IOBC-WPRS

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Agroscope

The role of IOBC in biological control and interactions with IBMA

Franz Bigler
President IOBC-WPRS

IOBC

www.iobc-wprs.org

Contents

- What is the IOBC?
- Brief view on the history of the IOBC
- Structure of IOBC, Working Groups and Commissions
- Collaboration and interaction with industry and IBMA
- Conclusions

IOBC = International Organization for Biological Control
WPRS = West Palaearctic Regional Section

IOBC mission and objectives

- IOBC is a scientific, non-profit organization to foster biological control, Integrated Pest Management (IPM) and Integrated Production (IP)
- IOBC promotes international cooperation in research, development and application of biological control and its implementation in IPM and IP
- IOBC provides independent professional advice to policy makers, governments, advisory services and farmers

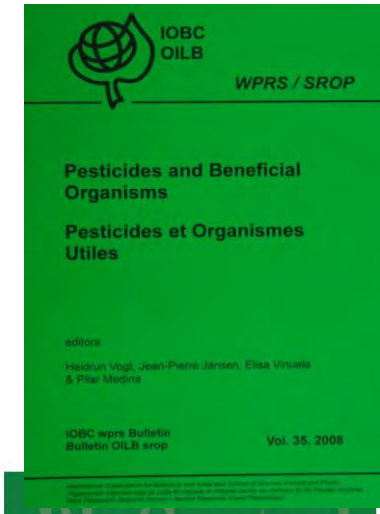
IOBC mission and objectives

- IOBC assists in the communication among biological control and IPM/IP workers through

  - dissemination of IOBC Books, Newsletters and Bulletins

  - online news (e.g. job offers, upcoming meetings) on the website (www.iobc-wprs.org)

  - publication of BioControl (IOBC owned) international, peer reviewed journal on biocontrol



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IOBC = International Organization for Biological Control
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The IOBC promotes the development of biological control and its application in integrated plant protection and production programmes. Biological control is the use of living organisms to prevent the losses caused by pest organisms or, more succinctly, the use of biota to control biota. The IOBC coordinates biological control activities worldwide in six regional sections (Africa, Asia and the Pacific, East Europe, West Europe and the Mediterranean, North America, and Central, Caribean and South America) and working groups. This book describes the origin and development of the organisation and gives a historical overview of its activities.

50 Years IOBC 1956-2006

International Organization for Biological Control of Noxious Animals and Plants

50 Years IOBC

History of the first 50 Years (1956-2006)

Ernst F. Boller, Joop C. van Lenteren & Vittorio Delucchi (Editors)

1948: An idea was born…

Membres du colloque *(de gauche à droite)* : MM. Ghesquière, Ferrière, Carayon, Balachowsky, André, Miller, Silvestri, Parker, Nicholson, Le Gall, Vayssière (photo Carayon).

1948: Stockholm: 8th International Congress of Entomology

Idea of creating an international organisation for biological control

1956: 1st IOBC Council

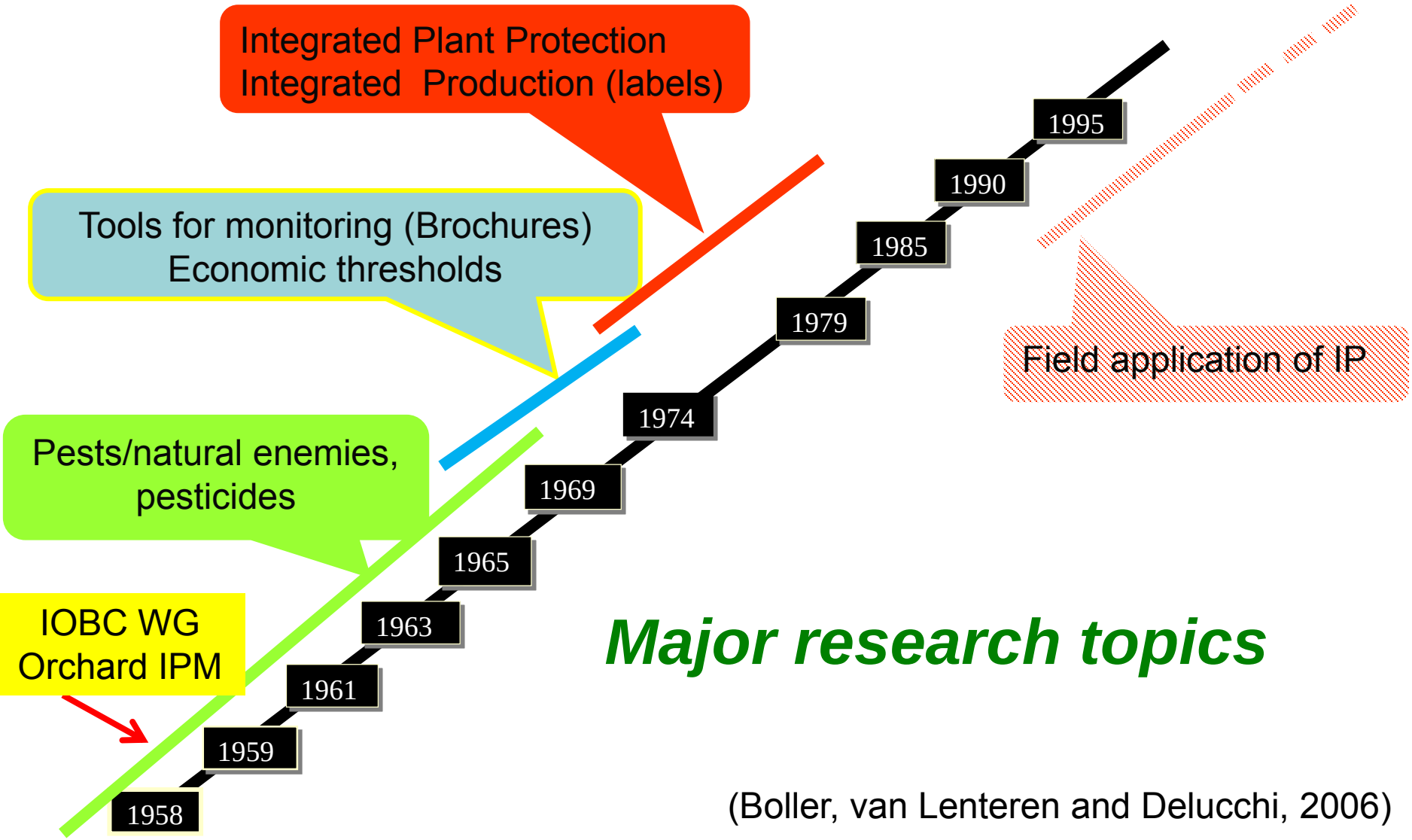
The first IOBC Council in 1956.
Front, left to right:
Bovey (CH), Grison (F), Balachowski (F), Caudri (EPPO), Delucchi (CH, CIBC/CABI), van den Bruel (B).
Back row: Bouriquet (F), Ferrière (CH), Biliotti (F), Franz (D), Klett (D)

Main reasons of birth of the IOBC, first activites on BC and IPM in Europe

- Around 1950, first organic **fungicides** and broad spectrum insecticides appeared ⇨ intensification of (apple) production
- 1956-58 first problems with Red spider mite (*P. ulmi*) after repeated use of organic fungicides and insecticides (e.g. CHC, OP, later pyretroids)
- Resistance problems with spider mites against 1st acaricides

1959: 1st IOBC WG «IPM in orchard» in Europe

Time periods in the development of BC and IPM in orchards



Major research topics

(Boller, van Lenteren and Delucchi, 2006)

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WPRS = West Palaearctic Regional Section

International Organisation for Biological and Integrated Control of Noxious Animals and Plants (IOBC)
West Palaearctic Regional Section (WPRS)
Organisation Internationale de Lutte Biologique et Intégrée contre les Animaux et les Plantes Nuisibles (OILB)
Section Régionale Ouest Paléarctique (SROP)

IOBC-WPRS
OILB-SROP

1971 split of IOBC in Regional Sections: West Palaearctic Regional Section (WPRS) is one of 6 regional sections of IOBC

http://www.iobc-global.org

http://www.iobc-wprs.org

IOBC-WPRS Commissions

5 Commissions (small and issue focused expert groups)

- Publications (each year >2000 pages of Bulletin)
- Guidelines for integrated production (IPM/IP)
- Identification and taxonomy of entomophagous insects and insect pathogens
- Harmonized regulation of invertebrate biological control agents
- Biological and Integrated Control in North Africa

IOBC-WPRS working groups

20 Working Groups (ca. 50-200 members, sub-groups)

- 10 Crop-focused: Citrus, olives, viticulture, fruit crops, oilseed crops, field vegetables, protected crops (Mediterranean, temperate climate), oak forests, stored products
- 3 Pest-focused: Mite pests, plant pathogens, insect pathogens and entomoparasitic nematodes
- 7 Method-focused: Induced plant resistance, GMP's in IPM, landscape management, pheromones and other semio-chemicals, pesticides and beneficial organisms, multitrophic interactions in soils, benefits and risks of exotic biocontrol agents

IOBC-WPRS offers platforms for all stakeholders

IOBC Global and other regional sections have their own Working Groups, Commissions and other technical bodies

Working Groups offer a wide network and OPEN platforms for scientists, industry partners, national regulators, advisory services and other stakeholders

- Each year 800-1000 individuals attend IOBC meetings organized by the Working Groups (>50% are not members of IOBC)

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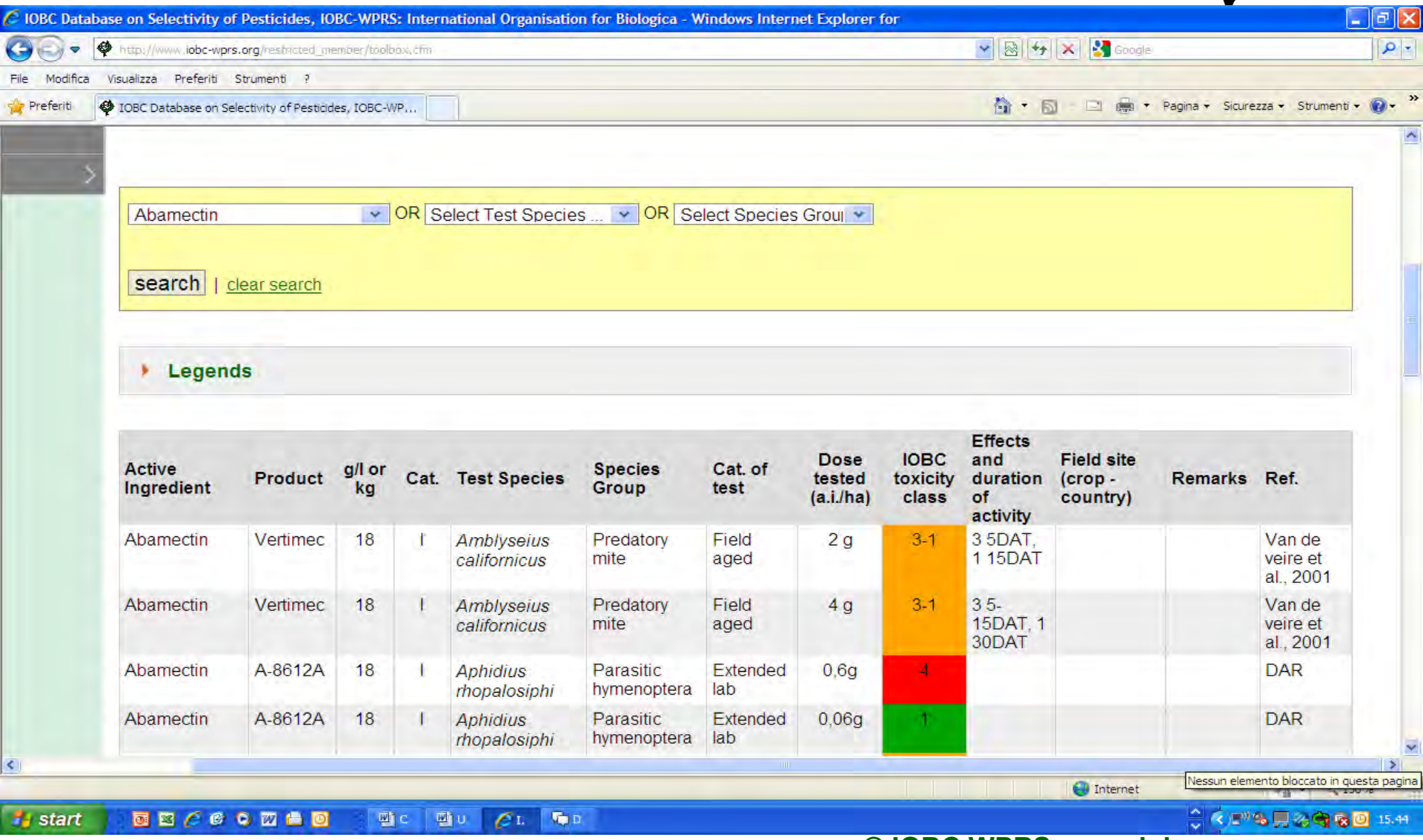
Examples of collaboration between IOBC and IBMA/BC companies

1. Pesticides and benefical organisms
2. Quality control of mass reared arthropods
3. Harmonized regulation of invertebrate biological control agents
4. Use of genetic resources in biologocal control: access and benefit sharing
5. Other Working Groups with strong links between IOBC-WPRS and IBMA

The need of biocontrol and IPM compatible pesticides

- Lack of information on side-effects of pesticides on biocontrol organisms since pesticides are used
- 1974-2000 test methods were developed and pesticides tested mainly by public institutions in collaboration with industry, coordinated by IOBC-WPRS Working Group since 1974.
- Since around 2000, effect assessment of pesticides on natural enemies is compulsory in EU pesticide registration, Problem: no public funds for development and testing of new compounds and new BC agents.

Pesticide selectivity Database on website of IOBC-WPRS (for members)



Active Ingredient	Product	g/l or kg	Cat.	Test Species	Species Group	Cat. of test	Dose tested (a.i./ha)	IOBC toxicity class	Effects and duration of activity	Field site (crop - country)	Remarks	Ref.
Abamectin	Vertimec	18	I	*Amblyseius californicus*	Predatory mite	Field aged	2 g	3-1	3 5DAT, 1 15DAT			Van de veire et al., 2001
Abamectin	Vertimec	18	I	*Amblyseius californicus*	Predatory mite	Field aged	4 g	3-1	3 5-15DAT, 1 30DAT			Van de veire et al., 2001
Abamectin	A-8612A	18	I	*Aphidius rhopalosiphi*	Parasitic hymenoptera	Extended lab	0,6g	4				DAR
Abamectin	A-8612A	18	I	*Aphidius rhopalosiphi*	Parasitic hymenoptera	Extended lab	0,06g	1				DAR

Quality Control of mass reared arthropods

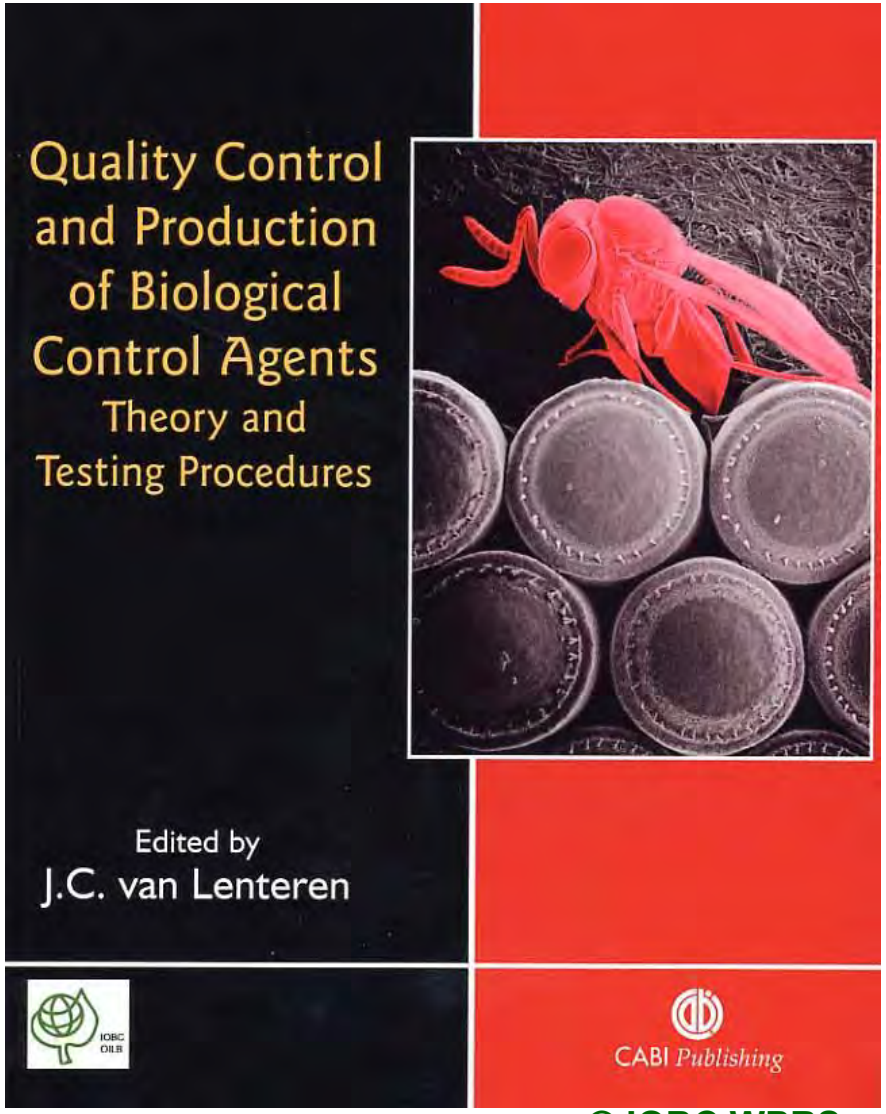
IOBC Global WG Mass Rearing and Quality Assurance: "..to facilitate and advance cost-effective rearing of high-quality arthropods and nematodes.

- 1982 IOBC Global WG: First period exclusively for mass rearing of fruit flies in Sterile Insect Technique programs (*Ceratitis capitata*)
- 1988 first ideas and attempts of Quality Control of natural enemies in Biological Control were made
- Since 1991, many guidelines and test methods developed in collaboration with BC industry

Collaboration with BC industry to develop Quality Control guidelines

EU and Biocontrol industry funded project of 4 years (1990-94) with 5 international workshops:

- Quality control methods developed for 30 commercially available biocontrol agents



IOBC-WRPS Commission on regulation of invertebrate biological control agents

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pestsciences.com
©CAB International 2005

Review Article

Guidelines on information requirements for import and release of invertebrate biological control agents in European countries†

F. Bigler[a*], J. S. Bale[b], M. J. W. Cock[c], H. Dreyer[d], R. Greatrex[e], U. Kuhlmann[c], A. J. M. Loomans[f] and J. C. van Lenteren[g]

[a]Agroscope FAL Reckenholz, Swiss Federal Research Station for Agroecology and Agriculture, 8046 Zürich, Switzerland. [b]University of Birmingham, Edgbaston, Birmingham B15 2TT, UK. [c]CABI Bioscience Switzerland Centre, 2800 Delémont, Switzerland. [d]Swiss Federal Office of Agriculture, 3003 Bern, Switzerland. [e]Syngenta Biolinc, Holland Road, Little Clacton, Essex CO16 9QG, UK. [f]Plant Protection Service, P. O. Box 9102, 6700 HC Wageningen, The Netherlands. [g]Laboratory of Entomology, Wageningen University, P. O. Box 8031, 6700 EH Wageningen, The Netherlands.

*Author for correspondence. franz.bigler@fal.admin.ch

Keywords: authorization; biocontrol safety; nontarget effects; regulation; risk assessment

Abstract

Several international documents have been published in recent years with the objective of providing guidance to industry, biocontrol practitioners and competent national regulatory authorities on the regulatory framework for the import and release of invertebrate biological control agents (IBCAs). As the scope and the level of detail given in these documents were diverse in many respects, it has been difficult for all stakeholders to apply such guidelines, and to integrate them in a harmonized way into national regulatory documents. At the request of several stakeholders, the International Organization for Biological Control of Noxious Animals and Plants/West Palaearctic Regional Section (IOBC/WPRS) organized an initiative with the objective of merging all relevant international documents into one document, to provide more specific guidance, and to harmonize the regulation of IBCAs in European countries and in other countries of the IOBC/WPRS. This document consists of five sections which together form comprehensive guidelines specifying the information required for regulating import and release of IBCAs.

- 2003 IOBC-WRPS Commission on harmonisation of invertebrate biocontrol agents (CHIBCA) on initiative of IBMA
- Merged previous documents of FAO, EPPO and OECD, published 2005
- REBECA EU Project 2006-07 recommends joint EPPO-IOBC Panel (since 2008)
- Guidelines and positive list of IBCAs produced by representatives of industry, regulatory bodies and science *(EPPO Standard PM6/2: Import and release of non-indigenous biological control agents)*

IOBC-WRPS Commission on regulation of invertebrate biological control agents

Since 2008, joint EPPO/IOBC-WPRS panel with annual meetings:

- To up-date EPPO's list of safe and widely used organisms
- To discuss current issues of IBCAs regulation (e.g. use of molecular tools for species/strain identification, methods for risk assessment of IBCAs)

IBMA is represented in the joint EPPO-IOBC Panel

Use of genetic resources in biological control

Convention on Biological Diversity – Access and Benefit Sharing

October 2009

BACKGROUND STUDY PAPER NO. 47

COMMISSION ON GENETIC RESOURCES
FOR FOOD AND AGRICULTURE

THE USE AND EXCHANGE OF BIOLOGICAL CONTROL AGENTS FOR FOOD AND AGRICULTURE

by

Matthew J.W. Cock, Joop C. van Lenteren, Jacques Brodeur, Barbara I.P.Barratt, Franz Bigler, Karel Bolckmans, Fernando L. Cônsoli, Fabian Haas, Peter G. Mason, José Roberto P. Parra[1]

Expertise in COP/MOP Nagoya 2010
Expert consultation Brussels 2011
Expert consultation Bonn 2012

IOBC-WRPS WG integrated control in protected crops

… a platform for all stakeholders of protected crops

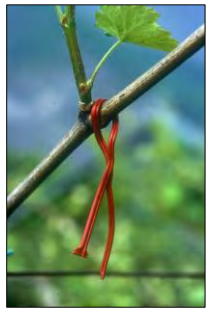
Advantages of Biocontrol

- No pest resistance to pesticides
- Grower/worker safety
- Less phytotox and higher yield
- Use of pollinators
- No waiting period for harvest, no residues

IOBC-WRPS WG on Pheromones and other semiochemicals

… an open platform since 40 years



Resolution of the IOBC Working Group "Pheromones and other Semiochemicals in Integrated Production" October 2012

The meeting resolved to request EU regulators to take greater measures to facilitate the registration of insect pheromones and other benign semiochemicals for pest management, because of the many advantages that they have over conventional pest control interventions, such as insecticides.





Closer collaboration of IOBC and IBMA in the future

Policy/administrative issues

1. Regulation of biological control agents and other low risk substances in the EU (and EPPO region)
2. Use of genetic resources in biocontrol – access and benefit sharing (co-operation with other non-government bodies e.g. FAO).
3. Joint lobbying for more funds in research and development of alternatives to replace pesticides in IPM, in particular in open field crops (e.g. programs in Horizon 2020 and EIP).
4. Joint efforts to show economic, health and environmental benefits of biocontrol and other alternatives.
5. Submit joint proposals on BC to funding sources (e.g. EIP)

Closer collaboration of IOBC and IBMA in the future

Tools and methods

1. Pesticides and beneficial organims:
   a) More IPM/biocontrol compatible pesticides urgently needed (methods and funds for testing new organisms)
   b) Access to up-dated databases is needed
2. Invertebrate biocontrol agents
   Standard methods for risk assessment needed
3. Quality control of mass reared arthropods:
   Revisite existing guidelines and develop new ones for new biocontrol agents
4. Jointly develop protocols for introduction of BC agents under ABS regulation
5. Joint training courses on the use of alternative methods in IPM programmes (e.g. EU, FAO)

Thank you for your attention

IOBC

www.iobc-wprs.org