



# Biocontrol as a business

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4<sup>th</sup> Symposium: Feeding  
Europe by reducing  
pesticide dependency,  
European Parliament,  
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## KOPPERT BIOLOGICAL SYSTEMS

- Founded in 1967
- 1100 employees worldwide
- Family company

Koppert started with a beneficial mite to control spider mite infestation

Today a more holistic approach is used in both horticulture and agriculture





## 1967

- Jan Koppert
- Vegetable grower
- Chemical control
- Decreasing efficacy
- Resistance
- Need for alternatives
- The first natural enemy to combat spider mite infestation
- Positive results and effects



- Since then, the search for biological solutions has expanded
- Today Koppert is the market leader in biological crop protection and natural pollination
- Koppert's solutions are successfully applied in more than 90 countries





# MILESTONES



**1967**  
Founder Jan Koppert



**1972**  
Introduction  
Encarsia formosa



**1988**  
Start production  
bumblebees



**1993 - 1997**  
Start of Koppert  
Canada, USA &  
Mexico



**2005**  
Breakthrough in  
ornamentals



**2007**  
Breakthrough  
horticulture in Spain



**2010**  
First phase new  
Head Office



**2011**  
Introduction  
NatuGro



**2012**  
Acquisition of  
Itaforte, Brasil



**2013**  
Start of  
Koppert India



**2014**  
EY 2014





### KOPPERT'S CORE DISCIPLINES:

- Research and development
- Worldwide production and distribution of solutions
  - Pest & disease Control
  - Natural Pollination
  - Application techniques & monitoring
  - Resilient Growth with NatuGro
  - Seed treatment
- Know-how and knowledge sharing



## EACH CROP AND PEST HAS SPECIFIC CHARACTERISTICS

- Varies greatly in terms of cultivation, region and season

## SUCCESSFULLY PRODUCING NATURAL ENEMIES

- Parasitic wasps, predatory insects and mites
- Has helped growers restore natural balance in crops for decades
- Our worldwide knowledge and individual advice are the key to this success





## ANTAGONISTIC MICRO-ORGANISMS

- Fungi and bacteria for control of a wide range of soil diseases and nematodes
- Application in many crops
- Early in the crop as a preventive measure, easy to apply on seed or in propagation phase
- A healthy start provides a healthy plant





## KOPPERT'S PEST MANAGEMENT SOLUTIONS

- Widely used throughout the horticultural industry
- Dramatically reducing the use of agrochemicals over the years
- The greatest impact has been in tomato cultivation
- The use of crop protection chemicals has been decreased by 95%



## WHY POLLINATION BY NATUPOL?

- Natural pollination results in considerably higher yield
- Improves the quality and shelf life of both seeds and fruit
- Growers have tried to improve pollination manually in the past. Natupol has reduced labour costs for the grower







## NATUPOL POLLINATION SOLUTION SINCE 1988

- Introducing bumblebees for commercial pollination
- Producing millions of bumblebees annually for a variety of applications
- Helping growers around the world to cultivate their crops successfully

## NATUGRO, NATURAL GROWING

### A SYSTEM THAT CONSISTS OF:

- Beneficial micro-organisms: Fungi and Bacteria
- Biostimulants
  - Amino, humic & vulvic acids
  - Seaweed extracts, Vitamins
- Professional advice
- That benefits the crop, environment and consumers
- Creating optimal growing conditions
- Maximizing crop resilience against diseases and pests
- Reducing the use of chemical crop protection products and artificial fertilizers







## TAILOR MADE SEED COATING - PANORAMIX

- Mix of biostimulants provide the perfect start
- Improves the condition and biodiversity of the soil
- Ensures that diseases have less chance of taking hold
- Enhances the uptake of water and fertilizers
- Crops grow more rapidly and robustly and are therefore more productive
- Eventually produces entirely residue-free end products
- Suitable for crops such as maize, wheat and soya



### R&D IS THE BACKBONE OF KOPPERT'S ACTIVITIES:

- Ongoing drive to discover and utilize natural principles
- R&D turns this knowledge into practical applications
- Contributes to finding solutions
- Ground-breaking discoveries with regard to pollination solutions
- Koppert's R&D is always looking for new solutions





## DEALERS AND GROWERS ARE SUPPORTED

- More than 300 professional consultants
- Operational advice

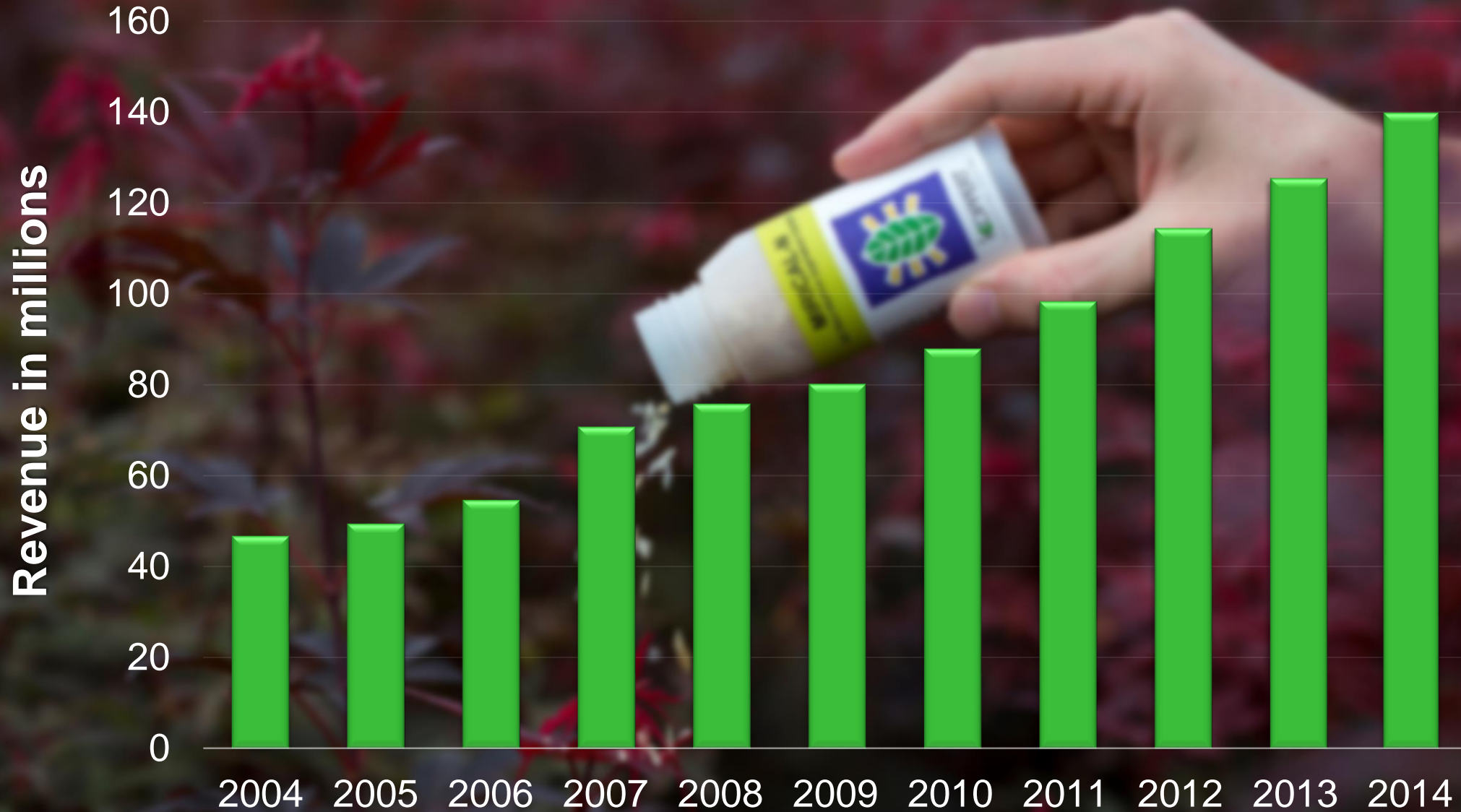
## KNOWLEDGE AVAILABLE TO A WIDER TARGET GROUP

- Works closely with universities around the world
- Offers a variety of courses

We train large groups of stakeholders in knowing and recognizing diseases and pests every year









# SUBSIDIARIES



## PRODUCTION FACILITIES IN:



- The Netherlands
- Slovak Republic > bumblebees
- Spain
- United States
- Turkey
- Mexico
- New Zealand
- South Korea



- Vegetable crops
- Ornamental crops
- Fruit crops
- Flower bulbs
- Mushrooms
- Tree nurseries
- Public green (parks, lawn trees)
- Seed crops
- Golf courses
- Cereals, soya, potatoes
- Tropical fruits
- Cattle and pig farms





# FROM PROTECTED CROPS TO FIELD CROPS



Greenhouses



Row crops

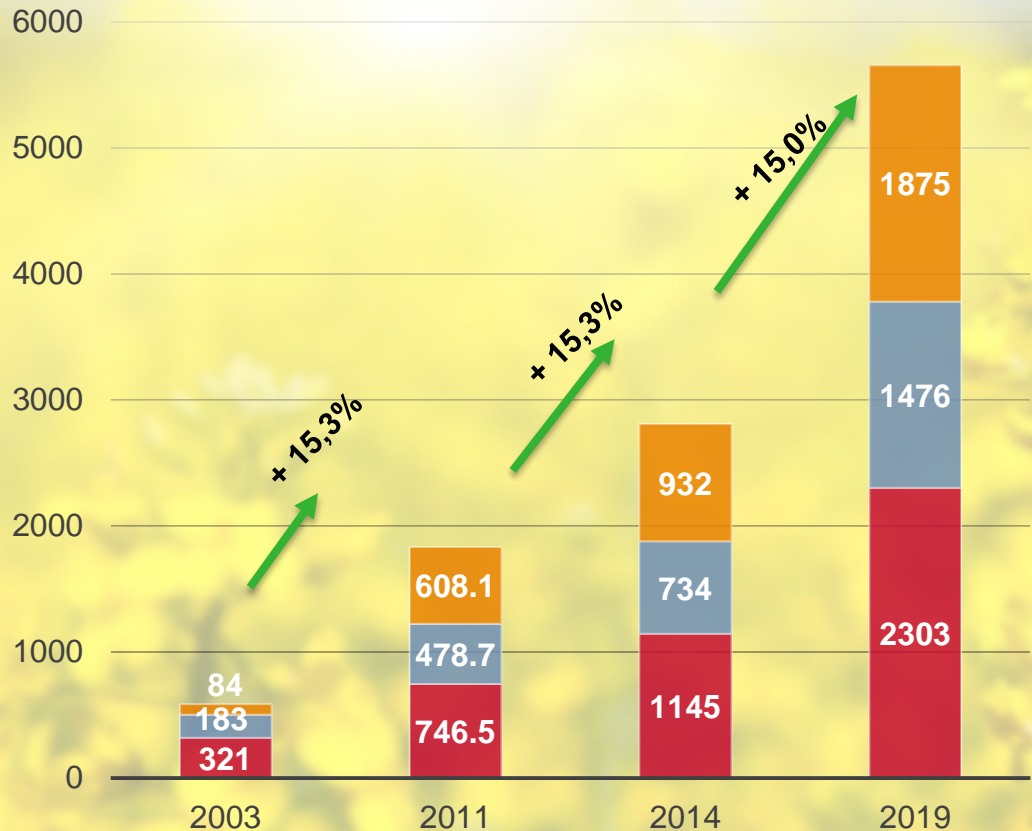




- The Market demands low residue or even residue-free produce
- Retailers and supermarkets impose non-statutory requirements on farmers
- More attention for worker safety
- Society and Legislators want less impact on public health, the environment and biodiversity
- Sustainable production: more production with less input and less impact



## Global biopesticide market 2003-2019 (USD m)



- Micro-organisms; Bacteria, Fungi, Nematodes, ....
- Macro-organisms; Insects, Mites and Pollinators
- Biochemicals; Plant growth regulators, Insect growth regulators, Organic acids, Plant Extracts, Semiochemicals, Minerals/Others

- Chemical pesticides can and will no longer be the only basis for crop protection
- Integrated Pest and Disease Management will become the standard
- As Koppert we expect that we are just at a starting point of a thriving sector





## Product development

- R & D, Registration
- High Investment
- Too long and costly registration process
- Return of Investment
- Time to market long
- Time to volume challenging



## Sustainable Use of Pesticides Directive

- Priority for non-chemical products, and IPM
- Low risk a.s. and products
- In reality: little progress in availability and adoption of biopesticides
- Innovative legislation needed for low risk PPPs

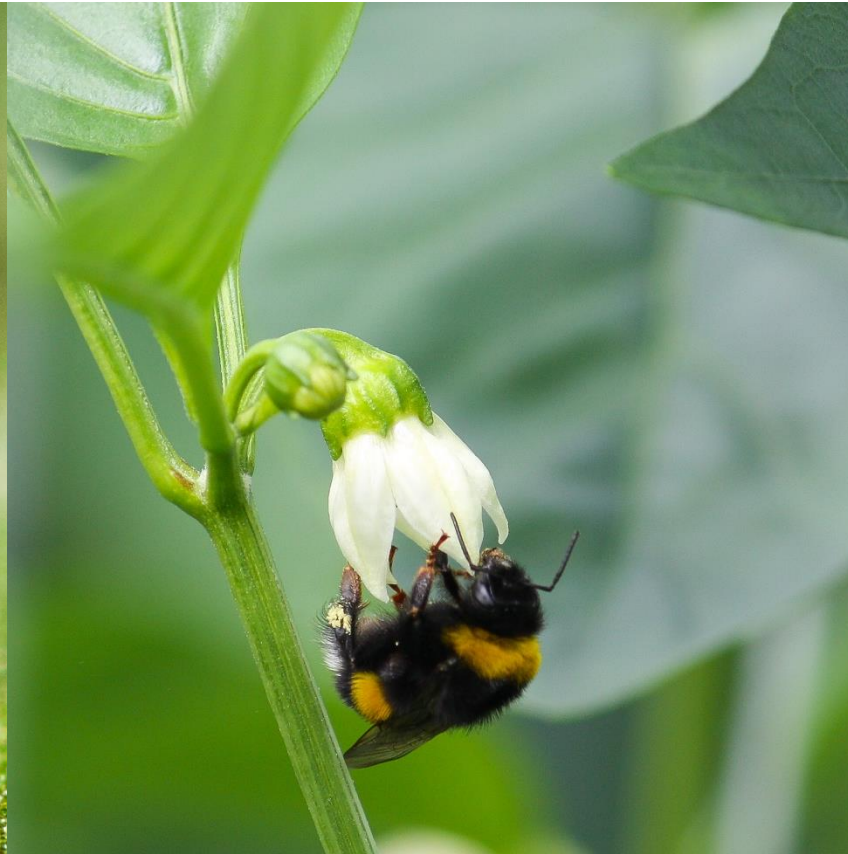






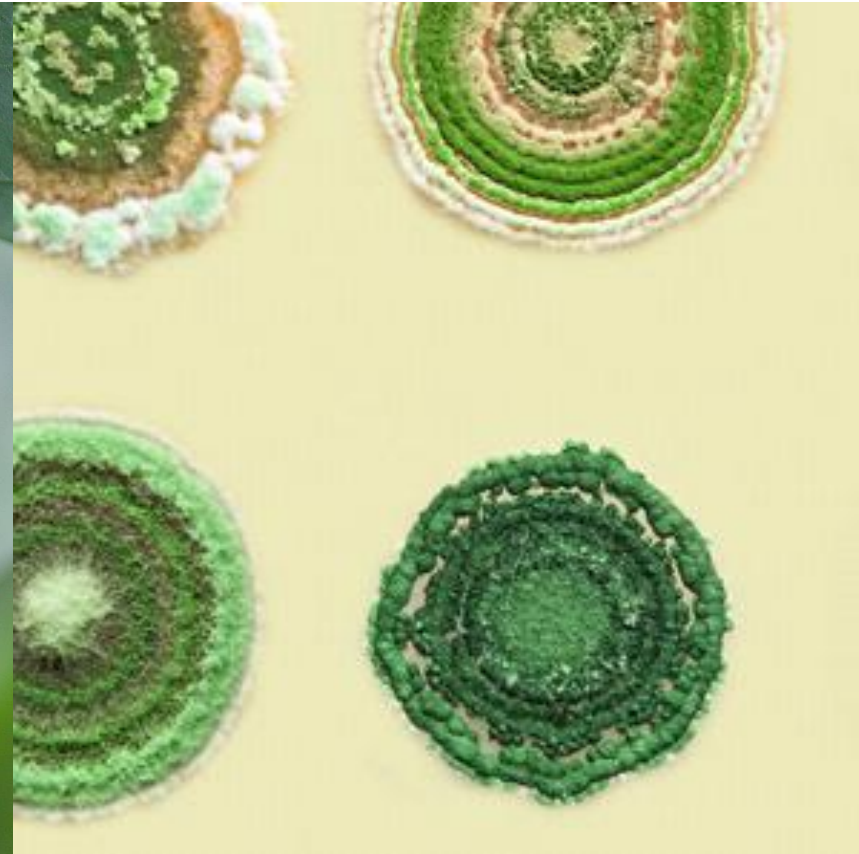
## Macrobials

Predatory mite and parasitoid:  
after almost 50 years still as  
efficient as a ever and important  
products in the market



## Pollination

Almost 30 years of world  
wide use: indoors and  
outdoors



## Microbials

15 years in use and  
opportunities unlimited





## Turning point for a better and healthier future

- Need for Innovative Legislation
- Access and Benefit Sharing
- Knowledge transfer
- Adoption of IPM





**Koppert Biological Systems  
Partners with Nature**

**Koppert Biological Systems  
contributes to better health  
of people and the planet**

**In partnership with  
nature, we make  
agriculture  
healthier, safer and  
more productive**

**Thank You for  
your interest!**