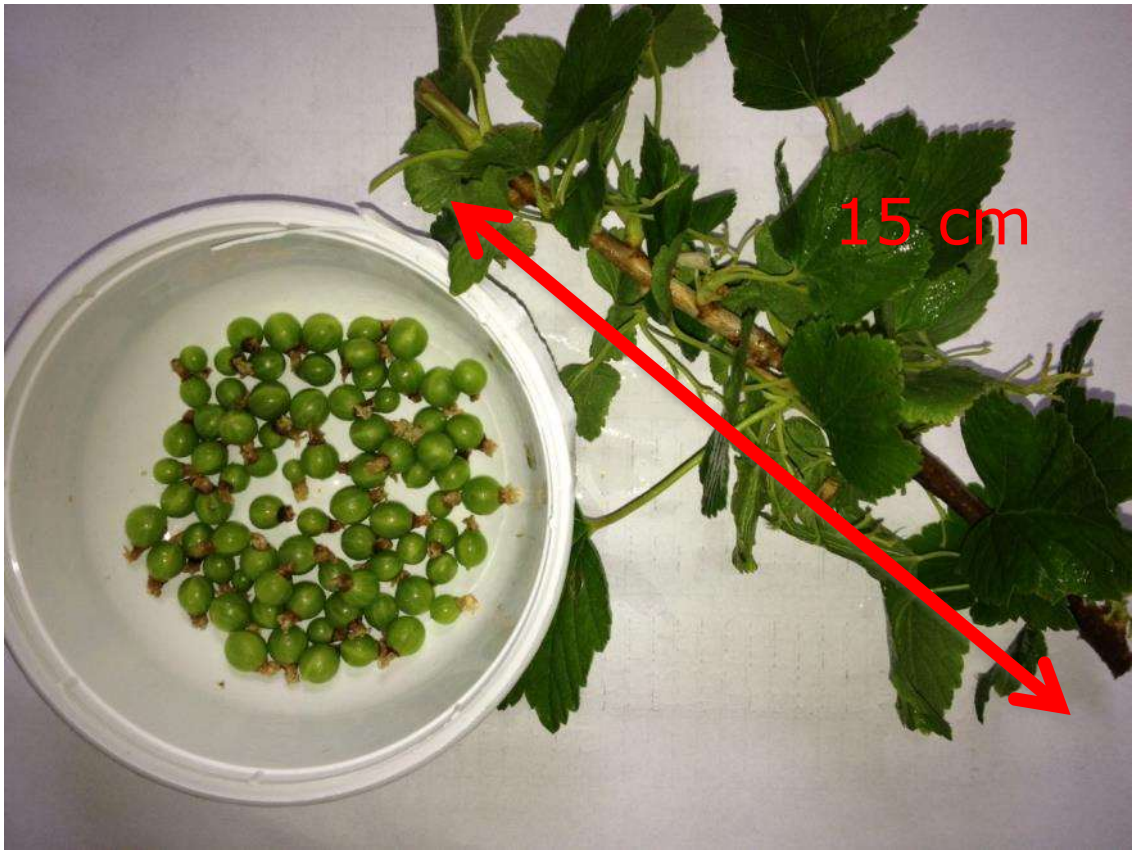
Indicative Fruit set & weight



2 field (1 + 3)
20 (1) – 25 (3) branches at random in both test + control

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Indication Fruit set and weight

Fruitset Bumblebees vs Control

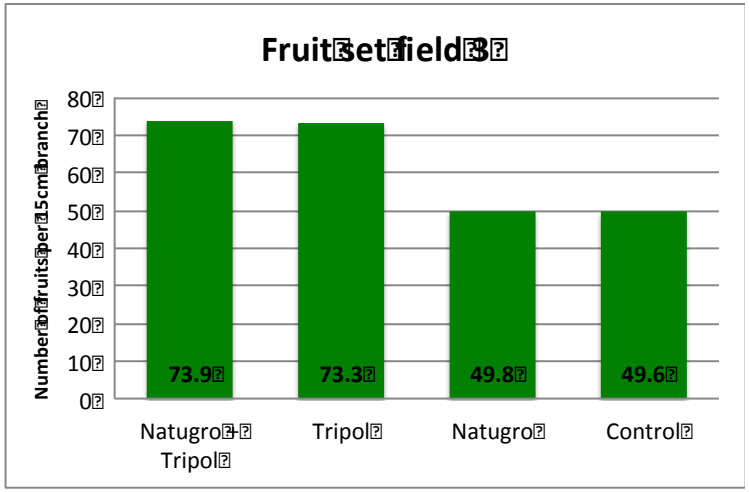
- Measurements in two fields
- 14% - 49% more Fruits

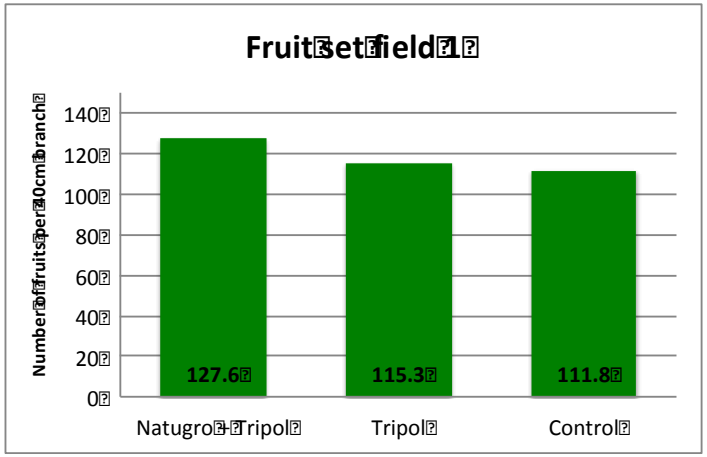
Total fruit weight Bumblebees vs Control

- 35 % - 49 %

Natugro

- Indications for better plant development.
- too early for final judgement





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Conclusions

- Bumblebees very active in Black currants
- Very strong indications for better fruitset and total fruitweight
- Effect of Natugro to be visualized at harvest and next year.
- Final data to be collected at harvest.
- Evaluation + update stakeholders
- Continue next year

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Questions, want to know more ?

Come and see us in the field !