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Access & Benefit Sharing for Biological control products

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International Biocontrol Manufacturers Association (IBMA)

- Worldwide association of Producers (and distributors) of Biological Control Agents
- Since 1995
- 150 members

- 4 divisions:
  - **Invertebrate Biological Control Agents (IBCA's)**
  - Microbials
  - Semiochemicals
  - Natural & Biochemical Products

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Biological Control

The use of an organism (natural enemy: parasite, predator or pathogen) to reduce the population density of another organism (pest, disease)

- Safe alternative for chemical pest control
- Common practice in agriculture since 1920 (citrus)
- In greenhouse industry since 1967
- Cornerstone of Integrated Pest Management (IPM) systems



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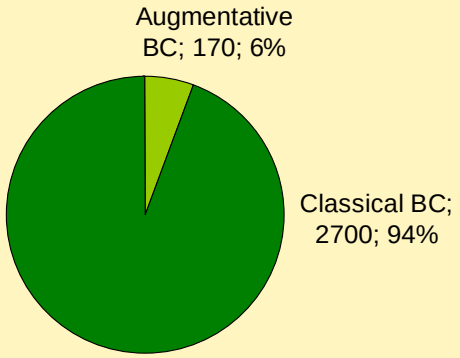
Integrated Pest Management

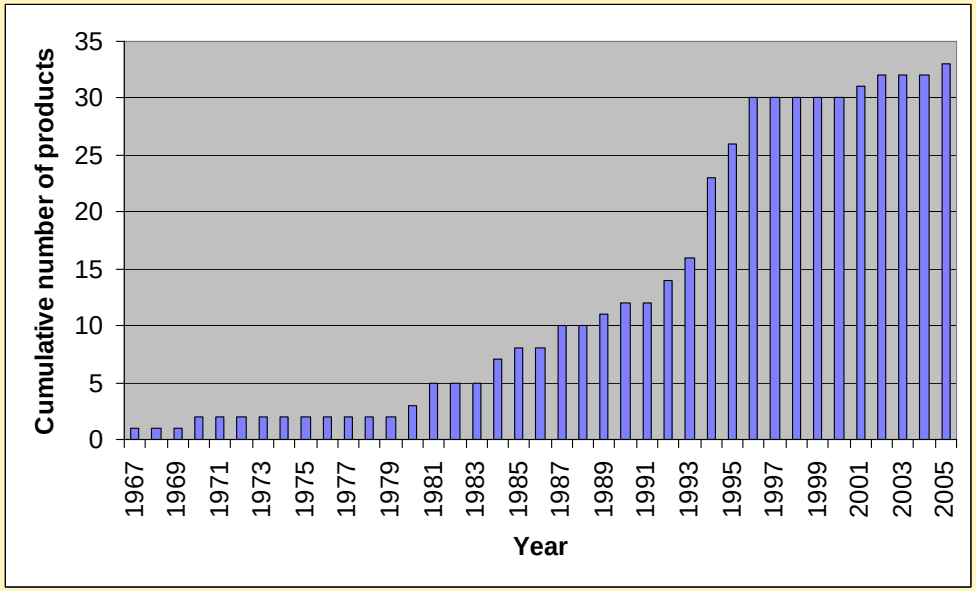
A system that keeps harmfull organisms below the economic damage level based on ecologically, economically and toxicologically acceptable methods.

- strategy
- uses combination of different tactics to :
  - prevent (hygiene, exclusion, ...) and
  - manage (mechanical, biological, chemical, cultural, ...) pest populations.
- biological control = cornerstone !!!
- chemical control = last resort

Biological Control and Industry

- BC Industry depends on augmentative biocontrol (= temporary releases)
- Mainly greenhouse vegetables
- 25 species > 90% market





Biocontrol Industry

- Young sector: 40 years old
- Small sector:
  - 50 producers, 90% less than 20 employees
  - ±150 million € (225 million $) (excl. bumblebees)

  (Pesticides: 25 billion €, insecticides: 6,25 billion €)
- Low profitability:0-5%

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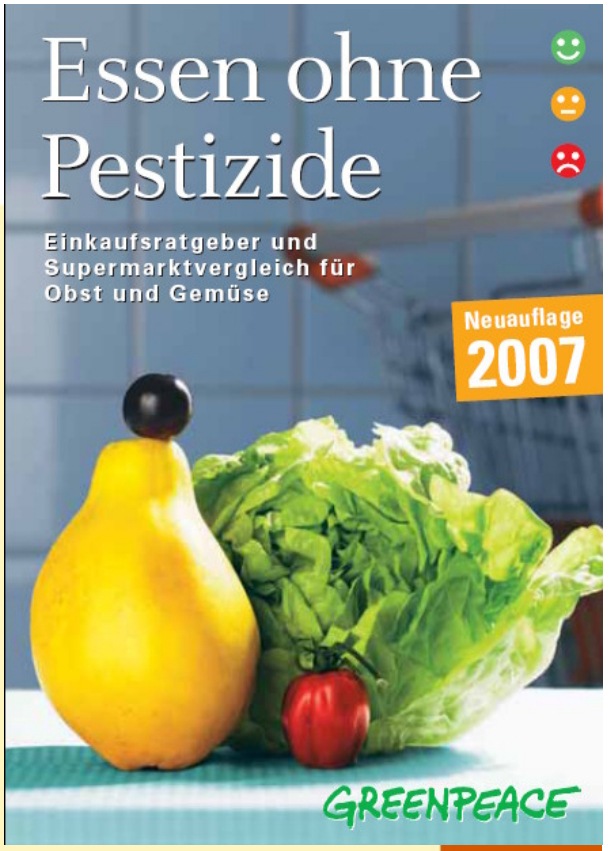
Importance of Biocontrol



- Safe alternative for chemical pesticides
  - Safe for people and environment
- Assuring production of safe and healthy food.
  - Greenhouse vegetables
  - citrus
  - (straw)berries
- Market drivers: food safety, pesticide resistance, yield and quality increase, reduction of available pesticides, ...
- Developing markets: Africa, Latin America, Asia, Middle East

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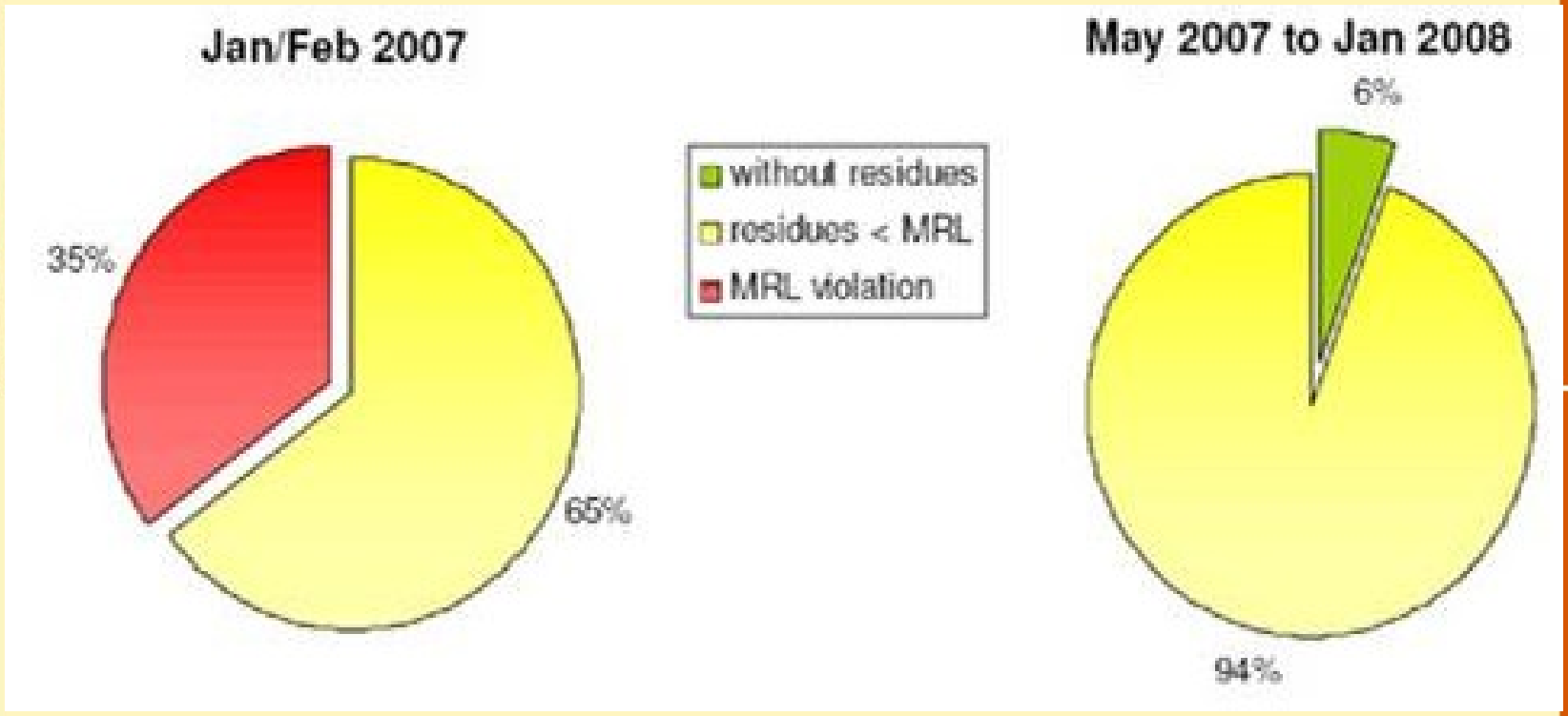

Percentage of tested, conventionally-grown Spanish sweet peppers with pesticide residues from different production seasons: January / February 2007 in comparison with May 2007 to Jan 2008

Resources

- Insects, mites, nematodes, micro-organism
- Not genetically modified, no derivatives
- First local species, due to IPPC: import of exotics restricted

- Foreign exploration is required as:
  - Many pests are exotic, invasive organisms which become a pest due to the absence of natural enemies.
  - Invasive species threaten existing biological control programs because biological control is a system
    - *Frankliniella occidentalis*
    - *Bemisia tabaci*
    - *Tetranychus evansi*
    - *Tuta absoluta*
  - Tomato, an exotic crop is hostile to many natural enemies.

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Developing a product for Biocontrol

- Field survey in different source countries of pest
- Collection and export of specimen (insects live very short!)
- Identification of specimen
- Set up lab culture
- Research on biological parameters
- Evaluation of candidate -> go/ no-go
- Risk assessment – IPPC phytosanitary requirements
- Field research
- Evaluation of candidate -> go/ no-go
- Development of an economically feasible mass-rearing system
- Development of product

Total process:
5-10 years,
€ 2 – 8 million
Decreasing success ratio

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Special issues for Biocontrol Industry

- **No Intellectual Property Rights** on natural enemies.
  - No patents on natural enemies:
  - Anybody can start mass-rearing the same organism for the same purpose.
- **The results of research become immediately public knowledge**
- **Not continually extracted** from Nature. Organism remains available in its natural environment to all possible users.
- No traditional knowledge
- **Societal benefits for all**
  - Assuring production of safe and healthy food
  - Minimising pesticide impact on environment and people
- ***Monetary benefits for industry are very low***

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Key Concerns

1. Access is limited

- Threat for existing biocontrol programs in case of a new *exotic invasive pest*

2. Costs of access too high:

- Permitting process might be more costly than the total benefits.
- No IPR's on beneficial insects and mites. Copying by other producers.

3. Country of origin not always known

- unintentional importation of beneficial insects and mites on plant material. E.g. the predatory mite *Phytoseiulus persimilis* was first found on orchids which were imported in Germany

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ABS for Beneficial Insects and Mites

- Collaboration with local research institutes for collecting, basic research (already in place)
- In case an effective beneficial insects or mite has been found, make the knowledge and organisms available to the farmers and researchers of the country of origin (already in place)
- Facilitate collecting of beneficial insects and mites for biological control:
  - Easy access and fast permitting procedures
- Exempt beneficial insects and mites from Monetary Benefit Sharing, on the condition that they are not patented.

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FAO – CGRFA and Beneficial Insects and Mites

- BC agents are recognised by the FAO as Genetic Resources for Food an Agriculture
- IOBC working group on Biocontrol and ABS
- Considering 'BC insect Treaty'
- In case of exotic invasive pests threatening food production consider developing fast track action

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Statement

If we share our pests, then we should also share the biological control agents against these pests.

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References

- *Submission of views on the terms of references by IOBC, ICIPE and IBMA at the Windhoek, Namibia meeting in December 2008. See minutes p. 109.*
- *Position paper IBMA Invertebrates 2009*
- *Cock et al., in press. Do new Access and Benefit Sharing procedures under the Convention on Biological Diversity threaten the future of Biological Control. Manuscript for BioControl*

- *www.ibma-global.com*

Thank you