INTERNATIONAL ORGANISATION FOR BIOLOGICAL CONTROL (IOBC)
ORGANISATION INTERNATIONALE DE LUTTE BIOLOGIQUE (OILB)
AFRO-TROPICAL REGIONAL SECTION (ATRS)
SECTION RÉGIONALE AFRO-TROPICALE (SRAT)

**Newsletter No. 1** **December 2017**

## An introduction to IOBC-ATRS

IOBC is comprised of six Regional Sections covering the inhabited globe. For some years, IOBC-ATRS, encompassing all African countries except Morocco, Algeria, Tunisia, Libya and Egypt, was the only Regional Section that was not active, with no executive committee appointed. This does not reflect the status of the discipline of biological control, which has a long and illustrious history in sub-Saharan Africa, and is still very active in many countries. IOBC-Global was therefore keen to reconstitute the Regional Section, and this was achieved in 2014 with the appointment of an Executive Committee. Since then, progress has been rather slow, but we are now in a position to accept members. This was important to achieve because there is no mechanism for IOBC membership other than through the Regional Sections. Members of IOBC-ATRS automatically become members of IOBC Global as well. The permanent Seat of IOBC-ATRS is at the newly established Centre for Biological Control at Rhodes University in South Africa. IOBC-ATRS aims to be fully bilingual, with English and French occupying an equivalent status. A website is planned, and funding for setting this up has now been secured. We would like to communicate with our members on a regular basis, to find out what they would like to gain from IOBC-ATRS, what they feel its role can be, and how they can contribute. Initially communication will be via this newsletter, which will either be supplemented or replaced by the website. We are aiming for two newsletters per annum at present.

The mission of IOBC-ATRS aligns with that of IOBC Global (http://www.iobc-global.org/about_iobc.html), for sub-Saharan Africa. Statutes have been developed for the Regional Section, and once the website is active (see below), will be uploaded onto it – at present, they are available on request.

The logo for IOBC-ATRS was conceptualized by the current IOBC-ATRS President, Dr René Poligui, and developed by Ms Elsa van Niekerk of ARC-PPRI (South Africa). It consists of a leaf representing the 43 sub-Saharan continental countries with IOBC-ATRS. Madagascar is represented by a fungal spore, while the island nations of Cabo Verde, Comoros, Mauritius, Sao Tome & Principe and the Seychelles are not represented. The leaf has been subjected to ectophagous feeding and necrotic damage. A predatory hemipteran is feeding on a lepidopteran larva on the leaf.

## The Executive Committee (2014-2018)

The Executive Committee consists of a President, two Vice Presidents, a Treasurer and a Secretary. In 2014, Dr René Noël Poligui was appointed as President, Dr Costas Zachariades and Dr Samira Mohamed as Vice Presidents, Dr Koffi Eric Kwadjo as Treasurer, and Dr Jean-François Vayssieres as Secretary, for the 2014-2018 period (Dr Vayssieres has subsequently left). The profiles of the current members of the executive committee are as follows:

Dr René Noël Poligui

René Noel POLIGUI is a Lecturer and Researcher in the *Institut National d'Agronomie et Biotechnologie* (INSAB) of the *University of Sciences and Technologies of Masuku*, France -ville (Gabon). He teaches and works in the field of plant protection, mainly in studies focused on tropical plant pests and related natural enemies.

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Dr Costas Zachariades

Costas works as a Senior Researcher for the Agricultural Research Council in South Africa, based at Cedara in KwaZulu-Natal province. He is an entomologist involved in the biological control of invasive alien plants, and in particular *Chromolaena odorata*, an asteraceous shrub originating in the Neotropics which is widely invasive across Africa. Costas previously (2007-2014) acted as Convenor of the IOBC-Global Working Group on this weed. He is also Officer-in-Charge at ARC's Plant Protection Research Institute laboratory at Cedara, and an Honorary Research Fellow in the School of Life Sciences of the University of KwaZulu-Natal.

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Dr Samira Mohamed

Samira Abuelgasim Mohamed, currently a senior scientist at the International Centre of Insect Physiology and Ecology (*icipe*), was the first African investigator to evaluate the efficiency of indigenous African parasitoid species, especially in the genus *Psyttalia*, against native African fruit flies. She carried out this study within the framework of the USDA-funded project "African Tephritidae: Invasive Species Threatening U.S. Fruit & Vegetable Products", a research project seeking to identify an efficient parasitoid for controlling *C. capitata* in US. Her findings formed the impetus of several studies that ensued in this arena.

Samira was involved in collaborative projects that shipped parasitoid species to Hawaii, Guatemala, Saint Helena and California for classical biological control of the most notorious pests; *C. capitata, Dacus ciliatus* and *Bactrocera oleae*. Following the invasion of the African continent by the most devastating fruit fly, *Bactrocera dorsalis* (initially described as *B. invadens*), which virtually crippled the fruit industry in Africa, Samira has been in the forefront in the classical biological control program targeting this pest. This program entailed introduction, evaluation and subsequent release of two efficient parasitoid species (*Fopius arisanus* and *Diachasmimorpha longicaudata* in Kenya and other African countries (which was spearheaded by Samira). Currently, the parasitoid is well established in several countries across the continent with up to 40% parasitism (in Kenya) on the target pest, thereby contributing to the suppression of this pest. Within a framework of a collaborative research project with international institutions, she also spearheaded the introduction of an efficient parasitoid from South America for classical biological control of *Tuta absoluta*, a destructive alien pest of tomato.

On the post-harvest arena, and in collaboration with the Citrus Research International and South Africa Avocado Growers Association (both in South Africa), Samira, have contributed immensely to the establishment of post-harvest disinfestations treatment parameters for orange and avocado against *B. dorsalis*. The outcome is a publication of vital information for the use of bilateral negotiation with trading partners for export of the African produce to regain access to the lucrative international markets, which have been lost as the result of the invasion by this pest and the subsequent ban of the African produce by importing countries. She was also one of the principle investigators in *icipe*-Finnish funded project "Climate change Impacts on Ecosystem services and Food Security in Eastern Africa" that was addressing climate Change related issues.

Samira has authored and co-authored over 40 peer reviewed articles including a recent review in Annual Review of Entomology in addition to seven book chapters. She is also a co-editor of the recently published book titled "Fruit Fly Research and Development in Africa: Towards a Sustainable Management Strategy to Improve Horticulture" (http://link.springer.com/book/10.1007/978-3-319-43226-7).

Samira is a principle investigator (PI) or Co-PI of several projects that are addressing knowledge gaps of key pests on important food and cash crops (mango, tomato, avocado and citrus). The implementation of the outcome of these projects resulted in significant enhancement of livelihood of millions of African growers and other stakeholders along the commodities value chain.

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Dr Koffi Eric Kwadjo

Dr Koffi Eric KWADJO has worked in the field of crop protection since 2001. He is interested in the interactions between insect pests, host plants and natural enemies. His research focuses on the integrated pest management, through the use of insect predators, parasitoids and entomopathogenic fungi. He has been fully involved in four major projects in Côte d'Ivoire. In 2016, he led a project on the development of the plan and training modules for national laboratory staff (8 countries) in the region plan for fruit flies monitoring and control in West Africa. This project was funded by ECOWAS and AFD. He has produced more than 25 publications on biological control agents and general agriculture issues. He collaborate with researchers from national and international institutions such as Royal Museum of Central Africa (Belgium), Saint Xavier's College (India), Sporometrics (Canada), the Canadian National Collection of Insects (CNC), Agriculture and Agri-Food Canada.

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## *Spodoptera frugiperda* (Lepidoptera, Noctuidae): one more agricultural threat for Africa

Within current acute agricultural threats in Africa, *Spodoptera frugiperda* (Lepidoptera, Noctuidae) is certainly the fastest spreading pest, invading all maize-producing countries in very little time; in just two years (2016-17), it was recorded for the first time in more than 40 sub-Saharan countries. This insect, commonly called *Fall Army worm* (FAW), is reported to originate from North America. The mode of its introduction into Africa is not yet clearly understood. The FAO estimates corn losses within 12 assessed African countries to range from 8.3 to 20.6 million tons per year, corresponding to 21 to 53% of maize production for three years in these countries, and as a USD 2 to 6 billion income loss.

This pest is really a major current threat for Africa, so that FAO has held meetings, respectively on 14-16 February 2017 in Harare (Zimbabwe), 25-26; 27-28 April 2017 in Nairobi (Kenya), 11-13 July 2017 in Kinshasa (DRC), 18-20 July 2017 in Accra (Ghana), 5-10 September 2017 in Abuja (Nigeria) and 02-07 October 2017 in Yaoundé (Cameroon).

Of the recommendations emanating from the latest meeting, an emphasis could be put on the following four: funding continual research, assessment of distribution and losses, training producers to recognize FAW (Figure 1), and development of suitable IPM strategies for control of FAW.

Therefore, biological control has a new exciting challenge in Africa. In Gabon, studies have been initiated, and Dr POLIGUI has observed some potential candidates feeding on eggs and larvae (Figure 2). Involvement of all fields of biological control would be beneficial in helping to overcome this challenge.

By: Dr RN Poligui, rnpoligui@gmail.com


**Figure 1:** Symptoms and pest (after POLIGUI, 2017). A) Damage on young maize plant; B) Fully grown larval instar.

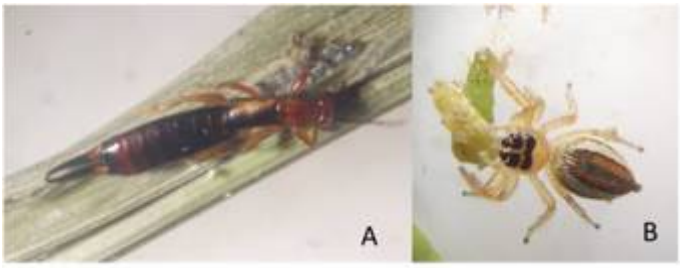


**Figure 2:** Predacious candidates recorded from Gabon (after POLIGUI, 2017). A) Earwig feeding on eggs; B) Spider sucking a 3rd larval instar.

## The new Centre for Biological Control at Rhodes University

On the 2nd of November 2017, the new Centre for Biological Control (CBC) was launched at Rhodes University in South Africa. The Centre will allow its staff and students to build on their work and achievements of the last 15 years by creating a hub for cultivating young scientists and increasing participation in national and international biological control initiatives.

Since 2002, the Biological Control Research Group (BCRG) under the leadership of Prof. Martin Hill has grown substantially. Over the years, the group has narrowed its focus to the classical biological control of weeds and the biological control of significant crop pests using microbial agents such as viruses and entomopathogenic fungi. The staff and students are based across four campuses in the Eastern Cape province of South Africa: Rhodes University campus, the Waainek Research Facility outside Grahamstown, the Uitenhage Research Facility and Citrus Research International offices in Port Elizabeth. At Rhodes University, students are based in the Departments of Zoology and Entomology, Microbiology, Botany, Chemistry and Economics. The research group has been committed to engaging with the community on biological control and, through these activities, it aims to inform people and empower them in the areas of mass-rearing, research and knowledge pertaining to biological control.

Dr Guy Preston, Deputy Director General in the South African Department of Environmental Affairs, and Prof. Martin Hill, Director of the CBC, at Waainek Research Facility, during the launch of the CBC.

Some of the CBC students ready to show the guests around the Waainek Research Facility during the launch of the CBC.

Although the Centre's research is mainly aimed at national problems, it is also involved in African projects in Morocco, Ghana, Cameroon, Kenya, Uganda, Mozambique and Madagascar. Farther afield, there is collaboration with colleagues in New Zealand, Australia, Argentina, Brazil, the USA and Europe, which involves partners in many institutions. There are many opportunities to increase these collaborations; for example, Rhodes University is the seat of the International Organisation for Biological Control (IOBC) – Afrotropical Regional Section, which puts us it in an excellent position to do so.

*The Centre's Vision:* To (i) sustainably control environmental and agricultural pests for the protection of ecosystems and the societies that depend on them, and (ii) ensure that the maximum benefits of biological control are realised through excellence in research, implementation and community engagement.

*The Centre's Mission: T*o make the Rhodes University Centre for Biological Control an internationally recognized research institute and a leading research centre.

By: Ms Kim Weaver, k.weaver@ru.ac.za

## On a technical note...

Website development

IOBC-Global, the Regional Sections and the Working Groups all make their own arrangements for creating websites. Discussions for creating a website for IOBC-ATRS have been ongoing since 2014, but have been constrained mainly for financial reasons. A recent commitment by IOBC-Global to fund the setting up of the IOBC-ATRS website will hopefully bring this to fruition in 2018.

Membership

For ease of administration, IOBC-ATRS membership will run within a calendar year (January to December). This is currently set at the reasonable rate of USD 25 for ordinary, individual members, with discount offered for students.

What do members want to gain from IOBC-ATRS?

We understand that there are several associations vying for your membership, and that as IOBC-ATRS we need to deliver some value for money to attract you. In becoming a member of IOBC-ATRS, you automatically become a member of IOBC-Global with its associated benefits; however, we would like to create a forum for the exchange of information and ideas, as well as for fostering collaboration and accessing funding, within our region of sub-Saharan Africa. Please let us know how you feel the IOBC-ATRS can best contribute to biological control and IPM in sub-Saharan Africa, where you feel there are gaps, if you have ideas, etc. You can contact the Executive Committee or send an email to admin@iobcatrs-oilbsrat.com and it will be forwarded to the Executive Committee for discussion.

Contributions please!

We would love to hear from you regarding your research, projects, and related work. Please send your contributions to admin@iobcatrs-oilbsrat.com. We may solicit articles from members from time to time.

French version

We aim to translate the newsletter into French once we are able to organize this.

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