

An Interview with...

Willem Ravensberg, President of IBMA (International Biocontrol Manufacturers Association)



WILLEM RAVENSBURG

Most of IBMA's membership is from Europe at large.

When put together, which percentage of the European market for biopesticides do your members represent?

Indeed, in July 2015 we had 235 members of which 115 Active members and 46 Associate members from the EU, thus roughly 70% of our members originate from Europe. The membership includes many SMEs, but also the main multinational agrochemical companies. My estimate is that we have most of the European companies active in biopesticides as a member of IBMA, probably over 90% of all players. We do not have members from the industry active with generic plant protection products.

Regarding the market share of biopesticides, current and reliable numbers are difficult to find, the estimate is still below 5% of sales of all pesticides. IBMA will hold a survey under members during the second part of this year to enquire about turnover in biopesticides, jobs and economic activities. We need the data to illustrate the importance of our growing industry to policy makers.

IBMA has developed good working collaborations with other biocontrol associations

such as BPIA, ANBP, IOBC, ABC Bio, etc. Where do you stand with the set-up of the International Federation and what will be the main purpose of this organization?

We have had the inaugural symposium of the Federation in March this year in Fresno, California. We are still developing a structure of the new organization. We will have a meeting again in October after ABIM in Basel. This will be an annual meeting. The subjects of the new federation is to cover common issues that all associations face globally. We have defined three common objectives. These are to harmonize regulatory decisions and acceptance, identify and engage with IGOs, NGOs and other global and regional partners, and lastly to agree and prepare stand-by statements for our industry.

Although most of the biocontrol companies are still small with limited resources, we have witnessed again a few major changes during this year. In less than five years, the biopesticide industry seems to have reached a concentration almost unheard of: Do you see the trend continuing, including in Europe?

I expect that this trend will continue, although in Europe with less acquisitions than in the USA. I foresee that various models of collaboration will continue to develop, with partnerships in R & D, in production and formulation arrangements, in distribution agreements, worldwide or in regions, etc.

In the past we have seen a strong consolidation of companies in the agrochemical industry as well as in the seed industry. I expect this to happen as well in the biopesticide (and biostimulant) world, but

at a slow pace. It took decades in the above mentioned industries, and I anticipate a similar speed in our industry. As biopesticides will play an increasing role in the portfolio of the larger players, they will try to catch up with the developments and invest capital in this sector by buying others. Alongside this there will be independent players as investment in product pipeline does not require as much money as for synthetic chemicals. I think distribution networks will be the main drivers for consolidation rather than rationalization of R & D expenses.

Again in 2015, a number of R&D companies, mainly focusing on microbials, have been acquired at substantial prices by bigger Groups although most of them do not seem to have a potential commercial product coming out in the market in the foreseeable future! Do you think this is a sign that the share of Microbial biopesticides will continue to grow in the medium term, meaning other substances such as natural extracts in particular, will continue to remain marginal?

The focus on microbials seem to be partly driven by underlying technology such as DNA, and maybe RNA knowledge and IP in these areas. A link to genetically modified plants is obvious. Secondly, there could be a link with the production technology, e.g. fermentation, which is in-house technology for some manufacturers. Think of products like spinosins which are derived from the production of a microorganism. This also refers to metabolites produced by microorganisms since knowledge of chemicals in the agrochemical industry is core competence. However, the potential of

plant extracts is enormous and I am sure products based on them will also be developed.

When will a relevant portfolio of bioherbicides exist?

That is a very interesting area of course, looking from the potential market. Research attempts in the past focused predominantly on plant pathogens, but these have failed largely. Other measures have been developed, mainly mechanical, which are used in organic agriculture, and will get more attention in IPM programmes. At the same time weeds may be valued differently in the future, as part of ecosystem services, and functional agrobiodiversity. New products will surely be developed as natural herbicides, the question is when and what kind.

When we last spoke a year ago, the regulation of biopesticides in Europe seemed to be on a very slow track, not to say in a dead end! Is it still the case today or has any progress been done? How many of the 54 pending registrations for active substances have now got registration?

We have the new regulation 1107/2009 since June 2011, about four years. That means that pending registrations were partly submitted under the old regime, and partly under 1107/2009. Judging from the outside there are no large changes, but behind the scenes many developments have and are taking place in which IBMA is also involved. The main one is developing guidance documents (GD). This is done by working groups of the EU and/or OECD. Examples are the GD for botanicals, on semiochemicals (in progress), and metabolites (in progress). The main benefit lies in the process of making these GDs

where experts of member states, EFSA and IBMA come together and where the dialogue is more open and expertise is shared and built up. The dialogue is taking place in an EU Expert Working Group on Biopesticides and an Expert Working Group on Low-risk Criteria. This improves the understanding of biopesticides and the risk assessment at all levels. I see how this slowly creates a better regulatory environment for our kind of products. More importantly IBMA is lobbying for criteria for low-risk substances and products and for improved procedures including a fast track process. This new process would provide a substantial improvement with regard to timelines and return of investment. We are not there yet but have seen the first three products go through the standing committee as low-risk and are working towards categorising those already approved substances as low-risk. The 54 pending substances are still partly not fully approved and we share common issues with synthetic chemicals regarding adherence to timelines, mutual recognition and zonal authorizations.

Any progress in the acceptance by the EU of lepidopteran pheromones as one group of actives?

The Straight Chain Lepidopteran Pheromones have now been accepted as one group of active substances. Any new SCLP within this range will be assessed for conformity within the group and noted as SCLPs.

By joining forces with New Ag International and 2B Monthly to co-organize a Biocontrol conference in India, Biocontrol Asia2015, earlier in March this year, IBMA showed a clear interest in a part of the world

that has not been a priority for the organization although in Asia there are as many Biocontrol companies as the whole Western world together. Have you been satisfied with the outcome of this inaugural conference? Has it resulted in new potential membership at IBMA?

Biocontrol Asia was a very good meeting, some world players were present as were many Indian companies. However, we lacked producers from other Asian countries. The Chinese industry was notably absent. It is clear that biocontrol is also rapidly gaining momentum in Asia and surely a follow up of this conference will be useful.

We have a few new members from India following the meeting in Delhi. Also our contacts with PMFAI have improved and we are considering a stronger collaboration.

In November 2016, we will be joining forces again to organize the inaugural Biocontrol Latin America conference in Brazil.

Do you see this event attracting more people than the Asia conference and is the market in the region more dynamic and advanced than the Asia one?

I am looking forward to having this meeting also in Latin America where biocontrol is rapidly growing. We should learn from the Asia conference and attract not only players active in Brazil, but also from other Latam countries. The potential in South-America for biocontrol is enormous and the business model different from Asia. Therefore I expect a large attendance and a very interesting conference with many examples of biocontrol used in practice, and boundless opportunities.

Field diagnosis of pests and diseases:

Do not forget your boots and your smartphone!



MARIANNE LOISON

Easy diagnosis with a smartphone and images has become possible and reliable. Ephytia soft-ware and its applications are now online on INRA website in order to help advisors and pathologists in their work.

Marianne Loison reports from the French Congress of Phytopathology that took place earlier in June this year.

Make it easier ! Diagnosis in the field is not always simple and clear. Though, looking precisely at the crop is always necessary to identify a problem. First you have to make the difference between biotic and abiotic problems. A biotic damage is due to parasitism, but it can be caused by a pest, a virus, a disease, a nematode or any another invader... An abiotic damage can be the consequence of nutrition deficiency, climate stress, phytotoxicity, physiological disorder... The problem is that very often, symptoms can be very similar even if causes are totally different

FOURTEEN CROPS COVERED BY INRA SMARTPHONE APPLICATION

At INRA Bordeaux Research Center (France), Dominique Blancard has worked to synthesize its knowledge in a program one can reach online. This application is called Ephytia and can be reached through the INRA portal. It is

already available for 14 crops. Dominique Blancard is a well-known pathologist who has been working since the eighties on vegetable diseases. He has gathered a great knowledge on symptoms and disease identification. Then he has tried to establish an easy way to compare different symptoms with images.

However we still have to go in the field to look at the problem before giving a diagnosis!" says Dominique Blancard." This is now also possible with nomad tools such as a smartphone , and our modules Di@gnoplant and Vigipl@nt. I have designed a field-application that is very easy to use".

The next step for INRA is to help in the choice of plant protection methods with smartphones. "We develop 'biocontrol with Koppert for greenhouses. This application helps to identify a pest and find the best auxiliary against it. It is avail-

able for most vegetables crops and it will be soon available for fruit crops." Dominique Blancard has another idea : using the diagnosis in the field to collect information for the network. "We would like to make participative science and gather fresh detections of pests and diseases from technicians.» The idea is also to identify the presence of new pests such as bacteria Xylella, which appeared in Italy and could make its way to France and other nearby countries." This bacteria's symptoms on various crops are not well-known. Building a network on its identification could be very useful to the whole community. But he recognizes that research needs a good network of pathogens experts to detect upcoming pests and diseases. In the near future, Dominique Blancard plans to widen Ephytia application (<http://ephytia.inra.fr>) to many other crops, with the contribution of other Institutes. ■



The INTERNATIONAL BIOCONTROL MANUFACTURERS ASSOCIATION CELEBRATES ITS 20 YEARS ANNIVERSARY

In 1995 Bernard Blum called a number of companies together to develop the idea of the formation of a biocontrol association. These visionary leaders anticipated an important and growing industry in the field of plant protection. Biocontrol was developing quickly in those early days, but there were also great challenges to the industry. Some companies did not survive the early stages of industry development. Registration was recognized as a huge hurdle to placing products on the market and the delays caused many innovative companies to suffer from this. It was necessary to organize the industry and start a dialogue with authorities. Beyond these regulatory issues it was also deemed important to promote biocontrol widely and to reach out to various stakeholders. A first meeting was hold early 1995 and was followed by a second meeting on September 14 in Paris. At this meeting the

International Biocontrol manufacturers Association, then abbreviated as BIO International, was created, having its seat in Paris. About 15 member companies were present. Bernard Blum was appointed as the first president of IBMA.

The first General Assembly Meeting (AGM) was held in Brighton, UK, on November 23, 1995. Thirteen companies were represented by about 20 persons, 7 companies were recorded as absent. Four Professional groups were established, the same ones still existing as the backbone of the present structure. Further, three Working Groups were initiated: Regulatory Affairs, Standards and Safety and Promotion. The heads of all these groups formed the Executive Committee, together with the President and the Treasurer. IBMA was officially founded and commenced its activities!

Novel bioprotections expected for seeds

Soil fungi and nematodes are a rising problem in plant protection, in tropical and temperate regions. Pythium, rhizoctonia, fusarium cause more and more problems on many crops. The use of soil disinfectants is banned in many countries and chemical fungicides cause residue problems. Hence there is a need for alternative and reliable solutions. Against soil pests, bioalternatives are expected with natural microorganisms (Paecilomyces, Trichoderma, Pseudomonas fluorescens...), which have various actions. For instance, Paecilomyces can colonize nematode eggs. Trichoderma has a fungicidal action, and is able to kill pathogens at the surface of seeds. And pseudomonas is a 'super' bacteria with many benefit actions. This is just a small range of microorganisms that could be added around seeds.

A DELICATE COMBINATION BETWEEN BIOCONTROL AND BIOSTIMULATION

A combination of useful microorganisms and additives is formulated by Koppert under the trade name

Seed treatment is considered as the key to row crops market for biocontrol products. This year the industry is going a step forward, with new biopreparations and formulations.

Panoramix. This liquid biological seed treatment combines useful microorganisms and additives. These microorganisms - a clever mix of Bacillus spp, Trichoderma species and endomycorrhiza - grow along with the roots and protect the crop during the entire growing season. Some microorganisms work well at lower temperatures and other microorganisms work effectively at higher temperatures. Bacillus spp. colonize roots at 8°C, improves the absorption of nutrients and protects against drought stress. Trichoderma spp. protects against salinity stress and boosts general resistance. Endomycorrhiza improves the absorption of available nutrients and protects against drought stress. The formulation includes additives such as vitamins, fulvic and humic acids. Koppert has developed the seed treatment on 2 crops: wheat and maize. The seed treatment give a more rapid crop growth and devel-

opment in the first week, according to tests in various countries and climate zones. The crop is more resistant to diseases, drought and saline/salt stress and the yield is optimized. In addition, the soil eventually becomes healthier thanks to the presence of the microorganisms. Panoramix seed treatment is available for on-farm use or for application by specialized companies. In order to keep the quality of the microorganisms, it is better to saw treated seeds immediately after application. In case of storage, a treatment up to one month before sowing is possible, and storage extended if seeds are treated under guided protocols. Panoramix, will be developed by Koppert on other seeds such as rice, soya, etc.

NEW COPPER FORMULATIONS AND NATURAL ACTIVE SUBSTANCES EXPLORED

For cereals seeds in European

countries, Nufarm has introduced Copseed. The formulation of copper tribasic sulfate (190 g/l Cu) is particularly light and sticks to the seeds. It had an homologation in 2014 in France and will be distributed for the first year in 2015. For the early stages, the target market is biological wheat. As copper only controls one disease (bunt), treatment with Copseed is not interesting for conventional seeds which need a more complete protection.

Many projects are in the pipeline for seed protection. In France the A-Seeds project gathers several partners including Bayer, Agrauxine, Lallemand, Sofrapar, INRA, CNRS to find new natural active substances in order to protect corn and wheat seeds. A priority for these companies as the European policy doesn't leave many conventional seed treatments on the market. Most of the repellent, fungicide and stimulating substances screened by A-Seeds, could be totally novel indeed! ■

Invasive pests and biocontrol responses

Giving quick answers to invasive pests and insects is a big issue for biocontrol. In the past ten years, more than 150 new alien insects were detected by entomologists in Western Europe.

Big problems have resulted from Tuta absoluta invasion on European tomato crops, and more recently by Drosophila suszuki on fruit-trees since 2010. In France, trials have been carried out since 2012 by the CNRS of Lyon on the ability of 2 native pupal parasitoids of Drosophila, Trichopria, to develop and parasitize successfully.

In the last two decades the tomato red spider mite, Tetranychus evansi has also expanded its geographical distribution in Europe. It is

emerging as a major invasive agricultural pest on Solanaceas crops.

CROPS NOT THE ONLY TARGETS OF INVADERS

Crops are not the only targets of invaders. Our close environment in Europe experiments new dangers, including the Asiatic yellow-legged hornet or the red palm weevil. Asiatic yellow-legged hornet has rapidly expanded its range through Europe with an impressive size of the colonies and a huge predation on beehives especially honeybees. Biocontrol solu-

tions against Asiatic hornet are orientated on traps and also natural parasitoids of this hornet (Pernis apivorus, Conops vesicularis...). Concerning Red palm weevil, two biocontrol solutions can be combined with Beauveria bassiana and Steinernema carpocapsae.

Under tropical conditions, invasive species are also circulating. The main reason is the exchange of goods between different continents and countries. Invasive pests often quoted are Bemisia tabaci on vegetables, Diaphorina ciri on citrus, Diptera on fruits...

Bemisia tabaci was analyzed in Martinique and the CIRAD scientists discovered a new biotype B, very polyphage. Chemical insecticides were not very efficient on these pests. But natural enemies or parasitoids as Orius, Miridae, Delphastus, Encarsia spp., Eretmocerus spp., Amitus were able to minimize the problems and could be used in PBI. On Diptera invasions on island of La Reunion, solutions were found by introducing new parasitoids and among them, Fopius arisanus do adapt to the environment. ■