

ABIM 2015: Many positive drivers for

Coinciding with the 20th Anniversary of IBMA, the 10th ABIM Conference has gathered more than 800 participants in Basel last October. Nice celebrations indeed, with a very good mood among delegates! The expected growth of the Biocontrol market ranges between 12 and 15% per year, with companies becoming stronger and many products innovations. M. Loison reports

IBMA - International Biocontrol Manufacturers Association - have held their annual conference in Bale-Switzerland for 2 years. During three days from 19th to 21st of October 2015, 394 companies and organisations from 47 countries attended ABIM 2015 conference in Basel congress center. The event was a big success for B2B

and networking. It also offered plenary sessions, with 43 oral presentations covering the latest news in market development, regulatory affairs and novel solutions for plant protection. Biocontrol development has been constant in the last 10 years. Lucius Tamm, member of the board of directors FIBL, co-organizer of ABIM since its inception, enu-

merated external drivers that have created opportunities: residue scandal in Almeria, bee colony collapse disorder, invasive species, reduction of registered chemicals, PPP residues limits, protection of biodiversity, spreading of glyphosate-resistant weeds, safety issues, etc. This global context in the past years has driven the plant protection sector to evolve and to introduce alternative biological methods.

are often family-owned and human-sized.” said Tamm. Anyway, he tempered his optimism adding that some risk still remains for biocontrol businesses: “regulatory framework is not sufficiently adapted, for instance to specific need of BCAs. And also, borderline technologies can affect the overall image”. But a new hope for Biocontrol product legislation takes shape in Europe. “There is a need for change, and Dutch presidency of the EU in 2016 will support sustainable initiatives” announced Luuk Van Duijn, director at Ctgb in the opening lecture of ABIM 2015. Dutch presidency suggests they

AN OPENING TO MAKE REGISTRATION FASTER IN EUROPE?

“Biocontrol has a positive image. Another positive point for the consumers is that manufacturers



All pics are courtesy of M. Loison

the Biocontrol market

will not make registration easier, but surely more specific. Faster approval for low-risk pesticides seems to be one of the priorities for the beginning of 2016 in the EU. Another step was the report on minor uses in the EU adopted in 2014 and signed in 2015 with EPP. "There are several proposals, databases and tool boxes available for minor uses." says Jeroen Meeussen from EPP. Europe is not the only part of the world to question itself. A positive driver for the market is expected in China, where the biopesticides revision is underway. China is one of the three largest agrochemical producing and import/export countries with more than 30,000 Plant protection products registered. "The Chinese government is making an effort to harmonize with OECD regulations, i.e. pesticide

definitions, data requirements, GLP compliance. So China will gradually phase out toxic chemicals and establish a withdrawal mechanism for old pesticides. A revision is underway for biocontrol products, which represent 12% of registered PPP in China", explains Hanh Chen from TGS. Another issue for the biocontrol industry is to deliver accurate image and communication. "Ten years ago, there was a lack of planning and analysis. Today, the situation has improved but it is important to deliver better messages. For instance, by banishing the term biopesticides, which has negative aspects." said Wyn Grant, from Warwick University. He points out that English farmers have big needs for biocontrol products, and that the industry and distributors should work

more with farmers. The impact of biocontrol was the theme explored during a full session of the ABIM conference. And it showed that farmers are today seeing more clearly what biocontrol can add to their business. Today in northern Europe, they have to deal with strong regulation and a small toolbox. Luc

Peeters from Belorta Belgium, which gathers 1,350 growers, made a precise list of benefits biocontrol can bring for farmers: reliable crop protection solutions; technical support to problems; research adapted to farm level; open communication, etc. "But what we need is more field research and practical solutions



for our farms. My conviction is that quick wins are already implemented for greenhouses. Big wins will be in open air vegetables." thinks Peters.

COMPANIES SIZE GROWING

A significant turnaround is that there are more big companies on the biocontrol market. Today five of them are selling more than



"Biocontrol has a positive image"
LUCIUS TAMM, FIBL

US\$100 million/year of biocontrol products according to Bill Dunham from Dunham&Trimmer consultants and also an Editor of 2BMonthly. At the same time, the sector is still generating new business creations. "60% of Biocontrol companies have been founded since 1990, in all parts of the world. 98% of these companies are privately held" points out Dunham. Global biocontrol market benchmark values increased in the same manner. From US\$100 million in 1993, it has reached US\$2 billion in 2014. And the growth is accelerating, with a US\$3 billion expected in 2016 for the world market". Dunham recalls that 250 different active principles and more than 1,000 Bioproducts are used around the world. The main active ingredients, accounting for 50% of total number, is Microbials. Macroorganisms come next, representing nearly 25%; Pheromones 15% and Plant extracts 10%. In terms of prod-

ucts, bioinsecticides and biofungicides are still the major sales. Market growth is expected to continue for the foreseeable future at a rate of +12% to +17% per year. According to Dunham, the market drivers will be regulatory, pest resistance, consumer demand for less chemical residues, and sustainability. He however remarks that unexpected problems (or unexpected lack of problem!) can change the market. The example of corn earworm in Brazil, a quarantine pest and voracious feeder, has provoked in the most recent years a growth of US\$100 million for the local biocontrol market. This corn earworm is not controlled by BT crops and chemicals. In continuous cropping and a tropical climate, it has created a 'perfect storm' with big losses in 2013 in Brazil and opened the door to alternative solutions. But in 2015, no problem with this pest was recorded! And the market for biocontrol solutions took a nosedive!

Among major Biocontrol companies, the economic analysis is about the same. "The growth of the market will continue at least



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BILL DUNHAM, 2BMONTHLY

for the next 10 years, coming from North America, Europe and also from emerging markets" says Ashish Malik, Global Head of Marketing of Biologicals for Bayer. "We expect the highest growth in

Europe, which is expected to pass the North American market as the largest region by 2018." Bayer runs 4 centers of R&D dedicated



"Our R&D works on bringing biosolutions to segments where they are not yet present"
DENIS TROALEN, VALENT BIOSCIENCES

to Biologicals in Europe, North and South America and has invested US\$1 billion in this research. Its fields of investigation are wide: Microbials, Biorationals, Macrobiotics and new technologies. Bayer is also looking at the way of better positioning Biologicals in IPM programmes with an 'integrated approach'. For Bayer, Biologicals will be complementing Agrochemicals. Valent Biosciences (Sumitomo Group) have the same purpose to combine conventional and biorational products, with a strategy based on complementary technologies. "Our focus goes from seed and soil protection to post-harvest products. And our R&D works on bringing biosolutions to segments where they are not yet present." says Denis Troalen from Valent. Since 2014, the Valent-Sumitomo Group have bought several companies: Pace, MGK and Myccorhizal Applications.

Other companies have a different approach. The Italian company Valagro, a newcomer to biocontrol, wants to expand through a deep knowledge of active ingredients coming from their technology platform. Valagro has acquired Sri

Biotech Lab India Ltd in March 2015, which gives the company a wider access to Asia-Pacific markets. "We want to base our strategy on these 3 B : biofertilizers, biostimulants and biocontrol. There is a need for increased productivity for farmers, who are in a situation of yield stagnation." says Prem Warrior - COO of Valagro. Looking ahead, Valagro also explores fields of "intelligent fertilizers", nanotechnology, crop diagnosis, precision agriculture. Partnership and concentration are the strategic pillars for the biggest companies.

Andermatt Biocontrol, created in Switzerland in 1988, is more specialised in biological protection, and was in the early days dedicated to organic farming with plant protection solutions based on baculovirus. But it has now expanded with a larger range of bioinsecticides, to international markets: Canada, France, Brazil and South Africa with a turnover of CHF 20 million. Since 2010, Andermatt has bought several biocontrol companies: Topcat, Sylva Technologies and Abitep. "Partnering is very important. The difficulty is that, today, it takes eight years for a product to be registered, which is too long." comments Daniel Zingg from



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TOM, GROOT, KOPPERT

Andermatt. Other specialised Biocontrol companies expand by a larger portfolio: for instance Koppert has gone from Macrobiotics distribution to crop pollinators and microbial products. In terms of strategy, there are clearly 2 types of actors: companies adding biocontrol portfolio to their chemical PPP and more-specialised companies fully dedicated to Bio-solutions.

INNOVATIVE NEW PRODUCTS

Another positive trend for biocontrol is that the portfolio is still expanding. Discovered by big or smaller companies, innovative biocontrol solutions are coming up in all categories. Microbiotics represent half of Biocontrol agents used in the world and 80% in China. At the ABIM Conference, the AgBiome company described a new fungicide based on pseudomonas bacteria: Howler. It will be launched in the US market in 2016, with a wide range of applications on pathogens such as Fusarium, Pythium, Rhizoctonia and Phytophthora. The German company Sourcon Padena also described a new potato fungicide Proradix, based on pseudomonas bacteria. The interest is a long-lasting action when this bacteria is applied to potatoes before planting: it protects the roots and the

crop against phytophthora, reduces silver scab and improves crop quality. Proradix is registered in Switzerland, northern Europe, and will soon be developed in other European countries.

Many research programmes on Microbiotics should bring new perspectives, as the focus is not only on one strain, but on favorable microbial communities for crops. BioConsortia, an R&D Company based in California and New Zealand and headed by Marcus Meadows Smith, former CEO of Agraquest which he sold to Bayer CropScience, is screening the best phenotypes taken from different soils, in order to create new microbial associations reducing crop stress. In the last 9 months, BioConsortia has already screened 150 microbial communities. "We see that 5 different soils give 5 different microbial communities. We explore this process and operate like plant breeders, select-



"We expect the highest growth of biocontrol market in Europe"
ASHISH MALIK, BAYER CROPSCIENCE

ing superior phenotypes. Then we make a shift in a microbial community to create new associations, more effective." explains Susan Tuner, Director of R&D. Microbial and plant interactions, as they will become gradually better understood, will certainly provide new perspectives for improving plants health. Different projects were described at ABIM Microbiotics session. In Austria, AIT

Health & Environment Department is investigating Trichoderma species. The goal is to know how these soil fungi can improve plants health by interactions which are still not fully explained. In South Korea, Chonbuk University is successfully testing the good potential of Beauveria bassiana against flower thrips. In Switzerland, Lonza has a know-how in large scale fermentation and works on optimization of microbial strains manufacturing, by reducing cycle time, and more generally, on the security of the supply chain.

NATURAL EXTRACTS AND MACROBIOTICS

In the Natural extracts sector, two innovations were introduced by Bayer Biologics and the Israeli company Botanocap. The Bioinsecticide Requiem formulated by Bayer has received an approval in Europe in August 2015 under the new EU regulation 1107/2009. The active ingredient -Terpenoid Blend QRD 460- is a blend of 3 natural plant-derived terpenes, extracted from a wild plant species (Chenopodium ambrosioides). These extracts have a strong knock-down effect, by different modes of action: disrupting insect mobility and respiration, and destroying insect pests cuticle. But the compound is safe to bees, IPM fit, with MLR exemption. Requiem provides control of sucking pests and extends quality of harvested produce. First registrations of Requiem are expected in some European countries before end of 2016. Market launch in Europe is planned for 2017. Requiem will be developed on citrus, potato, leek and onion crops. "Requiem is an important addition to integrated pest management (IPM) programmes in greenhouse vegetables. It gives a great flexibility to the farmer", points out Gilles Chevallier, Global Product Management Biological

Insecticides at Bayer CropScience. Botanocap is involved in natural extracts optimization by microencapsulation. The company has formulated another innovation with micro-encapsulated essential oils. Two formulations will be developed on potatoes to inhibit sprouting- Potatofresh- and on



"We also closely look at all the ways to improve delivery of natural enemies"
LISELOT VAN DER VEKEN, BIOBEST

grapes against botrytis - Botanofresh-. This product could also be used as an anti-oxidant agent on vegetables, to inhibit browning of harvested lettuce." We are among the first ones to formulate these micro-capsules and the delivery system is very innovative. It is not only based on encapsulating but also granulation", says Yigal Gezundhait from Botanocap.

In the Macrobiotics sector, Koppert and Biobest described their new fields of investigation and limitations. Recently, the Nagoya protocol introduced new rules to collect wild animal species which also includes beneficial insects or nematodes. The solution is now to collect most native natural enemies in each country. "We have to turn to a more-selective breeding of auxiliary insects." considers Tom Groot of Koppert. For Biobest, the screening on beneficials is now more open. For instance, it is also turned towards

preventive organisms. "We have found a few species (e.g. *Sphaerophoria ruepelli*) to establish before the aphids infestation, able to prevent the pest installation. Early detection of and combination of IBCA are the key to effective control of aphids in greenhouses." adds Liselot Van der Veken of Biobest. "And we also closely look at all the ways to improve delivery of natural enemies".

**INAUGURAL BERNARD BLUM
AWARD FOR NOVEL BIOCONTROL
SOLUTIONS GOES TO US COMPANY
VESTARON CORP**

The US company Vestaron Corporation is the winner of the inaugural Bernard Blum Award. The award ceremony took place on Monday 19th October in Basel, Switzerland, at the opening ceremony of the annual ABIM Congress, the largest Biopesticide industry gathering in the world. The Bernard Blum award was created by IBMA in memory of the association founding father Bernard Blum whom the award and trophy is dedicated to in this 20th anniversary of the formation of IBMA as an association. Dr Robert Kennedy, Chief Scientific Officer at Vestaron Corp, received the award from the hands of Dr

Willem Ravensberg, President of IBMA, accompanied by Jean Pierre Leymonie, MD of New Ag International & Editor of 2B Monthly, official partners of the Award.

Vestaron Corporation is a leader in the development and marketing of safe and effective bioinsecticides derived from naturally occurring peptides. The company received the award for its Spear product line (GS-omega/kappa-Htx-Hv1a) a series of bioinsecticides derived from spider peptides with activity on lepidoptera and coleoptera. The Spear product line also uses the addition of Bt (*Bacillus thuringiensis*) to improve performance as a part of an integrated pest management system. There were thirteen entries for this inaugural award. The judges panel, headed by Dr Owen Jones, a former President of IBMA responsible for Global Strategy at Suterra LLC until 2012, now an independent Consultant at Lisk & Jones in the UK, were unanimous in support of the three shortlisted entries and also on the ranking of the top three: In addition to the winner Vestaron, the company DCM & De Ceuster (Belgium) was ranked second and Belgium's Biobest was ranked number third. Inge Hanssen, R&D Manager at

DCM Corporation: "DCM Corporation is honoured that PMV[®]-01 was ranked number two for the inaugural Bernard Blum Award for Novel Biocontrol Solutions. We are very proud of this recognition. Our PMV[®]-01 plant vaccine is the result of many years of scientific research, which was performed in close collaboration with the Flemish tomato industry, and provides the growers with a biocontrol solution to combat this damaging viral disease. The PMV[®]-01 vaccination strategy protects tomato plants from severe losses in quality and yield caused by aggressive PepMV infections."

Thijs De Langhe, market development PMV[®]-01 commented: "The active substance of PMV[®]-01 is authorized under EC regulation 1107/2009. DCM Corporation is now ready for the next steps of bringing PMV[®]-01 to the market both in- and outside the EU. PMV[®]-01 was already applied under emergency authorisations on more than 1500 ha of tomatoes with excellent results."

Biobest and Lallemand Plant Care were also pleased that Flying Doctors with Prestop 4B was on the shortlisted. Sarah Van Beneden, Product Manager at Biobest, says: "We're pleased

with this recognition for our approach to sustainable strawberry and raspberry production. Flying Doctors bumblebees provide optimal pollination and dis-



"Why would anyone spend \$300M and wait 10 years for a synthetic, when you could spend \$10M over 5 years for an equivalently effective and yet safer product platform?"
DR ROBERT KENNEDY, VESTARON

tribute Prestop 4B to the flowers to achieve optimum natural protection against grey mold. With this new application technique we can achieve a continuous protection of the flowers with a limited amount of product. First introduced in Belgium, we expect the technology to be commercially available in 2016 in the Netherlands, France and Scandinavia"

Jean-Marc Sanchez, Area Manager at Lallemand Plant Care, also commented: "Next to our flagship product Prestop, the Prestop 4B is based on the same highly effective active ingredient, the beneficial fungus *Gliocladium catenulatum*. The formulation of Prestop 4B makes it suitable for distribution by bumblebees, a unique delivery system to control flowerborne diseases such as grey mold. We are pleased to collaborate with Biobest to advance this sustainable technology in berries and are jointly exploring possible further uses." ■



JP Leymonie, MD of New Ag International, partner magazine of the B. Blum Award, congratulates Dr Robert Kennedy in the presence of IBMA President W. Ravensberg.