



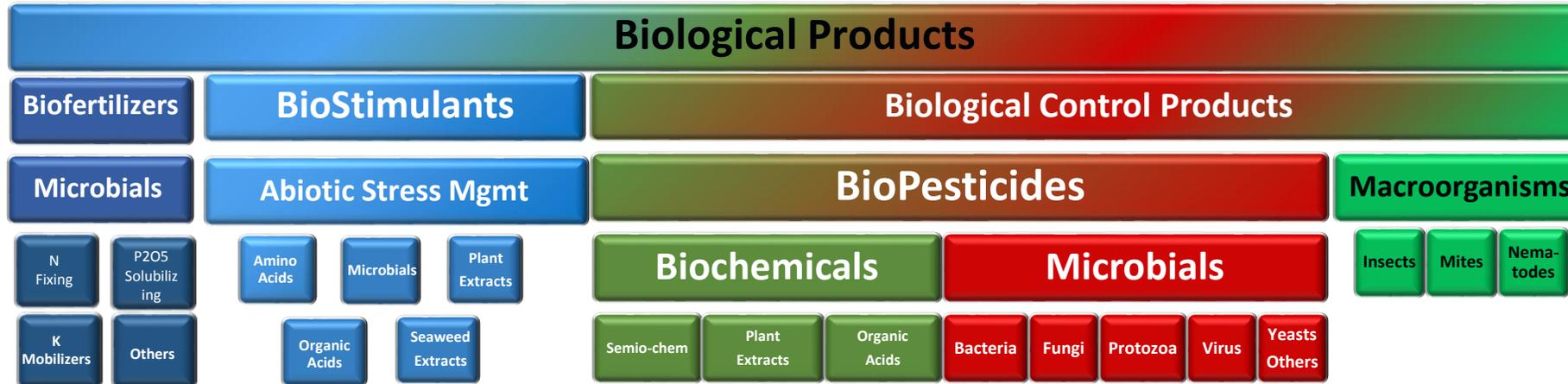
# Low-risk bioprotection products: contribution, progress and hurdles

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# BIOLOGICAL MARKET OVERVIEW

## --INTRODUCTION—PRODUCT TYPES



### Biofertilizers

- Microbials used to enhance plant nutrient uptake from soil
- Nitrogen fixing bacteria make up largest group
- Others include mobilizers of specific nutrients (zinc, sulfur) and mycorrhizal fungi
- Biofertilizers regulated under country/state fertilizer regulations

### Biostimulants

- Seaweed Extracts make up the largest segment in this group
- Microbials, primarily bacteria, often used as seed or soil treatment to aid in nutrient assimilation
- Organic acids are humic and fulvic acids used as soil amendments, formed by the microbial degradation of plant matter.
- Definition and regulation of biostimulants is still under development in most parts of the world

### BioPesticides

- Biopesticides are derived from natural materials, such as plants, bacteria and certain minerals. Biopesticides target specific pests and are inherently less toxic than synthetic pesticides.

#### Biochemicals

- Plant Extracts; Semiochemicals; Organic Acids
- Plant Extracts make up the largest segment in this group
- Semiochemicals (pheromones) has the largest actual number of products
- Largest challenge for Plant Extracts is manufacturing and consistent quality in the active ingredient(s)

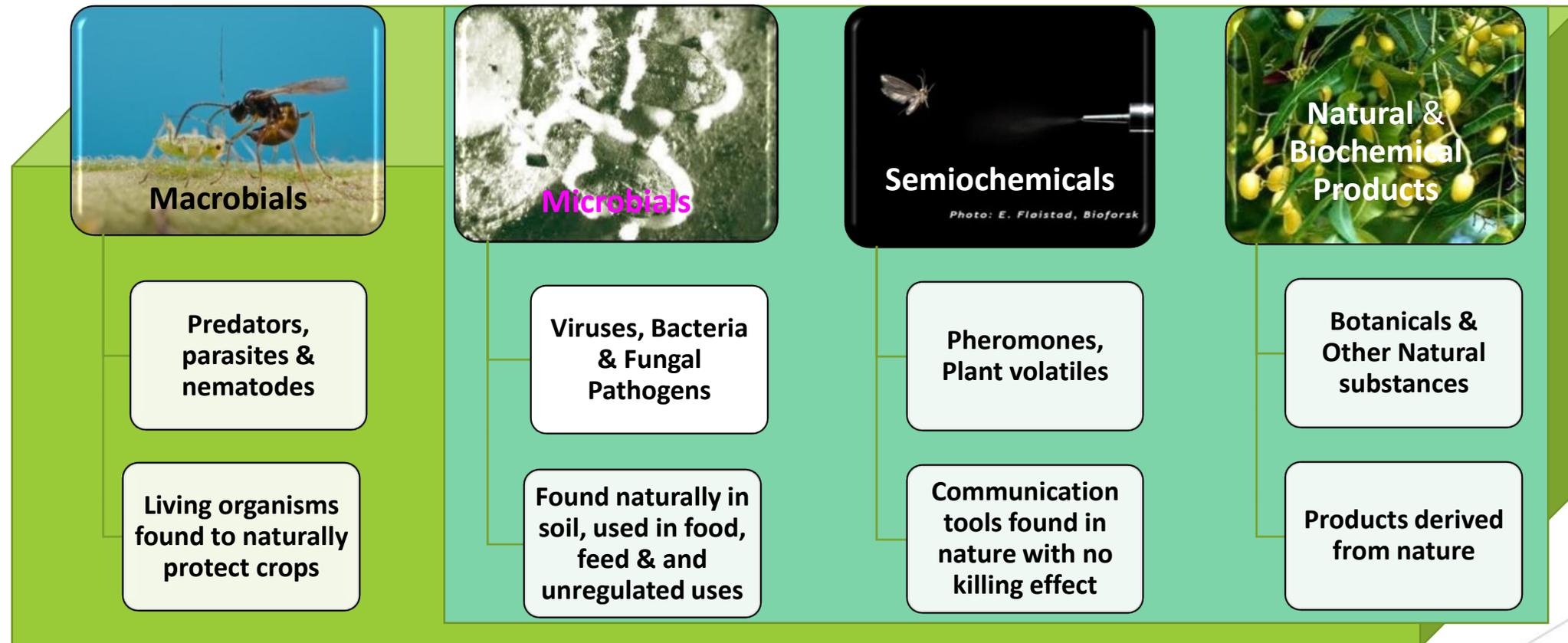
#### Microbials

- Bacteria; Fungi; Virus; Protozoan; Yeasts
- Bacteria, followed by Fungi make up the largest groups commercially (>90%)
- Microbials are the largest market of biopesticides at US\$1.3 Bn.
- Biggest challenges for microbials are formulation related: 1) Shelf-life; 2) Stability; 3) Performance enhancement

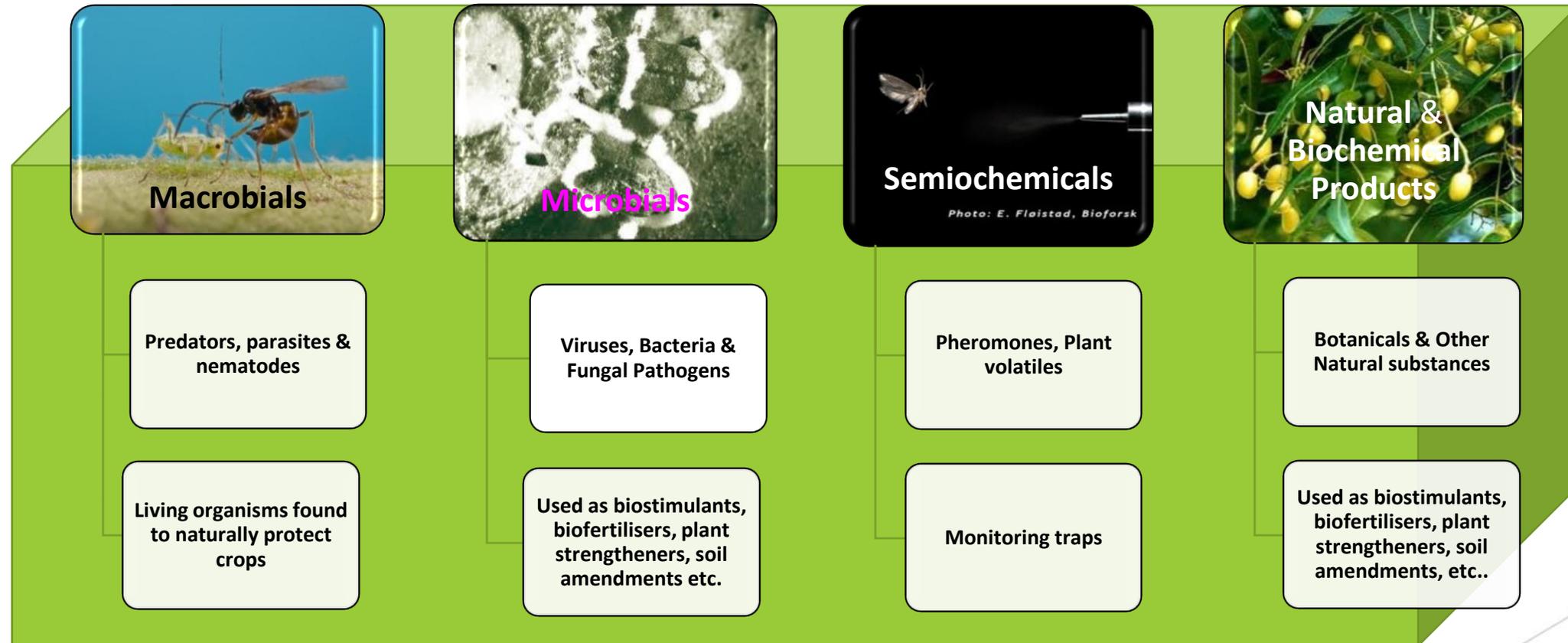
### Macroorganisms

- Insects; Mites; Nematodes
- Insects followed by mites makeup the largest groups
- Unique in that the live organism in the form of eggs, larvae, pupae or adult is used.
- Most important challenge for Macros is logistics—shipping live organisms that have to have special care to survive
- Normally not classified as a Biopesticide—only as Biological Control Products

# What “Non-chemical alternatives” are currently available from the Biocontrol industry?



# What products are currently available to the farmer?



# Biopesticides – market, manufacturers and products

- Biopesticide market
  - Worldwide in 2014: \$1.9 billion at user level; annual growth 15-20%
- Biopesticide manufacturers
  - Worldwide : approx. 230 (ex China, India)
  - Europe: 91
  - America's 98
  
  - IBCAs 52
  - Microbials } 171
  - Semio-chemicals }
  - Natural products }
- Total of biopesticide products:
  - Macros: > 230 organisms
  - Micros, semiochems, naturals: > 450 actives, > 2300 products



Sources:  
DunhamTrimmer, Biopesticide Industry Overview 2015  
CPL, Biopesticides Worldwide Market 2013

# Low-risk Plant Protection Products



IBMA need to separately handle incentives & procedures

Stakeholders identified & approached

Consultant PA Europe engaged

Activities of PA Europe, IBMA & Copa and Cogeca





# *Low-risk procedures and incentives activities*

Rio Praaning PA Europe

