

International Organisation for Biological Control (IOBC)

Organisation Internationale de Lutte Biologique (OILB)



IOBC is affiliated with the International Council of Scientific Unions (ICSU) as the Section of Biological Control of the International Union of Biological Sciences (IUBS)

IOBC Global Newsletter 114 – December 2023

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IOBC Global Executive Committee, Council meeting and General Assembly + ICBC 3 2024

The International Congress of Biological Control 3 (ICBC3) which will be organized by IOBC Global and CABI, will take place from 24 to 28 June 2024 in San Jose, Costa Rica.

Message from the President



It is hard to believe that 2023 is rapidly coming to an end, this year seems to have gone past in the blink of an eye. During the course of the year it became really apparent to me that whilst biological control enjoys a high profile in many parts of the world, there are still areas where there remains scepticism regarding its effectiveness and safety. Whilst all the data point towards a need to reduce the amount of pesticides used in the world, and to seek out what is now commonly referred to as nature-based solutions, these concerns mean that biological control has still not become mainstream in some parts of the world. Therefore, as biological control practitioners we must be constantly prepared to answer

questions and allay fears no matter how trivial we might think they are.

I was fortunate to have attended the Benefits and Risks of Exotic Biological Control Agents working group meeting in Aveiro, Portugal in September. This meeting was a combined meeting of the WPRS working group on this topic and the Global working group with a view to combining these two groups. For me the take home message from this meeting, and we probably all recognize this, is that we have to get better at reporting on the positive impacts of biological control. At this meeting, Kris Wyckhuys gave a brilliant paper on the economic benefits of the biological control of cassava pests throughout the world that illustrated the far-reaching and positive outcomes of a well thought out and implemented programme. Everybody who saw Kris' paper would be convinced of the value of biological control. We need more of these examples. The other important aspect that came out of this meeting was the need for engaging communities likely to be affected by biological control as partners right from that start of the programme. Well done to Olga Ameixa for pulling together a great meeting.

IOBC Global held the Ex Cie meeting in Aveiro and one of the aspects that we discussed was how to make biological control more mainstream through appropriate community engagement and publicity. The Ex Cie have undertaken to investigate a series of webinars and engage in other public awareness activities.

In 2024 we will elect a new Ex Cie to guide the IOBC Global through the next four years. Prof.dr. Barbara Barratt and Dr. Philippe Nicot, the newest honorary members of IOBC Global have kindly agreed to serve as the election committee to oversee this process. We are happy to announce that we have some excellent nominees for the positions on the ExCie that not only bring a wealth of experience, but also, fortunately also represent insect and weed biological control, and come from different regions of the world, making a truly global representation.

I would really like to bring to your attention the Third International Congress of Biological Control (ICBC3) in San José, Costa Rica, from Monday 24th June to Thursday 27th of June 2024 hosted by IOBC Global and CABI. The organization of this meeting is well under way and we already have some 30 symposia. This is the IOBC flagship conference and it is unique in that it brings together all aspects of biological control. The executive committee of the IOBC will be hosting its Council Meeting and General Assembly at this conference and not at the International Congress of Entomology as it has done in the past and the new executive committee for the period 2024-2028 will be announced at this meeting.

There are a number of Working Group meetings scheduled for the next six months, and I wish the conveners of this meetings fortitude with the organization. Please try and support these meetings and engage in healthy and robust debates about our discipline.

I would like to thank Joop van Lenteren for pulling together yet another full newsletter.

Martin Hill

Upcoming Event IOBC-Global - CABI



During this congress, IOBC-Global will also organize a General Assembly with a lot of news and present the results of the election of the new Executive Committee

www.IOBC-ICBC.com
email: info@IOBC-ICBC.com

We are preparing for the Third International Congress of Biological Control (ICBC3) in San José, Costa Rica, from Monday 24th June to Thursday 27th of June 2024. We have received over 30 submissions for scientific session subjects and panel discussion topics with the associated volunteers to organize sessions and panels. All the accepted session proposal topics are now online, and you can view them [here](#).

Starting from 14th of December 2023, we cordially invite you to submit your planned oral or poster contribution in English to ICBC3 2024 via the [online submission platform](#). The deadline for submissions is the 31st of January 2024 and please register within the [deadlines](#). Please note that all potential speakers as well as session chairs for the scientific sessions or panel discussions will have to register and pay the registration fee. Please also note that participants will have to register first to submit an abstract for an oral presentation and poster online.

How to submit an abstract?

To submit an abstract, first complete the online registration form. After completing the registration process, you will be logged in to your conference account, from where you will have access to the online submission.

Each participant can submit two contributions: one oral presentation and/or one poster. The length of the abstract is limited to 2,000 characters including spaces.

Please select the session that best fits your contribution or according to the instruction of the relevant scientific session coorganizers.

If your contribution does not fit into any of the sessions, simply assign it to the "Free Session" category. We will then either help with the assignment or organize contributions in a "Free Session".

Please consider that each scientific session or panel is 105 min long. We are planning to allow 5 speakers in each scientific session, each with 12 minutes for presenting and 7 minutes for discussion (in case there is high interest in a specific session topic up to 10 speakers can be allowed). Panels should be comprised of 3-5 panellists plus a chair and/or moderator and one keynote speaker who sets the scene for the topic to be discussed (the chair/moderator cannot be the keynote speaker). Panels must allow at least 25 minutes for Q&A from the audience.

IOBC will provide young researchers an opportunity to apply for the [IOBC Travel Award](#). In addition, ICBC3 would like to inform that scientists from national research organizations from Latin America and the Caribbean can contact the registration office to check for a lower registration fee. This will be done on a "first come - first serve" basis as ICBC3 has only limited funds available, but we are very committed to support participants from the LATAM region who are willing to present their research findings.

We are looking forward to arranging a stimulating ICBC3 with your strong support and active participation!

With kind regards,

Ulli Kuhlmann (CABI), Martin Hill and George Heimpel (both IOBC)

Third International Congress of Biological Control (ICBC3)

June 24 – 27, 2024

San José, Costa Rica

www.IOBC-ICBC.com

email: info@IOBC-ICBC.com

Candidates for Executive Committee 2025-2028

The current Executive Committee is happy to have received names of excellent candidates for all positions of the new Executive Committee, representing almost all Regional Sections and different types of biological control. Below, information is presented about the nominated persons. Prof.dr. Barbara Barratt (Barbara.barratt@agresearch.co.nz) and Dr. Philippe Nicot (philippe.nicot@inrae.fr) have been so kind to function as members of the election committee. Any comments about the nominated persons can be sent to the election committee.

Nominated for the position of President: Dr. Raghu Sathyamurthy (CSIRO, Australia)



Biography

As an empirical and quantitative ecologist, my research interests span invasion dynamics, plant-herbivore interactions, integrated population management, and biological control of invasive species. All my research is undertaken in close partnership with end-users of my science to ensure the research outputs have the best possible chance to be translated into practical outcomes and eventually longer-term impacts. Over the past two decades I have endeavoured to advance the discipline of weed biological control through a prioritised focus on asset protection, better integration of cutting-edge genomics and modelling tools and methods, and through a focus on active engagement of stakeholders,

policymakers and regulators involved in risk-cost-benefit decision making for weed management.

I have undertaken all this work through deep and enduring collaborative networks spanning Asia, Africa, S. America and N. America. This has enabled me to make meaningful contributions to theory and applications in weed biological control, and more recently extend these insights into genetic control approaches. I currently manage a national and international research program (comprising some 125 researchers) on Biosecurity within CSIRO, Australia's national science agency.

I have a strong commitment to serving the discipline of biological control, as evident from roles I have held on committees for national and international meetings (e.g. International Congress of Entomology, International Symposium on the Biological Control of Weeds), and service as Associate Editor for three of the main global biocontrol journals (Environmental Entomology (2011-2021), Biological Control (2005-2021), BioControl (2014-2021)). I have been actively involved in the IOBC since 2008, initially as a member (of NRS, APRS), prior to serving as Associate Editor for IOBC's flagship journal, BioControl, and more recently as a co-convenor of the IOBC Study/Working Group on Weed Classical Biological Control (2018-2023).

Motivation

Biocontrol is needed more than ever as a safe, sustainable and effective tool in the integrated management toolbox for pests, weeds and diseases. Biocontrol has aided the

successful management of invasive species for over a century, which has translated into significant economic and environmental benefit and impacts. Despite this, over the past few decades there has been a tendency in some quarters where biocontrol's contributions and utility have come under irrational attack that has extended beyond legitimate evidence-based criticism, resulting in an unnecessary erosion in confidence in this valuable management tool. This is particularly a concern for developing nations globally. My primary aspiration with seeking to serve on the IOBC Executive Committee is to champion the appropriate and scientific use of biocontrol as a sustainable and cost-effective intervention to address biosecurity problems.

Nominated for the position of Vice President 1: Dr. Rose Buitenhuis (Vineland Research and Innovation Centre, Canada)



Biography

I am Director of the Biological Crop Protection Program at the Vineland Research and Innovation Centre, a not-for-profit research centre in Ontario, Canada. I work directly with growers, bioprotection companies and researchers from government and universities to enable and accelerate the introduction and use of biological plant protection strategies against pests and diseases in horticulture. With a main focus on greenhouse crops, my research projects

develop biocontrol tools and strategies that will reduce pesticide use and help growers adopt long-term sustainable crop protection practices.

Within the IOBC, I'm serving since 2017 as one of the co-convenors of the working group Mass Rearing and Quality Assurance (MRQA), and I've been a Board Member-at-Large of the IOBC NRS between 2013 and 2015. I've also co-organized several working group meetings including MRQA in Bologna, Italy in 2022, Integrated Control in Protected Crops, Temperate Climate in Niagara Falls, Canada in 2017, and Biocontrol in the Americas, also in Niagara Falls, Canada in 2010. I've been part of the scientific committee for several other IOBC meetings.

Other biocontrol-related service include activities for the Entomological Societies of Ontario and Canada, I'm a committee member of the Réseau Québécois de recherche en agriculture durable, scientific advisor for the Association of Natural Biocontrol Producers, and I contributed to the 2023 FAO Background Study Paper on Sustainable use and conservation of microbial and invertebrate biological control agents and microbial biostimulants.

Motivation

The role of Vice President on the IOBC-Global Executive Committee would be a good opportunity to help advance the adoption and accessibility of augmentative biological control world-wide. There still is a disconnect between biocontrol research, biocontrol producers, government regulations regarding biocontrol agents and access and adoption of biocontrol by the growers in different countries.

Nominated for the position of Vice President 2: Prof.dr. Vanda Bueno (Department of Entomology, Federal University of Lavras, Minas Gerais, Brazil}**Biography**

Vanda H.P. Bueno started her studies in biology at the Paulista University of Sao Paulo (UNESP, Brazil), did her MSc and PhD in Entomology (Biological Control of Pests) at the University of Sao Paulo (USP, Brazil), and then a post-doc at the University of California (Berkeley, USA). She was appointed full professor of Biological Control of Pests at the Federal University of Lavras (IFLA, MG, Brazil). Initially she worked on natural enemies and biological control of forest pests, pests in coffee plantations and in pastures. Later she initiated research on augmentative biocontrol in protected crops with parasitoids (mainly aphid parasitoids) and predators (*Orius* species) in Brazil. She also worked on mass rearing and quality control of parasitoids and predators, with special interest in Heteropteran predators. Currently she studies Neotropical predatory

mirids for control of pests such as *Tuta absoluta* and whitefly in tomato. She has supervised many Brazilian, Colombian, Cuban, and Dutch BSc, MSc and PhD students, published more than 160 peer reviewed papers, 26 book chapters, and edited two books on “Biological Control of Pests: Mass Production and Quality Control”. Also, she is co-author of the recent published book “Biological Control in Latin America and the Caribbean: its Rich History and Bright Future” (two editions: English and Spanish). She was involved in the initiation of the Latin America section of IOBC (IOBC-NTRS) in the 1990s, and functioned as secretary, treasurer and president. She is honorary member of IOBC Global, and was vice-president of IOBC Global from 2016 to 2020.

Motivation

As a result of the above mentioned activities, I am well informed about the actual situation in the field of biological control, particularly in Latin America. I am motivated to stimulate, together with international organizations and entomological societies of Latin America, more collaboration between biological control researchers in order to change the trend of decreasing biodiversity into an increase of biodiversity in agriculture, forestry and the surrounding environment, among others through the implementation of biological pest management. Latin America has a high diversity of natural enemies that needs to be explored and tested for use as biological control agent. This might, among others, be encouraged through the realization of courses, meetings that lead to more cooperation between researchers, students and farmers from the Latin American countries. The book “Biological Control in Latin America and the Caribbean: its Rich History and Bright Future” clearly illustrates progress of biocontrol in this region and also shows that Latin America now has the largest area under biocontrol, but much more can be done. In the past I have collaborated with colleagues in Argentina, Chile and Ecuador in organizing biocontrol courses and participated as lecturer in various other biocontrol related courses. In my current function as international representative of the Brazilian Entomological Society (SEB), I am

able to promote and coordinate biological control activities in our region and link them to activities in the other IOBC regions.

Nominated for the position of Secretary General: Prof.dr. John Holland (Game & Wildlife Conservation Trust, Fordingbridge, Hampshire, United Kingdom)



Biography

I first became interested in biocontrol during my undergraduate degree, inspired by Helmut Van Emden. This led to an MSc in IPM with Steve Wratten and Paul Jepson and my first IOBC meeting in Rennes in 1987. There followed a PhD in Entomology studying insecticide resistance in spider mites at Lincoln University in New Zealand. On my return to the UK in 1992 I worked on an Integrated Farming Systems project as a post-doc before becoming Head of Entomology at the Game & Wildlife Conservation Trust. There I was able to pursue my interests in biocontrol working on many collaborative projects investigating the role of generalist natural enemies and their

conservation. This included several projects on their spatial dynamics. I attended the first IOBC-wprs meeting of the Landscape Management for Functional Biodiversity WG and have attended every meeting ever since. I became the convenor of the group in 2008 and held this position for 9 years, after which became a council member. When I was on sabbatical in 2016 in NZ, I met with IOBC-aprs and instigated a training meeting which I later attended. I have made many friends through IOBC and through these contacts led to me leading two successful EU funded projects (QuESSA, FP7; BEESPOKE, Interreg NSR). I have a very broad expertise covering many aspects of biocontrol and agroecology. In 2016, I was awarded an honorary professorship at University of Sussex. I have published widely in a variety of media.

Motivation

IOBC has been important to me throughout my career as I am a strong believer in the value of biocontrol. The opportunities to meet with fellow enthusiasts has been both inspiring and informative. I also very much enjoyed being a convenor as it provided the opportunity to get to know everyone in the WG and in wprs through the GAs. One of the most important parts of the meetings is the socialising opportunities which is important for forging relationships with potential collaborators on projects. It also provides an opportunity for young scientists to meet with more experienced scientists in an informal setting and broaden their knowledge beyond what they may gain during their PhD. This is an aspect which I relished as a young scientist and something I would like to see expanded upon in each region through more training meetings.

Having worked on outreach throughout my career I am especially keen on ensuring that the latest scientific knowledge reaches the end users. Most of the meetings I attended were predominantly attended by scientists although some groups have a much stronger practitioner attendance. This is an aspect which could be improved through wider promotion of the meetings. Linked to this, IOBC is not that well known outside of scientific circles and I feel that more could be done to promote the organization, especially through social media.

Having had to do this for EU projects, I would hope to encourage all of the regions to do more and involve the younger members in this process.

Nominated for the position of Treasurer: Dr. Pablo Urbaneja-Bernal (Institute of Agrifood Research and Technology, Cabrils, Spain)



Biography

I am a tenured researcher at the Institute of Agrifood Research and Technology (IRTA), specializing in Integrated Pest Management (IPM) with a focus on the biological control (BC) and behavioral ecology of natural enemies. In my most recent postdoctoral role at IVIA, I undertook a comprehensive investigation into the exotic mealybug, a significant citrus pest in the Mediterranean. This involved an intensive 8-month research stay in South Africa, where I conducted surveys of parasitoids and carried out efficacy studies to identify potential candidates for introduction to Spain.

Before this, I dedicated 8-months to a project at the Canarian Institute of Agricultural Research (ICIA) in Spain, working in the Classical Biological Control (CBC) of the African Citrus Psyllid. I successfully navigated the regulatory landscape and secured the necessary permissions for the field release of beneficial organisms. During an interim period between CBC projects, I served as a postdoctoral associate at Rutgers University for one year and eight months, leading research on the invasive spotted wing drosophila and its natural enemies. This experience significantly contributed to the development of my leadership skills and independence. My academic journey includes obtaining a PhD from Universitat Jaume I (UJI), where I focused on the impact of climate change on citrus mite communities. During my PhD, I conducted a research stay at the University of Florida, investigating the suitability of citrus rootstocks to reduce the Asian Citrus Psyllid. My master's thesis, completed at IVIA, delved into the nutritional ecology of zoophytophagous predators in tomato crops.

In addition to my research achievements, I am committed to proficiently disseminating my research findings. This commitment has translated into commendable productivity in the early stages of my research career, evidenced by the publication of over 20 papers in reputable scientific journals, predominantly classified within the top quartile (Q1). Three awards have recognized this commitment for the best oral communication at various scientific congresses, including the prestigious IOBC-WPRS "Integrated Control of Plant-feeding Mites" in Valencia (Spain). Furthermore, I have organized and moderated different research symposiums, spanning the Entomological Society of America, the International Society of Chemical Ecology, and the upcoming International Congress of Entomology in 2024 (Kyoto). Beyond academic pursuits, I am actively organizing the committee for the inaugural IOBC PhD Symposium on Biological Control of Arthropod Pests and Plant Diseases, scheduled for April 2024 at IRTA in Barcelona, Spain. Additionally, I played a pivotal role in the organizing committee of the fifth meeting, 'Integrated Control of Mite Pests,' hosted by the IOBC in Castellon (Spain).

All of these experiences have significantly deepened my expertise in IPM, placing a specific emphasis on biological control and delving into the behavioral ecology of natural

enemies. These diverse capabilities underscore my commitment to advancing the field of biological control and my eagerness to contribute to the Executive Committee of the IOBC.

Motivation

I am writing to convey my honest interest in becoming a member of the Executive Committee of the IOBC, specifically in the capacity of Treasurer. I am deeply motivated by the shared commitment to advancing the field of Biological Control, and I am eager to contribute to the ongoing efforts in my prospective role as Treasurer. Benefiting from the invaluable guidance of my esteemed predecessors in this position, with whom I share a close professional relationship, I am confident in their ability to provide support and insight whenever challenges arise. I am dedicated to ensuring that my tenure as Treasurer contributes to continuously enhancing the IOBC objectives and aspirations.

Having actively participated in various IOBC initiatives and events, I have witnessed the organization's impactful strides in promoting Biological Control. The IOBC mission deeply resonates with my professional values, and I am eager to contribute my skills to further its objectives. As Treasurer for the next four years, my primary focus is ensuring sound financial management within IOBC and fostering a culture of fiscal responsibility and accountability for the organization's continued success.

In addition to financial stewardship, I am eager to use my expertise to enhance international cooperation among biological control researchers. Active stakeholder engagement, promoting research initiatives, and fostering knowledge exchange are pivotal for effective Biological Control. I aim to contribute to IOBC's growth and influence on a broader scale. I am particularly excited about the opportunity to participate in organizing conferences, meetings, and symposia—an invaluable platform to unite professionals, share cutting-edge research, and shape the future of Biological Control. This is why I am honored to present my candidacy for the Treasurer position on the Executive Committee of IOBC.

Past President: Prof. dr. Martin Hill (Rhodes University, South Africa)



Martin Hill is Distinguished Professor and Head of Entomology at Rhodes University. His research focus is broadly biological control, on both plant and insect pests in an attempt to find alternative ways to control these pests that reduces the amount of pesticides and herbicides used in the world. One of the main research areas has been the biological control of invasive aquatic plant species, including notorious weeds such as water hyacinth and salvinia. I have implemented the outcomes of my research on the biological control of water weeds in a number of countries around the world, including:

Argentina, Brazil, Peru, Papua New Guinea, Cameroon, China, Zimbabwe, Zambia, Madagascar, Malawi, Mozambique, Namibia, Nigeria, Kenya, Uganda, Tanzania, Central African Republic, Republic of Congo, Ghana, Benin and Senegal. The most notable projects that I have been involved with is the biological control of water hyacinth on Lake Victoria in the late 1990s and the near eradication of red water fern in South Africa. Much of this research has become multidisciplinary and includes strong social and economic aspects. Since the early 2000s I have also worked towards more sustainable control of insect pests,

mostly in the citrus industry through the development of entomopathogenic fungi and viruses into mycoinsecticides as biological controls. This research has resulted in the filing of a patent on a new virus isolate for the control of several lepidopterous pests of tree crops, including codling moth on apples, and has great potential for the organic fruit market in Europe. I have been successful in raising research funds from a number of different organizations, and this allowed me to establish the Centre for Biological Control at Rhodes University in 2017. The CBC is the seat for the IOBC ATRS sector. I served as the Convener of the IOBC, Global Working Group on the Biological and Integrated Control of water hyacinth (1998-2002), and the Secretary General of the IOBC Afro Tropical Sub Region (ATRS) (2000-2006). Currently, I serve as President of IOBC-Global.

IOBC needs your help

Worldwide education in biological control

IOBC Global often receives questions about education and training possibilities for biological control. With the help of our Regional Sections and Working Groups, we are frequently able to help finding answers, but it is not always an easy and quick procedure. **Therefore, we ask you to provide information about education and training opportunities.** We will summarize this information and publish it on the Global website. Please present the information to secretary-general@iobc-global.org as follows:

- Name of course / training:
- Institute / organization providing this course:
- Course period and length of course in days:
- Costs of course:
- Entrance requirements.

News from our IOBC Regional Sections

IOBC-ATRS

The Afrotropical Regional Section has had a quiet year, marked by a low number of individual memberships. Elections for a new executive committee were due in 2023, but were postponed until 2024, for logistical reasons.

One workshop was held under the auspices of IOBC-ATRS, as follows: IOBC-ATRS in collaboration with the Centre for Biological Control (CBC) in South Africa, the Food and Agriculture Organisation of the United Nations, and government ministries responsible for agriculture and the environment convened a two-day workshop in Harare, Zimbabwe. The workshop aimed to develop a national strategy and action plan for the elimination, reduction and mitigation of the impacts of invasive alien species in Zimbabwe and help the country align with its Multi-lateral Environmental Agreements including the Convention on Biological Diversity. The IOBC-Global President, Prof. Martin Hill, in a presentation delivered on his behalf by delegates from the CBC, highlighted the role of the organisation in promoting the use of environmentally safe biological control methods for the control of pests and diseases as well as a global overview of biological control. One of the key outcomes of the workshop was the inclusion of biological control as a major tool in the

management of invasive alien species in the draft action plan. (Compiled by Gerald Chikowore)



Participants at the Harare, Zimbabwe workshop of IOBC-ATRS

IOBC-WPRS Activity report 2022-2023 and Future Activities 2024-2025

The International Organisation for Biological and Integrated Control - West Palaearctic Regional Section (IOBC-WPRS) is one of six Regional Sections of the International Organisation for Biological Control. Currently, the IOBC-WPRS encompasses more than 350 experts from all continents (around 40 countries) involved in research, development and implementation of biological control and integrated pest management (IPM) of pests and diseases in agricultural crops and forests. These experts are organised within twenty working groups (WGs), two study groups (SGs) and six commissions. Each WG focusses on a specific crop (citrus, olives, viticulture, fruit crops, oilseed crops, field vegetables, arable crops, protected crops, oak forests), pest (mite pests, plant pathogens) or method (plant resistance, pheromones & semiochemicals, landscape management, microbial and nematode control of invertebrate pests). These working groups have been organizing regular meetings aiming to promote international cooperation in research and development of biological control and IPM/IP.

Main activities / achievements in 2022 and 2023

The major activities / achievements in 2022 and 2023 within IOBC-WPRS include the organization of WGs meetings, publication of Newsletters and Bulletins, production and update of guidelines for integrated production of agricultural crops, collaboration with other international organisations, relaunch of the IOBC-WPRS website and development of a new logo, and registration of the IOBC-WPRS as a non-profit organization (NPO) in Switzerland.

Organization of WG meetings

In total, 17 WG meetings were organized in 2022 and 2023, as follows:

- WG “Integrated Protection of Citrus Crops”, held in Napflio (Greece), on April 4-6, 2022;

- WG “Induced Resistance in Plants Against Insects and Diseases”, PR-IR 2022: Priming the Future for Healthy Plants Online taster session: Climate change and its impact on plant resistance, held in Sheffield (UK), in April 2022;
- WG “Integrated Control in Oilseed Crops”, held on Rennes (France), May 17 – 18, 2022;
- 12th International IOBC/WPRS Workshop on Pomme Fruit Diseases, at Plovdiv (Bulgaria), June 13 – 16, 2022;
- 18th meeting of the WG “Microbial and Nematode Control of Invertebrate Pests” with the topic “Microbial Control Agents in the Age of Global Change”, held at České Budějovice (Czech Republic), June 19-22, 2022;
- 9th meeting of the WG “Landscape Management for Functional Biodiversity”, held at the University of Milan (Italy), July 2022;
- WG “Integrated Protection in Field Vegetables”, Rennes (France), 21 September 2022 (online meeting);
- 9th Meeting of the IOBC-WPRS Working Group “Modern Biotechnology in Integrated Plant Production”, held in Berlin (Germany), September 28 – 30, 2022;
- joint Meeting of the WGs “Pheromones and other semiochemicals in integrated production” and “Integrated Protection of Fruit Crops” - PheroFruits 2022 “IPM in the XXI century: new tools, tactics and strategies to improve sustainability from old and new pests and diseases”, held in Girona (Spain), September 25 – 29, 2022;
- 13th Meeting of the WG “Integrated Protection of Stored Products”, held in Barcelona (Spain), October 3 – 6, 2022;
- WG “Integrated Protection in Oak Forests”, meeting in Hammamet (Tunisia), October 10 – 13, 2022;
- 16th Meeting of the WG “Biological and Integrated Control of Plant Pathogens”, Wageningen (Netherlands), in June 2023;
- Joint meeting of the WGs “Integrated Control in Protected Crops, Temperate Climate and Mediterranean Climate”, held in Brest (France), August 2023;
- 8th Meeting of the WG “Integrated Control of Plant-Feeding Mites”, held in Belgrade (Serbia), September 2023;
- BREBCA23 – joint meeting of the IOBC-WPRS and IOBC-Global WGs “Benefits and Risks of Exotic Biological Control Agents”, held in Aveiro (Portugal), September 11 – 14, 2023;
- Meeting of the WG “Integrated Protection in Field Vegetables” held in Rennes (France), September 20 – 22, 2023;
- Meeting of the WG “Integrated protection in Viticulture”, held in Logrono (Spain), October 2023.

In addition, IOBC-WPRS has held a council-convenor meeting in Ghent, Belgium, in November 2023 (Fig. 1). We exchanged on the recent achievements of the section and discussed and agreed on the plans and the budget for the upcoming two years. This meeting was the first physical get together of IOBC-WPRS Council members and Convenors after the pandemic, and since the last CC-Meeting in Serbia in 2019.



Participants at the IOBC-WPRS council-convenor meeting held in Ghent (Belgium), in November 2023.

Publications

Presentations and topics of the WG meetings are usually published in the IOBC-WPRS Bulletins. In 2022 and 2023, a total of 13 Bulletins was published, as follows:

- Bull. 156 Landscape Management;
- Bull. 157 Oilseed Crops;
- Bull. 158 Olive Crops;
- Bull. 159 Stored Products;
- Bull. 160 General Assembly;
- Bull. 161 Citrus Fruit Crops;
- Bull. 162 Microbial and Nematode Control;
- Bull. 163 Modern Biotechnology;
- Bull. 164 Pome Fruit Diseases;
- Bull. 165 Plant Pathogens;
- Bull. 166 Pheromones and other Semiochemicals and Fruit Crops;
- Bull. 167 Protected Crops Temperate and Mediterranean Climate;
- Bull. 168 Oak Forests.

In addition, two special issues were published, namely:

- in *Frontiers Plant Science: Induced resistance and Priming Against Pests and Pathogens* (Volume 13 – 2022)
- in *Pest Management Science* (Volume 79, Issue 10)

News and current publications are also highlighted with newsletters. 13 IOBC-WPRS Newsletters were disseminated, as follows:

- WGs “Pheromones and Other Semio-Chemicals in Integrated Production” and “Integrated Protection of Fruit Crops”: New IOBC-WPRS Bulletin
- Biological and Integrated Control of Plant Pathogens: New IOBC-WPRS Bulletin

- Pome Fruit Diseases: New IOBC-WPRS Bulletin
- Microbial and Nematode Control of Invertebrate Pests: New IOBC-WPRS Bulletin
- Integrated Control in Citrus Fruit Crops: New IOBC-WPRS Bulletin
- Launch of the New Website
- Integrated Protection of Stored Products: New IOBC-WPRS Bulletin
- Integrated Protection of Olive Crops: New IOBC-WPRS Bulletin
- Integrated Control in Oilseed Crops (ICOC): New IOBC-WPRS Bulletin
- News From IOBC-Global, August 2022
- Landscape Management for Functional Biodiversity: New IOBC-WPRS Bulletin
- Integrated Protection of Date Palms: New IOBC-WPRS Bulletin
- Happy New Year Message from the President

Production and update of IPM guidelines

Within the current reporting period, the following two crop specific guidelines were updated:

- Citrus Crops, 6th edition, 2022
- Field vegetables, 2nd edition, 2023.

On the new website, all approved and updated IP Guidelines are publicly available at <https://iobc-wprs.org/ip-tools/>

Collaboration with other international organisations

In continuation with previous years, the IOBC-WPRS has been collaborating with other international organizations, notably the Commission of the European Union (CEU) and the European Plant Protection Organisation (EPPO). For the years 2022 and 2023, the main activities carried out at this level were:

- Update of the Positive List of BCAs used in the EPPO region (EPPO Standard PM 6/3);
- Revision of EPPO Standard PM 6/3 on the criteria for inclusion/deletion of BCAs in the Positive List;
- Revision of EPPO Standards PM 6/1 “First import of exotic BCAs for research under controlled conditions” and PM 6/2 “Import and release of non-indigenous BCAs”;
- Revision of EPPO Standard PM 6/4 “Decision-support scheme for import and release of BCAs of plant pests”;
- Explore the development of an EPPO Standard on the method for host specificity testing of IBCAs for invertebrate pests (subgroup created);
- Explore the development of an EPPO Standard on the assessment of establishment potential of IBCAs;
- Drafting of a EPPO/IOBC position paper “Role of BCAs against regulated pests” for EPPO Bull. (ongoing);
- Development of a paper on environmental benefits of BS (ongoing);
- Meeting of IOBC-WPRS representatives (president Giselher Grabenweger, vice-president Bruno Gobin, and secretary general Paula Baptista) with Members of the European Parliament (MEP Tom Vandekendelaere and MEP Frank Bogovic) on 7th of November, 2023, in Brussels, with the aim to foster the position of IOBC-WPRS as an independent and non-for profit scientific advisor on IPM in Europe.

Website activities

In a process of more than 2 years, the Website and Web shop of the IOBC-WPRS were completely rebuilt and updated. In addition, the service providing company has been changed. The new IOBC-WPRS website is mobile friendly and has a modern and fresh appearance, while keeping the traditional and very well-known “corporate identity” of the IOBC. In detail:

- The IOBC-WPRS website and web shop has been re-designed and simplified
- A new logo (essentially a refurbishment of the old logo) has been designed
- A new Bulletin cover has been designed (colourful, visually attractive, easily recognizable, with cover images that represent the meeting content or WG)
- A better implementation of the website and communication via Newsletter and social media has been achieved;
- The update of website contents is ongoing

Registration of the IOBC-WPRS as a non-profit organization (NPO) in Switzerland

After a very laborious and difficult way through many bureaucratic hurdles, IOBC-WPRS is finally registered in the Swiss commercial register. It will officially appear as a “non-for-profit” organisation in the commercial register in the end of 2023. One of the advantages of this process is that IOBC-WPRS has received a VAT number (UID): CHE-449.706.333. In addition, IOBC-WPRS is recognized by financial authorities as a non-for-profit organization and is exempt from municipal and direct federal taxes in Switzerland.

Future activities

Very briefly, the activities of IOBC-WPRS planned so far in the years 2024 and 2025 are to:

- Organize eight WG meetings in 2024 and eleven in 2025, respectively. In addition, the Commission “Young IOBC” is planning to organize a PhD symposium at IRTA, Cabrils, Spain, in April 2024, in order to attract especially students to the organisation’s activities;
- Publish special issues in BioControl and Biological Control, and Bulletins (in total 19 planned);
- Produce and update IP guidelines in close collaboration of the IP Commission with the dedicated WGs (upcoming updates: Soft fruits and Stone fruits, Landscape management for functional biodiversity, Integrated control protected crops -both temperate and Mediterranean-, Integrated Protection of Olive Crops);
- Write a position paper focusing on established/ naturalized exotic beneficial organisms. Both the Commission “Harmonisation of Invertebrate Biological Control Agents” and the WG “Benefits and Risks of Exotic Biological Control Agents” will be involved in the writing of this article:
- Produce general and harmonized guidelines on how to deal with student’s awards (e.g., harmonized criteria for the selection process) and make it available in the IOBC-WPRS website. They will also be included into the IOBC-WPRS Convenor’s Handbook.
- Production of promotional tools by the different WGs (e.g., short videos, webinar) with the aim to make social media presence of IOBC-WPRS more attractive. These tools will focus on the main aims of WGs, their activities and achievements, or report on meetings, and will be available on the IOBC-WPRS website, in the specific WG webpages, and on social media.
- Send at least one delegate to the IOBC Global general assembly in June 2024, in the frame of the 3rd International Conference on Biological Control in Costa Rica.

- Organize the next General Assembly of IOBC-WPRS in autumn 2025. Date and place are not fixed so far, one option discussed is meeting at the University of Thessaly in Greece.

Paula Baptista, General Secretary IOBC-WPRS, Bragança, Portugal, 20th November 2023

Biocontrol related events

Please see the complete lists of upcoming events related to biocontrol activities at the website of IOBC Global: www.IOBC-Global.org, and of IOBC-WPRS: <https://www.iobc-wprs.org/events/index.html#20210908>



ICE2024

Japan will host the **XXVII International Congress of Entomology** from August 25 – 30 in 2024, in Kyoto, Japan.

For more information on the congress:
<https://ice2024kyoto.jp>

Summary of IOBC Global Working Group meetings 2023



Benefits and Risks Associated with Exotic Biological Control Agents: On September 11th–14th, the University of Aveiro, Portugal, hosted the combined meeting of the IOBC-WPRS and IOBC-Global Working groups on “Benefits and Risks of Exotic Biological Control Agents”, BREBCA.23, <https://brebca2023.web.ua.pt>.

The meeting brought together several experts and professionals who work in areas related to the benefits and risks associated with exotic biological control agents. Representatives from various organisations and networks from different countries, including several European countries (Austria, Belgium, Brazil, Czechia, Spain, France, Italy, Portugal, Switzerland, The Netherlands, UK), South Africa, New Zealand, Canada, and the USA, with a total of about 40 participants. The opening ceremony was carried out by the Rector of the University of Aveiro, the director of CESAM (Centre for Environmental and Marine Studies), and representatives from IOBC-WPRS and IOBC-Global.

The main areas covered during the meeting were:

- Benefits and risks of exotic biological control agents for pests and emerging pathogenic organisms
- Interactions of biological control agents and native species

- Benefits and risks of exotic biological control agents in the world
- Synergies between different organisations and networks that deal with exotic biological control agents
- Benefits and risks of exotic biological control agents in agroforestry production systems
- Benefits and risks of biological control of invasive exotic plants
- Ecology of exotic biological control agents

A highlight moment was the round table chaired by Rob Tanner from EPPO, with representatives from the IOBC-WPRS, IOBC-Global, EPPO, CABI, and EUPHRESKO network having interesting discussions on the challenges posed to the implementation of biological control.

During the meeting a new convenor was elected by the IOBC-WPRS group, Dr. Marco Stacconi, from the Edmund Mach Foundation, Italy.

The social programme included, besides a boat trip on the Ria de Aveiro lagoon, a visit to the facilities of Raiz – Institute of research of forest and paper, which conducts research on the biological control of eucalyptus pests.

Olga Ameixa, Aveiro, Portugal



Participants at the Benefits and Risks of Exotic Biological Control Agents meeting in Portugal



IOBC Global Cactus Working Group

Contact: Iain Paterson; Email: i.paterson@ru.ac.za

The IOBC Global Cactus Working Group meeting was held at Foz do Iguazu on Sunday 7th May 2023. The meeting preceded the XVI International Symposium on Biological Control of Weeds. Twenty-eight people attended the meeting, which started with a brief introduction to the group and an introduction and explanation of their field of research from each attendee. This was followed by reports on cactus biocontrol from South Africa and Australia, and a discussion about the role of the cactus working group with regards to resolving conflicts between cactus growers, who often use biocontrol agents to control pests of cactus, and those using biocontrol to control invasive alien cacti. A resolution was made to compile a review article that could summarize the efforts of both weed and insect biocontrol practitioners who work with cactus and recommend ways for the conflicts of interest to be minimized so that the benefits of both management interventions can be realized to their maximum potential.

The IOBC Global Cactus Working Group aims to raise awareness about biological control as a safe and effective method for managing invasive alien cactus species and to promote the use of biocontrol to manage the pests of beneficial and indigenous cactus populations. The Cactaceae are endemic to the new world, with the exception of a single old-world species, the mistletoe cactus *Rhipsalis baccifera*. Biocontrol agents for both the cactus plants themselves, as well as the pests of the cactus, are therefore sourced in North, Central or South America. The countries with the most active biocontrol programmes against invasive alien Cactaceae are Australia and South Africa, but there are many countries that have serious problems with invasive alien cactus species and very limited or no biological control. One of the aims of the Global Cactus Working Group is to expand the use of cactus and cactus pests biocontrol where it is needed. In many countries in sub-Saharan Africa there are very few cactus agents released outside of South Africa, and in South Europe, where no cactus agents have been intentionally released despite the presence of several invasive cactus populations. On the other side, the cactus moth *Cactoblastis cactorum*, and the cactus mealybug *Hypogeococcus pungens*, are pests of indigenous cacti within the native range, and the cochineal *Dactylopius opuntiae*, is an invasive pest of cultivated cacti in Europe and North Africa. Biocontrol agents are being developed for all three of these insect pests. The Global Cactus Working Group intends to play a role in promoting informed discussion, and developing and implementing biocontrol agents for both cactus species and the pests of beneficial cacti in a way that conflicts of interest are minimized. The next action that the group will take is the development of a paper that will review both cactus biocontrol and biocontrol of cactus pests globally, highlight the need for collaboration between researchers in weed biocontrol and biocontrol of insect pests, and developing a strategy to promote the use of biocontrol where it is most needed.



Working Group: Classical Weed Biological Control (CWBC)

Contact: Harriet Hinz (CABI, Switzerland), h.hinz@cabi.org

Website: https://www.iobc-global.org/global_sg_Classical_Weed_BC.html

Proceedings of the XVI International Symposium on Biological Control of Weeds. Puerto Iguazú, Argentina, 216 pp. Cabrera Walsh G., Anderson F.E., Mc Kay F., Sosa A.J. and Hernández M.C., eds., 2023. https://www.iobc-global.org/global_sg_Classical_Weed_BC.html

For a report about the Iguazú meeting, see Global newsletter 113 on the Global website



Biological Control and Management of Eupatorieae Weeds

Contact: Michael Day; Email: tropicalweedbiocontrol@gmail.com

There have been various activities in different countries and regions towards initiating or improving biological control of Eupatorieae species.

The gall fly *Cecidochares connexa* has already been released in numerous countries in the Pacific region to control *Chromolaena odorata*. The latest reports show that *Chromolaena* populations in those

countries have been substantially reduced as a result. Several other countries in the Pacific region, namely Marshall Islands, New Caledonia and the Solomon Islands have all recently expressed interest in introducing the gall fly to help manage *Chromolaena*.

The gall fly has also been reported recently to reducing populations of *Chromolaena* in Timor Leste and India. In West Africa, the gall fly has been documented to spread to numerous countries following its initial release in Côte d'Ivoire in 2003. Work in Guinea and Liberia is now trying to document the establishment and spread of the gall fly in those two countries from the time of initial reports of establishment to present.

More recently, the citizen science platform, iNaturalist has been used to record the establishment and spread of the moth *Pareuchaetes pseudoinsulata*, also a biological control agent for *Chromolaena*. This entailed the correct identification of the species in each image. iNaturalist records confirmed that the moth is present in Thailand and Vietnam where it had been released earlier but reported not to have established. It had also been reported in Cambodia, China and West Malaysia where it had not been released previously. Unfortunately, it is not possible to determine as to whether the moth had originally established in Thailand and Vietnam, and populations were too low to detect, or that it had spread there, subsequent to its release in neighbouring countries, particularly India and Indonesia where it had established. Citizen science had been used to report the occurrence of species in new areas previously, but this is the first time, it has been used to track the establishment and spread of weed biological control agents. (Cock, M.J., Day, M.D., & Winston, R.L. 2023. Citizen science to monitor the establishment and spread of a biological control agent: the case of *Pareuchaetes pseudoinsulata* (Lepidoptera, Erebidae) for the control of *Chromolaena odorata* (Asteraceae) in South and South-East Asia. CABI Agriculture and Bioscience, 4, 1-6.).

Monitoring in PNG and Vanuatu have shown *Mikania micrantha* populations have decreased in some areas, as a result of the rust fungus *Puccinia spegazzinii*. Several other countries in the Pacific and Asia, have expressed interest in importing the rust to control mikania. In China, researchers have studied how the rust affects gene expression and impacts on the growth of mikania. Genes associated with pattern-triggered immunity and effector-triggered immunity showed higher expression following infection while many genes were downgraded. Plant growth promoting hormones were also significantly reduced, resulting in lower growth rates. These studies showed how the actions of pathogens can affect plant performance and validates their use as effective weed biological control agents. (Ren, X., Zhang, G., Jin, M., Wan, F., Day, M. D., Qian, W., & Liu, B. 2023. Metabolomics and transcriptomics reveal the response mechanisms of *Mikania micrantha* to *Puccinia spegazzinii* infection. Microorganisms, 11(3), 678; Zhang, G., Wang, C., Ren, X., Li, Z., Liu, C., Qiao, X., Shen, S., Zhang, F., Wan, F., Liu, B., Qian, W. 2023. Inhibition of invasive plant *Mikania micrantha* rapid growth by host-specific rust (*Puccinia spegazzinii*). Plant Physiology, 192(2), 1204-1220).

Future activities

We are trying to organize the next meeting for the Working Group for next year in Kerala, India. We are still in discussions with Kerala Forest Research Institute as to whether they can host it. The aim for having it in the subcontinent as opposed to having it in Costa Rica with the next IOBC Conference, is that we hope to get a lot more people from the subcontinent attending. Both *Chromolaena* and *Mikania micrantha* are major weeds in the region, but there has been reluctance for most countries in the region to implement biological control. The gall fly is established around Kerala and we hope to show attendees the impacts of the gall fly whilst highlighting that it does not attack other plant species.



Study Group: Biological control of insect pests of Solanaceous Crops (IOBC-BiCoSol)

Contact: Yulin Goa (Institute of Plant Protection, Chinese Academy of Agricultural Sciences) gaoyulin@caas.cn

In 2023, IOBC-BiCoSol mainly organized an international workshop and some field farmer schools for pest biocontrol.

- International Workshop:** Green Pest Control in Solanaceous Crops. From October 20 to 23, a three-day international workshop bringing together participants of IOBC-BiCoSol from China, Egypt, Pakistan, Germany, Kenya to discuss green pest management strategies in Solanaceous crops successfully concluded in Nanjing.
- Farmer School:** potato and tomato pest management. In August, a farmer school was organized by IOBC-BiCoSol in Eshan county, Yunnan province, China. The aim for this activity is to train the local farmers and agricultural extension workers on the topic 'Biocontrol and integrative pest management for the potato and tomato insect pests'



2024 Plan. In 2024, IOBC-BiCoSol will organize a second international workshop in the real field of potato and tomato, and some field farmer schools for pest biocontrol.

- Annual Meeting for the IOBC-BiCoSol Study Group.** In March 2024, our working group will carry out an annual meeting in Beijing or Hangzhou, to discuss the following issues: a) membership, by encouraging the current group members to invite more international scientists to join this group; b) planning, to make plans for the activities in 2025, and in the next 3 years, and the blueprint for the next 5 and 10 years; c) technical extension, to exchange ideas on how to push forward the key activity of our group-biocontrol technology extension globally, in different countries; d) impact improvement, to exchange ideas on preparing the flags, and citation of the group and how to present them in the science and extension activities by group members.
- Organize An International Workshop for IOBC-BiCoSol: Solanaceous Crop Pest Biological Control and Green Development of Agriculture.** In August 2024, IOBC-BiCoSol plans to organized an international workshop in Yuxi City, Yunnan province, China. The working group members, local farmers and agricultural extension workers will be invited to join this workshop. The workshop includes scientific reports, field visit, farmer school and discussions.



IOBC Global Commission on Biological Control and Access and Benefit Sharing

Contact: Peter Mason; Email: peter.mason@agr.gc.ca

2022-2023 Actions: A symposium, Access and Benefit Sharing and Biological Control Genetic Resources, organized by Peter Mason and Barbara Barratt, was presented at the International Congress of Entomology in

Helsinki, Finland in July 2022. Commission members Fernando McKay and Philip Weyl served as moderators and, due to restrictions on travel, several presentations were made by video. Based on this symposium a series of papers were published in a special issue of *BioControl* (<https://link.springer.com/journal/10526/volumes-and-issues/68-3>). Commission members Martin Hill (IOBC Global President) and Harriet Hinz attended the 19th Regular Session of the Food and Agriculture Organization Commission on Genetic Resources for Food and Agriculture in Rome, Italy in July 2023. They organized a side event and interacted with a number of attendees with discussion on the benefits of biological control.

Future actions: The IOBC Global Commission on Access and Benefit-Sharing needs to continue to engage with international organizations (e.g., Convention on Biological Diversity, FAO Commission on Genetic Resources for Food and Agriculture) and make the case for the benefits biological control makes to the global community. Documenting additional examples of the types of benefits provided by exchange and use of biocontrol agents and making these available to interested parties is needed.

Regional sections of IOBC Global



APRS

Asia-Pacific Regional Section ([APRS](#))

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ATRS

Afrotropical Regional Section ([ATRS](#))

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EPRS

East Palearctic Regional Section ([EPRS](#))

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NRS

Nearctic Regional Section ([NRS](#))

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NTRS

Neotropical Regional Section ([NTRS](#))

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WPRS

West Palearctic Regional Section ([WPRS](#))

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IOBC Global Working Groups



Mass Rearing and Quality Assurance ([MRQA](#))

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This past year the MRQA working group had a change in the con-
venorship, Prof. Maria Luisa Dindo, University of Bologna, stepped

down as a co-convenor after 6 years of leading the working group. Dr. Aloisio Coelho Jr., University of São Paulo, was elected to replace her during the 15th MRQA workshop held in Bologna.

A special issue entitled “Delivering on the Increasing Demand for High Quality Invertebrates” was published in the Journal of Insect Science. The special issue contains 10 articles from the 15th workshop, ranging from mass rearing and evaluating biological control agents for crop pests to mass rearing and evaluating pollinators.

The WG is planning an update for the quality control guidelines, considering the last one was published in 2003. In order to encompass all the subjects, we are calling for collaboration to all interested in the topic.

The WG received several applications requesting membership for our WG. As an attempt to keep the WG more active we ask the members for news or publications to be posted on our LinkedIn page (<https://www.linkedin.com/company/mrqa/>).



Ecology of Aphidophaga

Contact: J.P. Michaud; Email: jpmi@ksu.edu

We are planning the next meeting to be held at Università di Bologna, in Bologna, Italy, in September, 2025.



Biological Control and Management of Eupatorieae Weeds

Contact: Michael Day; Email: tropicalweedbiocontrol@gmail.com



Benefits and Risks Associated with Exotic Biological Control Agents

Contact: George Heimpel; Email: heimp001@umn.edu

Activities of this working group will be continued within the IOBC-WPRS working group; the global working group will terminate its activities



International Working Group on *Ostrinia* and other maize pests (IWGO)

Contact: Ulli kuhlmann; Email: u.kuhlmann@cabi.org



Biological Control and Management of *Parthenium* Weed

Contact: Lorraine Strathie; Email: strathiel@arc.agric.za

The International Parthenium Newsletter June 2022 issue reported on various activities around the world on this weed.

This newsletter is produced by the International Parthenium Weed Network and is produced in collaboration with the IOBC Working Group on Biological control and Management of Parthenium Weed. The next issue of this newsletter (likely Jan 2024) will carry more recent reports of various in-country research reports and activities.

The updated link for past newsletters is

http://apwss.org.in/APWSS_Working_Group_Newsletter.aspx

Mass Rearing of *Zygogramma bicolorata* for Augmentative Release to Suppress Parthenium Weed in Bangladesh

Madhab Chandra Das, Integrated Pest Management Activity, Dhaka, Bangladesh

Parthenium (*Parthenium hysterophorus* L. (Asteraceae) was first reported at Rajshahi in Bangladesh in 1988. It has spread throughout Bangladesh and has become a problem along the roadsides, vacant lots, parks, recreation areas and over 32 upland crop lands. It causes human and animal health issues, such as dermatitis and respiratory problems.

On October 24, 2022, the natural enemy *Zygogramma bicolorata* (Coleoptera: Chrysomelidae) (Fig. 1) was found fortuitously introduced at Choto Jambaira village (Latitude 24.8204471 and Longitude 88.2225504) of Bholarhat subdistrict area under Chapai Nawabgonj district (Muniappan and Das, 2022).

Patuakhali Science & Technology University (PSTU) in Bangladesh has taken up the task of mass rearing and field release of *Z. bicolorata*. Dr. Md. Mohasin Hussain Khan and his team went to Chapai Nawabgonj on September 8, 2023, collected the beetles and brought them to PSTU. Currently they are being reared in the laboratory. Already parthenium plants, collected around the Patuakhali city, have been planted in several pots in a net house for mass rearing the beetle. Once a robust culture of the beetle is established in the net house, initially they will be released in the parthenium infested fields in Patuakhali which is located in the southwestern part of Bangladesh. Eventually they will be field released in different parts of the country.



Reference: Muniappan, R., and M.C. Das. 2022. Fortuitous introduction of *Zygogramma bicolorata* Pallister in to Bangladesh. Indian Journal of Entomology. DoI. No.: 10.55446/IJE.2021.986

Zygogramma bicolorata on a *Parthenium hysterophorus* plant



Biological Control of Diamondback Moth & other Crucifer Insects

Contact: R. Srinivasan; Email: srini.ramasamy@worldveg.org



IOBC Global Cactus Working Group

Contact: Iain Paterson; Email: i.paterson@ru.ac.za; website:

www.ru.ac.za/centreforbiologicalcontrol/globalcactusworkinggroupgcwg

The next working IOBC Working Group Meeting will be held in Costa Rica at the Third International Congress on Biological Control (ICBC3) 24-27 June 2024.



CroProPol - Using Managed Pollinators to Disseminate Biological Control Agents & Natural Products

Contact: Peter Kevan; Email: pkevan@uoguelph.ca



Working Group: Classical Weed Biological Control (CWBC)

Contact: Harriet Hinz (CABI, Switzerland), h.hinz@cabi.org

Website: https://www.iobc-global.org/global_sg_Classical_Weed_BC.html

The Global Study Group on Classical Weed Biological Control was formed during the 15th International Symposium on Biological Control of Weeds (ISBCW) in Engelberg, Switzerland in August 2018. During the subsequent ISBCW in Argentina, the group had its first official meeting and can now call itself a Global Working Group.

Current co-convenors include:

- Hariet L. Hinz (chair), CABI Switzerland
- Chris Borkent, California Department of Food and Agriculture, USA
- Angela Bownes Manaaki Whenua – Landcare Research, New Zealand
- Guillermo Cabrera Walsh, FuEDEI, Argentina
- Jason Callandar, Queensland Department of Agriculture and Fisheries, Australia
- David Ensing, Agriculture and Agri-Food Canada
- Iain Paterson, Rhodes University, Centre for Biological Control, South Africa
- Michelle Rafter, CSIRO, Australia
- Melissa Smith, USDA-ARS, USA

This composition is different to other IOBC Global Working Groups, which usually have one convenor and potentially a deputy convenor. However, we felt that each of the countries or regions particularly active in classical weed biocontrol should be represented.

The group has three main objectives:

- Support activities in between ISBCW meetings
We are planning to organize webinars, likely 1-2 times per year, to discuss weed biocontrol related subjects in between the 4-yearly Symposia. These could for instance cover specific technical aspects and new methods or could be much broader with the aim of giving an overview of the current status and/or challenges in specific regions or countries.
- Develop an attractive and useful website
We are currently developing an interactive global map which will depict biocontrol facilities and institutions to increase awareness outside of the biocontrol community, and facilitate collaboration among biocontrol scientists and practitioners. Users will be able to click on institution points to get brief information about the facility, their main research aims, and generic contact information. Once up and running the website could be extended to include other information, such as recent biocontrol releases, job announcements or upcoming meetings.
- Support updates and maintenance of the ‘World Catalogue of Agents and Their Weeds’
We believe everybody agrees that the catalogue is an essential and powerful resource for the global biocontrol community. Keeping it up to date is the pre-requisite for its usefulness. The last update and current maintenance has mainly been supported by the U.S. Forest Service and by ibiocontrol (University of Georgia, USA), which is hosting the online version of the catalogue. To increase ownership and spread the financial risk of future updates, we are looking at ways to access end-year funding from organisations, grants, and individual contributions.

**Study Group: Biological control of insect pests of Solanaceous Crops (IOBC-BiCoSol)**

Contact: Yulin Goa (Institute of Plant Protection, Chinese Academy of Agricultural Sciences) gaoyulin@caas.cn

The first – virtual – meeting of this group is planned for 2023. Please check the IOBC Global website for dates and access.



IOBC Global Commission on Biological Control and Access and Benefit Sharing

Contact: Peter Mason; Email: peter.mason@agr.gc.ca

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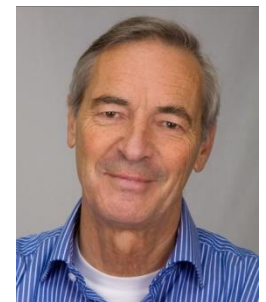
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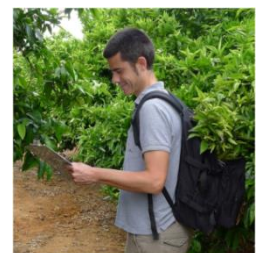
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Join IOBC

Membership in IOBC is open to all individuals and all organizations, public or private, who desire to promote the objectives of biological control. There are four categories of membership:

- Individual Membership is open to all individuals engaged or interested in biological control.
- Institutional Membership is open to any institution, including government departments, academies of science, universities, institutes and societies participating in biocontrol activities.
- Supporting Membership is open to any person or institution interested in promoting the objectives of the Organization.
- Honorary Membership may be conferred by the Council to anyone who has made outstanding contributions to biological control.

For more information and application forms:
<http://www.iobc-global.org/membership.html>

