

- March 2018 -

Biosolutions for agriculture

Biosolutions represent a strong booming market. However, many technologic and regulatory challenges remain.

This newsletter has been developed to help you to:

- Detect new business opportunities
- Follow regulatory development
- Learn about technological evolutions
- Identify funding sources for your projects

This newsletter is structured around the three main product categories commonly called biosolutions:

- Biopesticides
- Biostimulants
- Biofertilizers

We very much hope you will find it helpful for your activities and remain at your disposal for any question.

If you like to continue receiving the newsletter, please fill in subscription form which you will find on the last page of the document and return it to diximus@iar-pole.com

Sincerely,

IAR – The French Bioeconomy Cluster

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1. Biopesticides

1.1. News

A. COMPANIES

Kan Biosys: Advanced microbial technology provider to modern agriculture | 28/03/2018

Sandeepa Kanitkar, Chairperson and Managing Director of Kan biosys shared her professional knowledge on biopesticide in an interview by AgroPages.

Source : [agropages](#)

Dr Ulrich Kuhlmann unveils Biopesticides Portal prototype at Biocontrol Africa conference | 21/03/2018

Dr Ulrich Kuhlmann, CABI's Executive Director Global Operations, has unveiled a prototype Biopesticides Portal that facilitates the identification, sourcing and application of more environmentally-friendly, cost-effective and sustainable biological control products in the global fights against agricultural pests and diseases.

Source : [cabi](#)

Stockton Rebrands, Changes Name to STK | 09/03/2018

Stockton, the innovative Israel – based leader in bio-ag technology for sustainable crop protection and aquaculture, has announced a company name change. The new name is STK,

which reflects the company's transition from its legacy business in generic agrochemicals to its current strategy and R & D leadership in bio-ag technology and botanical-based solutions (BBS), such as its flagship product Timorex Gold biofungicide.

Source : [agribusinessglobal](#)

B. PRODUCT LAUNCH

Fungus kills bed bugs - first used in Oklahoma by pied piper | 27/03/2018

To better serve customers and successfully eliminate bed bug problems both commercially and residentially, Pied Piper Services is now the first Oklahoma pest control company to provide revolutionary Aprehend® treatments for bed bug control. Composed of *Beauveria bassiana* fungal spores, the proprietary formulation of Aprehend® is [...]making it extremely effective in commercial applications such as hotels, motels or multi-family housing. For the ultimate protection against bed bug infestation, treatments can be administered quarterly for continuous support year-round.

Source : [prnewires](#)

Nichino Announces New Fungicide for Powdery Mildew Control | 26/03/2018

Nichino America, Inc. has introduced Gatten, a new fungicide for powdery mildew control in

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grapes and other crops. Nichino and OAT Agro Co., Ltd., the discoverer and manufacturer of Gatten, have reached an agreement for Nichino America to market and sell Gatten in the U.S. and Canada [...]

Source : [growingproduce](#)

Certis Europe launches new powdery mildew control | 20/03/2018

Certis Europe has launched a new bio-fungicide to control powdery mildew in a range of crops. The disease, which affects a range of crops including soft fruit, top fruit, gourds and grapes, is notorious for damaging yields and fruit quality.

Source : [certis](#)

Bioline expands Amblyseius andersoni line with new sachet format | 16/03/2018

Created by placing a water-resistant Anderline sachet on a stick, Bioline's latest product follows the Amblyline Stick and Swirskiline Stick that Bioline AgroSciences introduced to the market back in 2015. However, unlike Swirskiline and Amblyline which are formulated to fight thrips and whitefly, Anderline Stick is implemented during the most critical time of vegetable and ornamental development [...]

Source : [hortidaily](#)

Monsanto Previews Current, Future Pipeline Offerings | 15/03/2018

During a recent conference call with the media, Dr. Robb Fraley, Chief Technology Officer, said that 2018 will mark the fifth consecutive year

that Monsanto has seen more than 20 advancements to products in its research and development pipeline. Biological seed treatments such as Acceleron B-300 SAT and Acceleron B-360 ST help plants build healthy root systems [...]

Source : [croplife](#)

Koppert launches bioinsecticide Boveril for control of coffee borer in Brazil | 14/03/2018

Koppert has launched Boveril in Brazil, a bioinsecticide with the conidia fungus active ingredient Beauveria bassiana, which can control coffee borer beetle (Hypothenemus hampei). –

Source : [agropages](#)

Seipasa presents the new biopesticide Seican in the USA | 13/03/2018

Seipasa, a company specialized in the formulation, development and marketing of botanical-based solutions (biopesticides, biostimulants and fertilizers) for agriculture, presented the new biopesticide Seican in the USA within the framework of the BioControls USA West Conference, the event where the latest trends concerning biological pest control are unveiled. –

Source : [seipasa](#)

Belchim launches natural herbicide Katoun Gold as alternative to glyphosate | 12/03/2018

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Belchim Crop Protection has just launched Katoun Gold (500 g/L fatty acid pelargonic acid), a natural herbicide that guarantees to be an effective alternative to glyphosate, for the management of vegetable coverage in urban areas and roads in Portugal. It is already available in the Portuguese market and sold in the country by Fitosistema.

Source : [agropages](#)

C. PRODUCT CERTIFICATION & HOMOLOGATION

ADAMA's bactericide/fungicide Mastercop gets OMRI label | 29/03/2018

ADAMA USA recently announced that it has received Organic Materials Review Institute (OMRI) listing for Mastercop bactericide/fungicide, a solution of copper sulfate pentahydrate with BioRetain technology.

Source : [agropages](#)

Application for improved rabbit biocontrol | 22/03/2018

Environment Canterbury announced today that its application on behalf of a co-ordinating group ("RCG") to release a new variant of rabbit haemorrhagic disease was aiming for a release date of March 2018. The new variant, known as RHDV1 K5, has already been approved in Australia and release there is currently underway.

Source : [scoop](#)

BASF's Integral® Pro approved by France, the first biocontrol seed treatment for rapeseed | 22/03/2018

BASF France Agro has just obtained the approval of Integral® Pro, the first biocontrol seed treatment for rapeseed. Seeds are protected from sowing against soil-pathogenic fungi, other than pythiids, which are responsible for seeding fires. Integral® Pro is a biofungicide composed of *Bacillus amyloliquefaciens* strain MBI 600. It is registered as a plant protection product in Schedule 3 in France.

Source : [basf](#)

Indigo receives first organic certification for microbial seed treatment | 21/03/2018

Indigo Ag, Inc. has received organic certification for the company's microbial seed treatment in corn. This certification was awarded by the Organic Materials Review Institute (OMRI), a non-profit organization that provides an independent review of products intended for use in certified organic production and processing. OMRI's review confirmed that Indigo's microbial product is compliant with the standards of the USDA's National Organic Program.

Source : [indigoag](#)

ADAMA's Nimitz Gets Regulatory Approval in Brazil | 13/03/2018

Global crop protection company ADAMA announced that it has successfully obtained regulatory approval for its proprietary nematicide, NIMITZ®, in Brazil. This follows

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NIMITZ receiving a number of other registrations worldwide, such as in the US, Mexico, Australia, Israel and most recently in Chile. NIMITZ is a novel, non-fumigant nematicide with higher user safety and sustainability, [...]

Source : [agribusinessglobal](#)

Australia OKs Bayer's Serenade Opti biofungicide – 01/03/2018

Bayer Cropscience Pty Ltd has applied to the APVMA for registration of the new product Serenade Opti Biofungicide containing not less than 1.3×10^{10} colony forming units (CFU) per gram of the new active constituent *Bacillus amyloliquefaciens* strain QST 713 as a wettable powder formulation. Serenade Opti Biofungicide contains a strain of bacterium originally identified as *B. subtilis* strain QST 713 as the active constituent.

Source : [apvma](#)

D. PARTNERSHIP & ACQUISITION

Monsanto, AgriMetis Enter Global Licensing Agreement | 12/03/2018

Monsanto Co. and AgriMetis have announced an exclusive collaboration for Monsanto's continued research with AgriMetis' SpinoMetis platform, which includes novel insect protection compounds derived from a naturally-occurring bacterium. According to Monsanto, the SpinoMetis platform builds on the established safety and efficacy profiles of other products of the same origin to provide a semi-synthetic, [...]

Source : [agribusinessglobal](#)

E. START-UP NEWS

Eight start-ups to pitch at world agri-tech innovation summit | 11/03/2018

Eight ag tech start-ups have been chosen from more than 150 entries to present their ideas at the World Agri-Tech Pitch Day in San Francisco on March 19, 2018. The winner will receive a \$250,000 investment from Radicle Growth, a seed-stage ag tech acceleration fund. –

Source : [agriculture](#)

Agtech startup TSSE raises US\$3M to provide biological pesticide substitutes to farmers in Taiwan | 02/03/2018

Agriculture technology startup Taiwan Shennong Social Enterprise Co. (TSSE) has secured US\$3 million in Series A round of investment from Singapore-based Bravovia Capital. The Taichung City (Taiwan)-based startup will use a third of the investment to create advanced agricultural and biotechnology research and development centre (AABC), in partnership with Chaoyang University of Science and Technology (CYUT). TSSE was technologically supported by CYUT's Pheromones Centre and incubated by the Business Incubator of CYUT.

Source : [e27](#)

F. ACADEMIC NEWS

'Micro magnets' method detects pesticides in veggies | 27/03/2018

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Recently, food scientists have created a quick and highly sensitive screening technique that can detect even tiny amounts of a synthetic pesticide in vegetables. Their process uses magnetic nanoparticles to simplify extraction of the pesticide (pyrethroid) reducing the screening process to under two hours. These kinds of pesticides are widely used in vegetable farming and while they improve crop yield, eating fruits and vegetables that have been treated with them can lead to adverse health effects.

Source : [freshplaza](#)

Researchers find that beetle odor could help tackle tamarisk | 27/03/2018

In the fight against an invasive plant colonizing portions of the state, a Montana State University doctoral student is luring shrub-munching beetles with an odor as tantalizing to them as the smell of bacon and pancakes, or perhaps a barbecue, is to humans.

Source : [phys.org](#)

KSU researchers make breakthrough on pigweed glyphosate resistance | 22/03/2018

Kansas State University researchers have discovered how weeds develop resistance to the popular herbicide glyphosate, a finding that could have broad future implications in agriculture and many other industries. Their work is detailed in an article [...]

Source : [agupdate](#)

Research identifies enzymes in bees that determine neonicotinoid sensitivity | 22/03/2018

A study has discovered enzymes in honey bees and bumble bees that determine how sensitive they are to different neonicotinoid insecticides. By the time a pesticide reaches the market, each crop protection product will have cost, on average, \$286 million and required 11 years of research and development to ensure [...]

Source : [agriculture](#)

Spanish researchers develop biological products to combat Monilinia in stone fruits | 21/03/2018

Spanish researchers from the Institute of Agrifood Research and Technology (IRTA), Neus Teixidó, together with the staff of Postharvest pathology, has directed a task of the European project BIOCOTES with the goal of developing two biological control products to combat brown rot in stone fruits.

Source : [agropages](#)

Brazilians use silicon to control nematode in coffee | 20/03/2018

Nematodes drastically affects the root system of the coffee plant, where it causes necrosis and cracking, reducing the absorption of water and nutrients, affecting the development and production of plants, making them weak and depleted, even resulting in their death, according to portal Global Agrochemicals.

Source : [agrinoon](#)

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Penn State researchers tackling mushroom phorid fly infestations | 19/03/2018

Working with mushroom growers and residents in southern Chester County, Penn State's College of Agricultural Sciences is ramping up ongoing research efforts to alleviate mushroom phorid fly infestations in southeastern Pennsylvania. The mushroom phorid fly problem was triggered in 2012 when the U.S. Environmental Protection Agency ruled that an insecticide mushroom growers had used successfully for decades to control the pest — diazinon — could no longer be used in mushroom production because of its toxicity.

Source : news.psu.edu

Scientists discuss sex-less insects | 14/03/2018

More than 20 scientists from across the globe will get together in New Zealand to discuss a new method to stop insect pests reproducing. Experts from South America, Africa, India, Canada and Europe are meeting in Palmerston North to discuss advances in the sterile insect technique – a new weapon against insect pests. The technique involves releasing large numbers of sterile insects [...]

Source : scoop

Predatory birds can successfully replace pesticide use in agriculture | 08/03/2018

Simple approaches that increase populations of vertebrate predators, like bats and falcons on farms, can reduce pesticide use, increase on-farm productivity, and conserve wildlife, according to a literature review published by researchers at Michigan State University in the

journal *Agriculture, Ecosystems and Environment*.

Source : beyondpesticides

New biocontrol agent against wandering jew to be released | 01/03/2018

The release of the tradescantia yellow leaf spot fungus will be made on 5 March at Rotorua by the Bay of Plenty Regional Council and Manaaki Whenua Landcare Research. Tradescantia, a...]so known as wandering jew and wandering willie, is an insidious weed that quickly takes over gardens as well as local reserves and is known to give dogs dermatitis. It is hard to get rid of because [...]

Source : scoop

1.2. Regulation/Soft law

A. SYNTHETIC PESTICIDE BANS AND RESTRICTION

Scientists urge action to protect California waterways from neonicotinoid insecticides | 15/03/2018

On Tuesday, a group of 56 scientists studying the effects of neonicotinoids sent a letter to California's Department of Pesticide Regulation (CDPR) highlighting the threat neonicotinoids pose to the health of California's waterways. The scientists urge CDPR to take steps to reduce neonicotinoid contamination of the

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state's streams and rivers. This comes as neonicotinoids were recently reported to be pervasive throughout the Great Lakes, and federal assessments confirm high risks to aquatic species.

Source : [beyondpesticides](#)

EU to amend MRL for pesticides in certain products | 19/03/2018

On January 16, 2018, the European Union has announced three Commission Regulations amending Annexes II, III and IV to Directive 2005/396/EC of the European Parliament and of the Council with regard to maximum residue levels (MRL) for pesticide in or on food and feed of plant and animal origin.

Source : [sgs](#)

New European Parliament's pesticides committee begins work | 15/03/2018

The European Parliament's committee on pesticides (PEST) held its inaugural meeting on Monday (12 March) with a mission to shed light on the controversial EU approval procedure - even though its actual mandate will not assure a legislative follow-up. PEST is parliament's reply to the concerns raised by some one million European citizens, plus MEPs and NGOs, around the EU's renewal of glyphosate – used in Monsanto's Roundup.

Source : [euobserver](#)

Dover, New Hampshire eliminates toxic pesticide and fertilizer use | 06/03/2018

Dover, New Hampshire is the latest community in the U.S. to restrict the use of toxic pesticides, and move towards organic land management on all public property. The ordinance also instructs the city manager to “develop and execute a plan to transition the City to eliminate the use of synthetic fertilizers on City property.”

Source : [beyondpesticides](#)

European Regulators Confirm Neonicotinoids Harm Bee, increasing likelihood of continent wide ban | 02/03/2018

Neonicotinoids, the most widely used class of insecticides in the world, do pose risks to honey bees and wild pollinators, according to a comprehensive assessment released last week by the European Food Safety Authority (EFSA). Encompassing an analysis of over 1,500 studies from academia, beekeeper associations, chemical companies, farmer groups, non-governmental organizations, and national regulators, EFSA's risk assessment provides a definitive, independent conclusion [...]

Source : [beyondpesticide](#)

B. BIOPESTICIDE REGULATION

Biopesticide Regulation: A Comparison of EU and U.S. Approval Processes | 28/03/2018

Biopesticides (microbial pesticides, bio-derived chemicals, and plant-incorporated protectants) introduce unique and complex modes of action and may be used in plant production on an equal footing with chemical pesticides. Even

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though biopesticides have been commercially used for over 60 years, they have generally been evaluated and registered following the model for the registration of conventional pesticides, and laws and policies regulating their use vary from country to country. Submission procedures have often been lengthy, and the high cost of registration has limited the commercialization of new and safer biopesticidal products, particularly in the EU.

Source : [agribusinessglobal](#)

C. PUBLIC & PRIVATE INCENTIVES

USDA allocates \$70 million to combat pests and diseases |

22/03/2018

USDA's Under Secretary for Marketing and Regulatory Programs Greg Ibach March 22 announced that USDA is allocating almost \$70 million from Section 10007 of the 2014 Farm Bill to support 494 projects in 49 states, Guam and Puerto Rico. These projects prevent the introduction or spread of invasive plant pests and diseases that threaten U.S. agriculture and the environment, as well as ensure the availability of a healthy supply of clean plant stock in the United States.

Source : [fruitgrower](#)

1.3. R&D projects

ERACoBioTech - SUSPHIRE - Sustainable Bioproduction of Pheromones for Insect Pest

Control in Agriculture |

01/04/2018

Period : 2018 - 2021

Funders: BBSRC (UK)

Budget : £395 316

Performing institution : The Genome Analysis Centre

The SUSPHIRE project aims to provide a sustainable, low-cost manufacturing platform for the commercial production of insect pheromones and reduce the cost of production of pheromones that are currently commercially non-viable. The introduction of these biotechnology approaches to pheromone production will expand the use of sex pheromones for sustainable pest control in agriculture, reducing its current environmental impact and providing sustainable manufacturing platforms.

Source : [ukri](#)

Diversity, functions, and applications of insect-associated microbiomes |

19/03/2018

Period : 2018 - 2023

Funders: USDA

Budget : NC

Performing institution/COORDINATOR: University Of Florida

Insects, including agriculturally- and medically-relevant pests, are associated with a complex community of microorganisms, collectively termed "the microbiome". Intrinsically, insect microbiomes are central to insect physiology, encompassing a wide spectrum of interactions, from mutualism to parasitism and pathogenesis. Externally, the activities of insect microbiomes have far reaching impacts on the health and functions of our global ecosystem, including nutrient cycling, human and plant disease

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transmission, insect invasion, and biocontrol. Despite the ubiquity [...]

Source : [cris](#)

Biology and control of arthropod pests of horticultural crops | 19/03/2018

Period : 2018 - 2023

Funders: USDA

Budget : NC

Performing institution : University Of Florida

The use of cultural and biological controls is necessary for growers who have restrictions on insecticide use, such as growers who produce in protected structures, as well as small-scale diversified growers and organic growers. Because of the growing importance of protected agriculture in Florida, there is a need to develop appropriate guidelines for the use of commercially-available biocontrol agents for management of pests of horticultural crops grown in greenhouses, screen houses and high tunnels. [...]

Source : [cris](#)

Investigation of the diversity of phytoseiid predatory mites in watermelon and tomato and their use of non-prey reSources | 01/03/2018

Period : 2018 - 2020

Funders: USDA

Budget : \$162,750

Performing institution : Clemson University

Outbreaks of twospotted spider mite (TSSM) (*Tetranychus urticae*) have increased in incidence and severity in southeastern vegetable crops, including tomato and

watermelon. Management of TSSM is difficult due to suspected resistance of populations to several acaricides. Endemic predatory mites (Phytoseiidae) show promise for controlling TSSM, yet little is known regarding what factors affect phytoseiid abundance, nor the role of non-prey reSources for these predators, in open-field vegetable agroecosystems. This research project is the first investigation into the diversity of and reSources for endemic phytoseiids in vegetable agroecosystems in the U.S. [...]

Source : [cris](#)

1.4. Reports

A. MARKET STUDIES

Brazil, China, France to drive rapid biopesticide growth | 09/03/2018

The biopesticides market grew 24% from 2014 to 2016 globally to over \$1.8 billion, finds the recently published report *Global Biopesticides: An Overview of Natural and Microbial Pesticides* by research and management consulting firm Kline. The market is expected to continue growing at double-digit rates over the next decade, driven by robust growth in countries like Brazil, China, and France. Currently, the United States, China, and Italy are the largest markets, accounting for almost 80% of the total global sales. Moreover, the United States has a large consumer biopesticides market, which accounts for almost 12% of the global biopesticides market.

Source : [agribusinessglobal](#)

B. MARKET TRENDS

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Biocontrol in demand from produce retailers and consumers | 13/03/2018

Biological control has moved into the mainstream. After years of experimentation and new and improved technologies, biocontrol is becoming a more regular part of many growers' integrated pest management (IPM) programs. And the timing couldn't be better, as consumer demands for more sustainable production methods for the produce and ornamentals they buy are moving back upstream. Retailers have taken notice and many are beginning to set expectations for what they want to see from the growers they choose to buy from.

Source : [growingproduce](#)

Biological products coming up big for agriculture | 14/03/2018

The biological segment of agriculture is really beginning to take off, and that was evident at the 2018 Commodity Classic in Anaheim. "When I look at ag in general and I look at the nutrient requirements as we kind of expand our knowledge on how we feed these crops, it's going to be vitally important for us to look at these new technologies in the biological industry to advance yields and quality while kind of keeping that eye on the environmental aspects of nutrients.

Source : [agwired](#)

Greenhouse biocontrol goes mainstream | 13/03/2018

Biological control has moved into the mainstream for greenhouse growers. After years of experimentation and new and improved technologies, these tools are becoming a regular part of integrated pest

management (IPM) programs. And the timing couldn't be better, as consumer demands for more sustainable production methods for the plants they buy are moving back upstream. Retailers have taken notice and many are beginning to set expectations for what they want to see from the growers they choose to buy from.

Source : [greenhousegrower](#)

C. TECHNICAL TOPICS & REVIEWS

Pesticide action week: there is always an alternative | 28/03/2018

Alternatives do exist. As a matter of fact, there are always alternatives, but not all farmers are willing to use them and, most importantly, sometimes not everyone can use them. It is very important, however, to try to minimize the use of chemicals even in these cases.

Source : [slowfood](#)

Tips on thrips: Management in the greenhouse | 26/03/2018

One of the most predictable and chronic pests of greenhouse crops is the western flower thrip. This thrip species is the main pest found in greenhouses and has been particularly problematic since its introduction to Canada in the 1990s. Factors leading to the establishment of thrips in greenhouse crops include its short generation time, ability to disperse rapidly, [...]

Source : [greenhousecanada](#)

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Why African farmers should balance pesticides with other control methods | 21/03/2018

Insect pests cause almost half of the crop losses in Africa. If the continent is to feed its growing population, farmers must find ways to control them. Pests account for high losses in other developing regions too.

Source : [theconversation](#)

How biocontrols fit into a traditional pest control program | 21/03/2018

One of the great strengths of using biocontrols is that it allows growers to use traditional chemistries less often, says Surendra Dara, Strawberry and Vegetable Crop Advisor with the University of California Cooperative Extension. Dara was speaking to a packed room at the Biocontrols USA West conference [...]

Source : [growingproduce](#)

Got Aphids? Call in the reinforcements with banker plants | 13/03/2018

Undeniably, a relatively new and promising strategy of biological pest control called “banker plants” has a name that lends itself to painfully obvious puns. Be that as it may, you can bank on it—or, if you prefer, take it to the bank—that banker plant systems have a key role to play in integrated pest management (IPM), especially when employed in greenhouses. Also known, more formidably, as “open-rearing systems,” banker plants are mobile habitats that supply growers with predators and parasites which are natural enemies of insects that attack cultivated plants.

Source : [entomologytoday](#)

Formulation Innovation : Opportunities, Challenges and Solutions | 07/03/2018

The tightening of regulations on agrochemicals by governments around the world is pushing the industry toward a “cleaner, safer and higher efficiency” environment. These curbs are pushing the industry to develop improved formulation and adjuvant technologies. Adjuvant technologies are crucial in increasing the efficacy and safety of formulations.

Source : [agropages](#)

Emerging microbial biocontrol strategies for plant pathogens | 02/2018

To address food security, agricultural yields must increase to match the growing human population in the near future. There is now a strong push to develop low-input and more sustainable agricultural practices that include alternatives to chemicals for controlling pests and diseases, a major factor of heavy losses in agricultural production. [...]

Source : [sciencedirect](#)

1.5. Patents

A. MICROBIALS – BACTERIA

WO2018051344 | Compositions comprising a non-pathogenic bacteria and methods for protecting plant and animal

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hosts from fungal, bacterial and viral diseases | Grace Breeding LTD | 22/03/2018

The present invention is directed to a method for preventing and/or treating infection of plant or animal host species by fungal, bacterial and/or viral pathogens, wherein said method comprises the steps of providing a mixture of one or more non-pathogenic bacteria and one or more activating agents; and administering said mixture to said host species. The invention also encompasses compositions comprising a mixture of non-pathogenic bacteria and one or more activating agents.

Source : [wipo](#)

EP3295799 | Antifungal agent, pesticide, method for controlling plant disease by means of microorganism, and novel bacillus subtilis | Organic Tech Farm Corp | 21/03/2018

One aspect of the present invention is an antimicrobial agent including at least one of Bacillus subtilis and a culture of Bacillus subtilis, the Bacillus subtilis showing a peak at at least one mass-to-charge ratio (m/z) selected from the group consisting of a range of 3045.5±0.58 (m/z), a range of 6942.5±0.58 (m/z), and a range of 9140.5±0.58 (m/z) in mass analysis by means of matrix-assisted laser desorption ionization time-of-flight mass spectrometry (MALDI-TOF MS).

Source : [wipo](#)

WO2018045063 | Nematocidal compositions comprising

Bacillus licheniformis and Bacillus subtilis | FMC Corporation | 08/03/2018

A composition is provided containing active ingredients Bacillus licheniformis CH200 and Bacillus subtilis CH201 for plant seed treatment or in-furrow application to control plant pathogenic nematodes. The composition is efficacious at suppressing nematodes, including Meloidogyne spp. and Pratylenchus. Related articles of manufacture and methods are also provided.

Source : [wipo](#)

WO2018045051 | Fungicidal compositions comprising Bacillus licheniformis and Bacillus subtilis | FMC Corporation | 08.03.2018

Compositions and methods include a combination of a strain of Bacillus licheniformis CH200 and a strain of Bacillus subtilis CH201 for delivery to plants and plant seeds, the combination having activity against plant fungal pathogens. In particular, the combination of strains is useful for increasing yield in crops including soybean and corn in the presence of plant pathogens. The Bacillus licheniformis CH200 and Bacillus subtilis CH201 strains can be applied alone or in combination with other microbial, biological, or chemical insecticides, fungicides, nematocides, bacteriocides, herbicides, plant extracts, plant growth regulators, and fertilizers.

Source : [wipo](#)

EP3289877 | Composition comprising species from the

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genus glomus and Trichoderma harzianum T78 and use thereof as a plant growth promoter | Microgaia Biotech S L, Symbiom Sro | 07/03/2018

Composition comprising species from the genus *Glomus* and *Trichoderma harzianum* T78 and use thereof as a plant growth promoter. Composition comprising species from the genus *Glomus* and the *Trichoderma harzianum* T78 strain, identified by the deposit number CECT 20714. Species of the genus *Glomus* are *Glomus intraradices*, *Glomus claroideum*, *Glomus mosseae* and *Glomus etunicatum*. Composition for use thereof as a plant growth promoter or for preventing or treating infections caused by pathogenic microorganisms in a plant.

Source : [wipo](#)

EP3288387 | Microbial compositions and methods for bioprotection | Inocucor Tech Inc | 07/03/2018

Source : [wipo](#)

RU0002646160 | Strain of Pseudomonas fluorescens for protecting plants from phytopathogenic fungi and bacteria and stimulating plant growth | | 01/03/2018

Invention relates to microbiology. Strain of bacteria *Pseudomonas fluorescens* BS1506 is proposed to protect plants from phytopathogenic fungi and bacteria and

stimulate plant growth. Strain is isolated from the rhizosphere of wild cereals growing on the territory of treatment plants in the town of Pushchino. Bacterial strain *Pseudomonas fluorescens* was deposited in the All-Russian Collection of Microorganisms of the IBPM them. G. K. Scriabin RAS under the number VKM B-2955D. [...]

Source : [wipo](#)

WO2018047123 | Biological control of plant pathogenic microorganisms | The New Zealand Institute For Plant And Food Research Limited | 08/03/2018

The present invention relates to the use of an isolated *Aureobasidium pullulans* yeast strain YBCA5 as a biological control agent. Processes and compositions for the biological control of phytopathogenic bacteria and fungi using YBCA5 are also provided.

Source : [wipo](#)

B. BIOCHEMICALS – SEMIOCHEMICAL

US20180064102 | Particles containing pheromones and production process | Melchior Material And Life Science France | 08/03/2018

The present invention is directed towards microparticles consisting of a solid shell made of polymer, in particular an acrylic polymer, surrounding a core comprising a mixture of oil and wax and also pheromone. The present invention is also directed towards a production

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process and the use of an aqueous suspension of such microparticles containing pheromones comprising fatty chains, such as lepidopteran pheromones, and which are capable of releasing the pheromones in a sustained manner.

Source : [wipo](#)

C. BIOCHEMICALS – PLANT EXTRACT

EP3295795 | Use of a non-nematicidal composition | Bioatlantis LTD | 21/03/2018

A composition comprising laminarin isolated from brown algae and mannitol is used for controlling nematode induced damage to plants grown in plant growth media infested with plant pathogenic nematodes. The plant pathogenic nematodes may be cyst nematodes and/or root knot nematodes. The nematodes may be free living species of pathogenic nematodes. The composition may further comprise fucoidan isolated from brown algae.

Source : [wipo](#)

D. BIOCHEMICALS – ORGANIC ACID

US20180064125 | Inhibition of pathogenic growth on plant materials using lactic acid producing microorganisms | Chr. Hansen A/S | 08/03/2018

Improved compositions and methods are disclosed for improving food safety. More specifically, one or more lactic acid producing microorganisms are used for inhibiting

pathogenic growth on plant materials before, during and/or after harvest. The disclosed methodology is particularly effective for leafy vegetables, such as spinach.

Source : [wipo](#)

E. MACROORGANISM

DK3192366 | System for supply of useful mids and use of this | Koppert B.V. | 05/03/2018

This invention relates to a system for releasing beneficial mites and the use of such a system. Mite species that can be used beneficially for human purposes may for example be employed in the control of pests, such as in the field of agriculture, including agricultural production systems for plant products, agricultural production systems for animal products, and animal husbandry, or in the field of storage of food products. The system of the invention may find use in any of these fields.

Source : [wipo](#)

2. Biostimulants

2.1. News

A. COMPANIES

NewLeaf Symbiotics: develop deep knowledge of m-troph microbes to serve modern agriculture | 27/03/2018

NewLeaf Symbiotics is a science-based company doing cutting-edge research and product development, using a naturally occurring family of beneficial plant bacteria. Pink pigmented facultative methylotrophs (PPFMs) are broadly distributed throughout the natural world and improve access to several essential nutrients that all plants need to grow. Recently, AgroPages interviewed Tom Laurita, CEO of NewLeaf Symbiotics, to talk about his opinions on the biopesticide industry

Source : [agropages](#)

Andermatt Biocontrol confirmed to attend CBBC 2018 | 02/03/2018

Andermatt Biocontrol confirmed to attend the 2018 China-Overseas Biopesticide & Biostimulant Business Exchange Congress (CBBC 2018) and make a presentation. Andermatt Biocontrol and its affiliated companies have key expertise in the development of new products based on baculoviruses, microorganisms and beneficial insects

Source : [agropages](#)

B. PRODUCT LAUNCH

U.S.: Locus AG “reinvents” local probiotic fermentation process to boost soil health, crop yields | 28/03/2018

U.S.-based company Locus Agricultural Solutions has developed what it says is a game-changing microbial production process that will help farmers boost soil health and pest control while also enriching the root microbiome to strengthen crops' natural vitality.

Source : [freshfruitportal](#)

Kemin Crop Technologies Launches Valena™ | 08/03/2018

Kemin Crop Technologies, an initiative of Kemin Industries focused on providing solutions for commercial horticulture, today launched a new product, Valena™, a soil amendment Sourced from a proprietary strain of *Euglena gracilis* (algae) rich in beta-glucan. Valena is designed to support the growth of healthy and strong plants from day one.

Source : [prnewswire](#)

AlgaEnergy presents its new catalogue for AgriAlgae® | 08/03/2018

AlgaEnergy has taken advantage of its participation in the XXX edition of Agroexpo, trade show of international reference for the Agri-Food sector, in order to present the new

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edition of its catalogue for its range of agricultural biostimulants based on microalgae, AgriAlgae®.

Source : [algaEnergy](#)

Plant Impact Launches Fortalis Foliar Spray For Soybeans | 01/03/2018

After its initial commercial launch in 2017, Plant Impact is expanding its marketing of Fortalis, a yield-enhancing foliar spray. Fortalis contains Plant Impact's patented CaT technology, a synthetic molecule which enhances the mobilization of calcium within plant tissue, to improve the fixation of flowers and pods in soybean and resulting in an improvement in yields.

Source : [agroprofessional](#)

C. PRODUCT CERTIFICATION & HOMOLOGATION

Monsanto hopes to gain EPA approval for its second corn seed treatment this spring | 02/03/2018

One biological seed treatment for corn from Monsanto came on line in 2017. A second biological seed treatment that complements it awaits U.S. EPA approval, and should be ready for 2019. Why are companies investing in biological products?

Source : [indianafarmers](#)

D. PARTNERSHIP & ACQUISITION

Nile: a new emerging player in bio-inputs | 04/04/2018

In order to promote and speed-up the development and commercialization of innovative bio-inputs, ARD(a Research & Development company specialising in generating value from crops in the fields of biorefining, industrial biotechnologies, and green chemistry) and ÉLÉPHANT VERT (an industrial player of the biological crop protection market in Europe and Africa) have set-up a new independent company, NILE, whose ambition is to turn scientific innovation into relevant and efficient biosolutions for farmers.

Source : [elephant-vert](#)

E. START-UP NEWS

BioConsortia Continues Growth and Success, Securing \$10 Million in Series D Funding | 29/03/2018

BioConsortia, Inc., innovator of microbial solutions for natural plant trait enhancement and yield improvement, has closed a further round of equity financing to support its continued growth, research achievements and development of superior products. The \$10 million round was led by Otter Capital and contributed to by Khosla Ventures, both of which are long-term backers of the biotechnology company and experienced ag tech investors.

Source : [businesswire](#)

Startup strengthens seeds with UV light | 14/03/2018

New Zealand based BioLumic uses proprietary UV treatment systems to increase the

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performance of seedlings and seeds. Today it announced the close of \$5 million in Series A financing, which was led Finistere Ventures and Radicle Growth acceleration fund, with Rabobank's Food & Agri Innovation Fund and existing investors from New Zealand also joining this round. The short-duration UV treatments aim to provide long-term benefits including: improved crop consistency, increased yield and stronger disease resistance.

Source : [thepacker](#)

F. ACADEMIC NEWS

Farm of future marries microbiology | 27/03/2018

An Arkansas farm that's growing soybeans, corn and rice could become the most scientifically advanced farm in the world. Soil samples are processed through machines to have their microbes genetically sequenced. Unmanned aerial vehicles fly overhead taking hyperspectral images of crops. Supercomputers soon will be crunching massive volumes of data collected.

Source : [agupdate](#)

2.2. Reports

A. MARKET STUDIES

Biostimulant market taking off | 20/03/2018

Five or six years ago few people had heard of biostimulants, which were only being used in some high-value, horticultural crops. Today, the biostimulant market is one of the fastest growing, global agri-input sectors, increasing by 12 to 15 per cent annually.

Source : [grainews](#)

B. MARKET TRENDS

Where are my opportunities for biopesticide/biostimulant in China? | 15/03/2018

China is a large agricultural country, also one of the biggest agri-product demanded countries. With the overuse of chemical pesticides and fertilizers in recent years, the harm to environment and human health receive more and more attention. Therefore, China has announced in 2015 that it's targeting zero growth in the use of chemical pesticides and fertilizers by 2020. Biopesticides and biostimulants are growing in demand.

Source : [agropages](#)

Update on the rapidly growing biologicals sector in agriculture | 15/03/2018

Biological crop protection products are an important set of options in the agricultural "tool box." Last week I had the opportunity to attend meetings held in California and get an update on that industry - one I have been following since the 1990s when I worked for Mycogen, one of the earliest companies in this field. The big take-aways from these meetings were: 1) this continues to be a rapidly growing sector, 2) the best fit for these products tends to be in integrated programs with synthetic chemical options, and 3) that the lack of international harmonization of regulations is problematic for even these "soft" products.

Source : [forbes](#)

C. TECHNICAL TOPICS & REVIEWS

1. BIOPESTICIDES

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Biostimulants: Crop input or management mindset? | 05/03/2018

The emergence of biostimulants is due at least as much to a fresh way of looking at crop production — with a systems-thinking mindset — as to technological breakthroughs. While these insights bring new opportunities, they also bring complexity to farm management. Integrated crop management brings better results for farmers, consumers, and the environment, but it requires a less simplistic model of management. Integrated management is not about simply adjusting input levels and hoping the machine hums along well: it is about constantly tweaking numerous dynamic processes and their interactions to achieve the most beneficial system balance. But even that balance is temporary; it changes throughout the growth cycle and due to outside influences, such as weather and pests, not to mention markets.

Source : [*agribusinessglobal*](#)

Interview Series 1: Future Development Trends for Crop Protection | 02/03/2018

Nowadays it takes roughly 11 years beginning from research and development of a novel active ingredient up to release of pesticide to market, at a cost of \$286 million, which is 55 percent higher versus 10 years ago. Research and development of novel active ingredients are getting more difficult, which is well recognized among the industry beyond dispute. What's the development trends of crop protection products in the future?

Source : [*agropages*](#)

Microbe-assisted crop production: opportunities, challenges & needs | March-April 2018

Source : [*newaginternational*](#) - pages 14-20

Microbiome engineering to improve biocontrol and plant growth-promoting mechanisms | 03/2018

A plant microbiome includes a microbial community that typically interacts extensively with a plant. The plant microbiome can survive either inside or outside of plant tissues, performing various plant beneficial activities including biocontrol of potential phytopathogens and promotion of plant growth. An important part of the plant microbiome includes plant growth-promoting bacteria (PGPB) that commonly reside in the rhizosphere and phyllosphere, and as endophytic bacteria (inside of plant tissues).

Source : [*sciencedirect*](#)

Microbial volatiles as plant growth inducers | 03/2018

Agricultural practices require novel products that allow sustainable development and commercial production according to the needs of farmers and consumers. Therefore, in the last decade, eco-friendly alternatives have been studied, so volatile organic compounds (VOCs) emitted by microorganisms have emerged as a cheaper, effective, efficient, and an eco-friendly alternative.

Source : [*sciencedirect*](#)

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Does plant-Microbe interaction confer stress tolerance in plants: A review? | 03/2018

The biotic and abiotic stresses are major constraints for crop yield, food quality and global food security. A number of parameters such as physiological, biochemical, molecular of plants are affected under stress condition. Since the use of inorganic fertilizers and pesticides in agriculture practices cause degradation of soil fertility [...]

Source : [sciencedirect](#)

2.3. Patents

A. MICROBIALS

IN201837004143 | Novel microorganisms and their use in agriculture | Azotic Technologies LTD | 16/03/2018

A strain of *Gluconacetobacter diazotrophicus* (Gd) characterised by the presence of at least one nucleic acid sequence selected from SEQ ID NOS 1 10 or variants or paralogues thereof and/or the presence of a single plasmid of about 17566 bp in size. Such strains exemplified by IMI504853 are useful in agriculture in particular as they are able to colonise plants intracellularly.

Source : [wipo](#)

WO2018047104 | Photosynthetic and heat stress trait improvement | Koch Biological Solutions, LLC | 15/03/2018

Compositions and methods for improving plant performance, productivity, and/or yield are disclosed herein. The compositions are obtained in part from a microbial culture, and methods of using these compositions to enhance photosynthetic rate and/or a heat stress trait, thereby improving plant performance, productivity, and/or yield, are also disclosed.

Source : [wipo](#)

WO2018045004 | Defined microbial compositions | Agrinos AS | 08/03/2018

Disclosed herein are compositions including cells of defined sets of microbial species (for example, 3, 16, 18, 19, 21, or 22 microbial species). Also disclosed are methods of using the microbial compositions that include contacting soil, plants, plant parts, or seeds with the composition. The microbial compositions are also used in methods of degrading biological materials, such as chitin-containing biological materials.

Source : [wipo](#)

US20180055047 | Method for changing the development pattern, increasing the growth and the accumulation of starch, changing the structure of starch and increasing the resistance to water stress in plants | Iden Biotechnology S. L. | 01/03/2018

The invention relates to a method for changing the development pattern, increasing the growth and starch accumulation, changing the structure of starch and increasing the resistance

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to water stress in plants. The method involves culturing plants in an atmosphere containing volatile elements emitted by a microorganism, without there being any physical contact between the microorganism and the plant. [...]

Source : *wipo*

B. PLANT EXTRACTS

US20180072634 | Yeast extract having effect of promoting growth of plant and elongation of root and effect of improving added values of plant | Kohjin Life Sciences Co., LTD. | 15/03/2018

The present invention seeks to provide a composition for plants that is highly safe and that contributes to early harvesting, increasing yield, and increasing added value of crops. Specifically, the present invention provides a yeast extract that, by addition to a foliar surface spray or to soil or water, provides an effect of promoting growth, an effect of root lengthening, an effect of improved taste, and an effect of increased amino acid content of a plant. A substance obtained from yeast that is edible and considered to be safe is preferred as the yeast extract. [...]

Source : *wipo*

C. ORGANIC ACIDS

WO2018047918 | Plant activator and process for producing plant activator | Ibiden Co., LTD. | 15/03/2018

The purpose of the present invention is to provide: a plant activator which is low in soil contamination and toxicity and is highly

effective in inducing resistance and accelerating the growth; and a process for producing the plant activator. The plant activator contains a fatty acid metabolite obtained by making a proteobacterium to metabolize C4-30 fatty acids in an environment having a dissolved-oxygen concentration of 0.1-8 mg/l. The process for producing the plant activator containing a fatty acid metabolite includes a fatty acid metabolism step in which a proteobacterium is made to metabolize C4-30 fatty acids in an environment having a dissolved-oxygen concentration of 0.1-8 mg/l.

Source : *wipo*

D. SEAWEED EXTRACTS

WO2018052502 | Microalgae-based compositions for benefiting plants and methods of application | Heliae Development, LLC | 22/03/2018

The invention relates to compositions and methods for improving characteristics of plants and soil by administering an effective amount of a microalgae-based composition in low concentration applications.

Source : *wipo*

E. OTHERS

WO2018042311 | Chitosan derivative formulations for plant growth, and building disease resistance | Swasti Agro & Bioproducts PVT LTD. | 08/03/2018

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The invention relates to chitosan derivative comprising pre-activated chitosan and chemical moieties. The invention also relates to method for preparing the chitosan derivative. The method further relates to the formulation comprising pre-activated chitosan and biomolecules for improved disease resistance, control the plant pathogens, protect the plants from infections and growth of plants.

Source : [wipo](#)

PH1/2017/501608 | Field application of sugars to increase crop yield | Minn-Dak Farmers Cooperative | 05/03/2018

Source : [wipo](#)

F. FORMULATION

US20180084776 | Agricultural Composition | Agresearch Limited | 29/03/2018

A granular composition that comprises one or more microorganisms, two or more plant powders and a biodegradable water-absorbent agent. Also provided is a method of producing a granular composition by admixing a composition comprising two or more plant powders and a biodegradable water-absorbent agent, and (i) one [...]

Source : [wipo](#)

EP3294066 | A biostimulant formulation for improving plant growth and uses thereof | SEA6 Energy Pvt Ltd | 21/03/2018

Source : [wipo](#)

US20180070586 | Encapsulated biocontrol agents | The Board of Trustees of the University of Illinois | 15/03/2018

Provided is a lyoprotected microcapsule for increasing the survival of a microorganism, such as *Pantoea agglomerans* E325, after lyophilization and/or storage, which includes an interior core having at least one live microorganism; a first polymer; and at least one nutrient, as well as an exterior shell having second polymer. The lyoprotected microcapsule also includes at least one lyoprotective agent. The polymer may include alginate and the lyoprotective agent may include maltodextrin, trehalose and combinations thereof. Microorganisms within the lyoprotected microcapsules exhibit enhanced survival after lyophilization and/or storage. Also provided are methods for producing such lyoprotected microcapsules and methods for using the lyoprotected microcapsules.

Source : [wipo](#)

3. Biofertilisants

3.1. News

A. COMPANIES

Van Iperen International: Combining Nutrition and Biostimulants is the Future | 23/03/2018

Van Iperen International is the leading producer of Specialty Fertilizer solutions for fertigation and foliar application. In recent years, the Company has made rapid progress, especially in overseas expansion. AgroPages recently interviewed Erik van den Bergh, Managing Director of Van Iperen International, to talk about Iperen IPE® Technology and company development.

Source : [agropages](#)

The Flemish Coordination Centre for Manure Processing (VCM) organizes the third edition of the 'Ivan Tolpe' Award.

The Flemish Coordination Centre for Manure Processing (VCM) organizes the third edition of the 'Ivan Tolpe' Award. This award is handed out every two years to the participant proposing an innovative technique contributing to the sustainability and cost-efficiency of manure processing. It is a homage to Ivan Tolpe, a West-Flemish pioneer in manure processing who unfortunately deceased in 2013.

Source : [mestverwerking](#)

Fertikal – organic and organo-mineral fertilizers | 16/03/2018

Fertikal is a manufacturer of organic and organo-mineral NPK fertilizers worldwide. Based in the port of Antwerp (Belgium), it collects recycled secondary materials from a maximal distance of 150 km to give them a new life as a fertilizer. These materials include: chicken manure, struvite, digestates from biogas plants, composts, by-products from sugar beet and bio-diesel industry, etc.

Source : [circulareconomy](#)

Sharing know-how for nutrient recovery from manure, biowaste and sharing know-how for nutrient recovery from manure, biowaste and sludge | 01/03/2018

On February 22nd and 23rd, representatives of fifteen biowaste treatment plants came together in Amsterdam to discuss possibilities for nutrient recovery and reuse from manure, sewage and biowaste. The meeting was organised by the H2020 project SYSTEMIC which aims to stimulate the implementation of sustainable and economically viable business cases for biowaste treatment in Europe. The project has selected ten so-called 'outreach locations' who are interested in opportunities to improve their current biowaste treatment practice. The five SYSTEMIC demonstration plants, [...]

Source : [biorefine](#)

B. PRODUCT LAUNCH

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Pivot Bio announces pre-commercial launch of nitrogen-producing microbes |

22/03/2018

Pivot Bio unveiled its "Intent to Pivot" field-scale beta testing program. Farmers in critical corn-producing states across the Corn Belt will trial Pivot Bio's nitrogen-producing microbes in large-scale plots.

Source : [prnewswire](#)

C. PRODUCT CERTIFICATION & HOMOLOGATION

Phosphate solubilizing inoculant from BrettYoung |

21/03/2018

BrettYoung Seeds Limited has launched Recover PO₄ phosphate solubilizing inoculant for Canada. The active ingredient in Recover PO₄ is *Penicillium bilaii*, the same phosphorous fertilizer efficiency technology that is used in products like TagTeam and JumpStart. Used as part of an overall phosphorous fertility program[...]

Source : [topcropmanager](#)

ISO NPK® 3-1-3 receives ORGANIC Certification |

08/03/2018

Beem Biologics Inc. announces new organic certifications for its biofertilizer additive product ISO-NPK® 3-1-3, in addition to registration in 44 states for conventional use. ISO-NPK® 3-1-3 is OMRI Listed for use in certified organic production according to the USDA National Organic Program Rule. [...]

Source : [prnewswire](#)

D. PARTNERSHIPS & ACQUISITION

Bayer, Ginkgo Bioworks names new tech partnership

Joyn Bio | 20/03/2018

Joyn Bio's initial goal is helping to usher in more advanced uses for synthetic biology, starting with reducing the environmental impact of nitrogen fertilizer. The partnership is the fifth investment of Leaps by Bayer, a division of the medical and agricultural company that invests in ways to solve some of today's biggest problems. Bayer is providing exclusive access to more than 100,000 proprietary microbial strains and [...]

Source : [agdaily](#)

Fertoz teams up with Limoges Seed Farms to improve agri-business returns |

Fertoz teams up with Limoges Seed Farms to improve agri-business returns Organic phosphate producer and agri-business hopeful Fertoz (ASX: FTZ) has announced it has signed a Memorandum of Understanding with Limoges Seed Farms, a Canadian seed business. Fertoz is a fertilizer supplier that develops and markets a range of organic fertilizers for sale into the premium agri-business markets of North America and Australia.

Source : [smallcaps](#)

Kiwa Bio-Tech Announces Strategic Cooperation with Leading Agricultural University |

07/03/2018

Kiwa Bio-Tech Products Group Corporation, a manufacturer focused on eco-friendly biological fertilizers promoting safe agriculture, announced today that the Company signed a

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strategic cooperation contract with The College of Natural Resources and Environment of Northwest Agricultural and Forestry University (hereby referred to as “NAFU”). The contract aims to enhance Kiwa Bio-Tech’s technological innovations and contribute to the development of eco-agriculture and environmental protection in China.

Source : [globenewswire](#)

E. ACADEMIC NEWS

Soil Health Partnership data program begins to show results | 31/03/2018

The seeds of good data have been planted — and the Soil Health Partnership is eager to harvest early results. The organization’s team is preparing for another round of robust soil sampling, a critical part of identifying, testing and measuring farm management practices that improve soil health. An initiative of the National Corn Growers Association, the program’s goal is to quantify the benefits of these practices — like growing cover crops in the off-season and reducing tillage — from an economic standpoint, showing farmers how healthy soil benefits their bottom line, according to a SHP news release.

Source : [agupdate](#)

Chemical-Intensive Farms Singled Out for Excessive Use of “New” Nitrogen Fertilizers | 30/03/2018

While conventional farming practices rely primarily on new Sources of synthetic nitrogen fertilizer to grow crops, organic agriculture conserves nitrogen by using recycled Sources, as detailed by new research published by the University of Virginia (UVA) and The Organic Center.

Source : [beyondpesticides](#)

Fertikal – organic and organo-mineral fertilizers | 16/03/2018

Fertikal is a manufacturer of organic and organo-mineral NPK fertilizers worldwide. Based in the port of Antwerp (Belgium), it collects recycled secondary materials from a maximal distance of 150 km to give them a new life as a fertilizer. These materials include: chicken manure, struvite, digestates from bio-gas plants, composts, by-products from sugar beet and bio-diesel industry, etc.

Source : [circulareconomy](#)

Fixing soybean's need for nitrogen | 21/03/2018

To make protein, soybean plants need a lot of nitrogen. Beneficial bacteria in root nodules typically assist. A new study shows it's possible to increase the number of soybean root nodules--and the bacteria that live there--to further increase crop yields. This could remove the need to apply additional nitrogen fertilizers.

Source : [ScienceDaily](#)

Research ‘Hub’ launched to support organics R&D | 19/03/2018

Renewable Energy Assurance Ltd (REAL) has established a Research Hub to support research and development work in the organics recycling industry. The Hub will fund or support compost and digestate-related R&D projects that are considered important to the development of the schemes administered by REAL. This development will seek to fill a “void” in the organics recycling industry which is currently lacking support for new R&D projects, REAL said.

Source : [letsrecycle](#)

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Graphene promise for more efficient fertilizers | 18/03/2018

Fertilisers with lower environmental impacts and reduced costs for farmers are being developed by University of Adelaide researchers in the world-first use of the new advanced material graphene as a fertiliser carrier. In partnership with industry, the researchers have demonstrated effective slow release fertilisers can be produced from loading essential trace elements onto graphene oxide sheets.

Source : [sciencedaily](#)

Manufacturers ramp up micronutrient production | 12/03/2018

North American fertilizer demand is typically indexed to the relative price of corn, soybeans, and wheat as they account for roughly one-third of the planted acreage. As commodity prices increase relative to the price of fertilizer, application rates, and demand increase.

Source : [croplife](#)

Research showing organic techniques restore soil carbon could expand the seal's appeal | 06/03/2018

New research showing organic farming more effectively restores soil carbon and reduces the cause of climate change compared to conventional techniques could sway more shoppers to buy organic – especially as conscious consumerism continues to rise. The study, which was published in the scientific journal *Advances in Agronomy* and directed by Northeastern University and The Organic Center, found on average organic farms have 44% higher levels of humic acid, 150% more fulvic acid, 26% greater potential for long-term

carbon storage and 13% higher soil organic matter.

Source : [foodnavigator-usa](#)

3.2. Regulation/Soft law

A. SYNTHETIC FERTILIZERS BANS AND RESTRICTION

Challenging times for fertilizer use in European Union | 08/03/2018

As politicians in Brussels battle to fund and reform the Common Agricultural Policy after 2020, greater emphasis is being placed on greener farming with stricter environmental controls, which include fertilizer use. The CAP pays money to farmers by means of an annual subsidy and accounts for 40 percent of the European Union's budget. However, the payment structure is changing, and farmers will be fined if they go over their organic fertilizer *application* quota, which is made even more difficult by a slurry spreading ban for three months of the year and increasing wet weather.

Source : [producer](#)

Dover, New Hampshire eliminates toxic pesticide and fertilizer use | 06/03/2018

Dover, New Hampshire is the latest community in the U.S. to restrict the use of toxic pesticides, and move towards organic land management on all public property. By a unanimous vote of the City Council last week, Dover passed a resolution that requires the management of city land with "sound land management practices,

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and the use of least toxic compounds only when necessary, ... thereby eliminating exposure to toxic pesticides on the part of our citizens and the environment.” The ordinance also instructs the city manager to “develop and execute a plan to transition the City to eliminate the use of synthetic fertilizers on City property.”

Source : [beyondpesticides](#)

B. BIOFERTILIZER REGULATION

Symbiosis and Circular Economy in Fertilizers | 12/03/2018

The adoption of the New Fertilisers Regulation as it is proposed by the European Commission would imply that any product where “by-products” have been used at any stage in production would effectively be excluded from the ‘EU Fertiliser’ label. This would cause serious consequences in the fertilizer industry, banning most fertilisers today on the market. The use of by-products is not only core to the industry that has been optimising its processes for hundreds of years, but it is also a key contributor to Circular Economy in Europe. The seminar “Symbiosis and Circular Economy in Fertilizers” organised by Fertilizers Europe [...]

Source : [fertilizerseurope](#)

C. PUBLIC & PRIVATE INCENTIVE

World Bank supports agricultural pollution control efforts in East Asia | 26/03/2018

According to Reuters, the World Bank is supporting efforts to control agricultural pollution in East Asia as the region’s food demand increases due to rising consumption

and urbanisation. A report published by the bank reportedly highlights the incidence and effects of agricultural pollution in China, the Philippines and Vietnam.

Source : [worldfertilizer](#)

Agriculture Ministry urges use of organic fertilizer to ‘clean’ land | 15/03/2018

According to the director of the Plant Protection Agency, Hoang Trung, Vietnam needs 11 million tons of fertilizers a year. The average amount of fertilizer used per hectare of land is 1,000 kilograms. Vietnamese farmers no longer use organic fertilizer as inorganic fertilizer shows faster results. This has created a serious imbalance in fertilizer use in agricultural production. A report found that by the end of December 2017, the volume of domestic and imported inorganic fertilizer was 19 times higher than organic fertilizers (713 organic products vs 13,423 inorganic). There are 180 organic fertilizer manufacturing enterprises in Vietnam, accounting for 24.5 percent of total 735 licensed fertilizer manufacturers, which have the capacity of 20,000-500,000 tons per annum.

Source : [vitanamnet](#)

Major food companies join to address climate change and healthy soils by creating a new standard focused on regenerative agriculture | 06/03/2018

The Carbon Underground and Green America, in partnership with Ben & Jerry's (Unilever), DanoneWave, Annie's (General Mills), and MegaFood have begun development of a global verification standard for food grown in a regenerative manner. The standard seeks to encourage farmers to restore the carbon cycle and build soil health, crop resilience, and

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nutrient density. This work builds upon the Regenerative Agriculture Definition created in 2017 by The Carbon Underground, California State/Chico, and the Regenerative Agriculture Initiative that includes over 150 companies, organizations and scientists as signatories. The core design team for the new standard also includes farmers, ranchers, soil scientists and certification experts and includes input and agreement from nearly 50 organizations on the goals of the new standard, which include [...]

Source : [prnewswire](#)

3.3. Report

A. MARKET STUDIES

New CEC report outlines potential solutions to North America's organic waste issue | 15/03/2018

Today, the Commission for Environmental Cooperation (CEC) has published a new report detailing recommended actions for increasing organic waste diversion and processing across Canada, Mexico, and the United States. Key findings of the report include: North America generates an estimated 265 million tonnes of organic waste each year. Of this amount, residents and businesses divert approximately 75 million tonnes through activities such as composting and [...]

Source : [cec](#)

B. TECHNICAL TOPICS & REVIEWS

Inoculate for higher yields 30/03/2018

All plants need nitrogen. While healthy bacteria can occur naturally in the soil, especially in

fields that have grown nitrogen-fixing crops like soybeans in the past, sometimes nature requires a little help for increased production. "Stand establishment is the first hurdle in laying a foundation for top yield potential," says Ken Currah, business representative for south-central Ontario with BASF Canada.

Source : [topcropmanager](#)

Phosphorus for all of us 28/03/2018

Sustainable Phosphorus Forum tackles how to feed a future world of 10 billion while protecting water reSources. Phosphorus is a nutrient crucial to growing crops, but it washes off farmland in the rain and travels to our waterways, where it can cause major pollution issues.

Source : [asunow](#)

Bio-Based Products from Microalgae Cultivated in Digestates 28/03/2018

The use of digestates in microalgal cultivation has gained increasing attention in recent years: it both recycles nutrients and produces valuable biomass, which can be further valorized. In addition to their potential for biofuel production, microalgae represent promising Sources of fine chemicals and novel ingredients, and this can substantially improve process economics.

Source : [sciencedirect](#)

Biofertilizers: Potential Candidate for Sustainable Agriculture 25/03/2018

The present review emphasized on biofertilizers mediated traits like plant growth and productivity, nutrient profile and plant protection from various serious plant pathogens. The knowledge gained from the literature appraised

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herein will help us to understand the physiology and various function of rhizobia.

Source : [ijcmas](#)

Crops, Nitrogen, Water: Are Legumes Friend, Foe, or Misunderstood Ally? | 17/03/2018

Biological nitrogen fixation (BNF) by crop legumes reduces demand for industrial nitrogen fixation (INF). Nonetheless, rates of BNF in agriculture remain low, with strong negative feedback to BNF from reactive soil nitrogen (N) and drought. We show that breeding for yield has resulted in strong relationships between photosynthesis and leaf N in non-leguminous crops, [...]

Source : [sciencedirect](#)

A state-of-the-art review on nitrous oxide control from waste treatment and industrial Sources | 20/03/2018

This review aims at holistically analyzing the environmental problems associated with nitrous oxide (N₂O) emissions by evaluating the most important Sources of N₂O and its environmental impacts. Emissions from wastewater treatment processes and the industrial production of nitric and adipic acid represent nowadays the most important anthropogenic point Sources of N₂O. Therefore, state-of-the-art strategies to mitigate the generation [...]

Source : [sciencedirect](#)

Phosphorus recovery and reuse by pyrolysis: Applications for agriculture and environment | 03/2018

Phosphorus ore extraction for soil fertilization supports the demand of modern agriculture, but extractable reSource limitations, due to scarcity, impose a P reuse and recycling research agenda. Here we propose to integrate biocharproduction (pyrogenic carbon) with municipal and agricultural waste management systems, to recover and reuse phosphorous that would otherwise be lost from the ecological food web. [...]

Source : [sciencedirect](#)

3.4. R&D projects

Innovative Manure Biofertilizers | 13/03/2018

Period : 2018 - 2018

Funders: H2020 - UE

Budget : 71 429

Performing institution : Limited liability company integro-sd

Integro-SD Company (ISD) implements own patented technology of animal waste processing (incl. chicken manure) into high-demand quality organic fertilizers. ISD doesn't use herbage, biological and chemical catalysts in IMBIO technology. Increasing demand for organic fertilizers tells about the necessity of ramping up its production. IMBIO technology allows occupying empty market niche of high-quality organic fertilizers production in the segment of small and medium farm enterprises. The offered technology is highly-productive, waste-free, compact, easy to scale, non-hazardous for the environment and also has low construction budget.

Source : [cordis](#)

Treatment of Animal Waste to Reduce Gaseous Emissions and Promote Nutrient Reuse | 13/03/2018

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Period : 2018 - 2018

Funders : H2020-MSCA-IF-2017 – UE

Budget : 212 194 €

Performing institution/coordinator : Kobenhavns universitet

Less than 8% of the livestock manure produced in Europe is processed, with large variations within regions. Furthermore, properly treated manure could serve as a valuable Source of organic matter and nutrients for fertilizing crops and for energy production, replacing current fossil-based products. The current project aims to develop a new and efficient treatment technology to reduce environmental impacts from animal manure which will make a substantial contribution for a more sustainable and environmental friendly agriculture practice, gaining economic value from the reuse of treated manures to replace mineral fertilizer, contributing to a biobased and circular economy.

Source : [cordis](#)

An eco-innovative planting and survival support system for urban trees | 01/03/2018

Period : 2018 - 2018

Funders: H2020 – UE - SME instrument phase 1

Budget : 71 429 €

Performing institution/coordinator : H. Lorberg Baumschulerzeugnisse GMBH & Co Kg

Harsh urban growing conditions have caused the vitality of urban trees to fall drastically during the last 30 - 40 years . Urban tree mortality is the highest among the youngest trees, especially in the first two to three years after transplanting which results in enormous costs for replanting. In parallel, the market is steadily increasing, European cities and municipalities are planning to plant around 200 million trees in the next 25 years. In order to use this market opportunity, our company, LORBERG has successfully developed TREEPAD, an

innovative and cost-effective, all-in-one survival support system for urban trees. TREEPAD will ensure an easy and fast planting process and high survival rate even years after transplantation by addressing the three main problems of newly transplanted trees: anchoring, water supply, and a balanced nutrient supply.

Source : [cordis](#)

Mosses as a gateway of nitrogen into northern ecosystems | 01/03/2018

Period : 2018 - 2020

Funders: H2020-MSCA-IF-2017

Budget : 200 194€

Performing institution/coordinator : Kobenhavns Universitet

High latitude ecosystems, which experience particular high rates of climate warming are subject to changes in nitrogen (N) cycling due increased decomposition and changes in atmospheric N fixation and deposition. In cold ecosystems, temperature and low N availability restricts organic matter decomposition and plant growth, which affect ecosystem carbon (C) storage and thus climate feedback mechanisms. Understanding N cycling in high latitude ecosystems is therefore essential for understanding consequences of climate change. Mosses, which constitute a major component in high latitude ecosystems, intercept N entering the ecosystem via deposition and they host bacteria that fix atmospheric N. Therefore, they may be an important Source for new N to the rest of the ecosystem. However, mosses do not easily decompose and the fate of N taken up by mosses is not well understood.

Source : [cordis](#)

Commercial use of biomass generated by microalgal

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treatment of wastewater |**01/03/2018**

Period : 2018 - 2019

Funders: Innovate UK

Budget : £114 329

Performing institution/coordinator : Industrial Phycology Limited, Bath

UK and European wastewater industries are struggling to identify and install the technology necessary to meet the ever more stringent demands placed on them through legislation. Such regulations are demanding they produce effluents with lower nutrient contents, whilst reducing the energy use of their processes at the same time. Microalgae if used properly can treat these wastewaters in an efficient cost effective manner. Microalgae are capable of accumulating nutrients [...]

*Source : grt.ukri***The role of Phosphorus in the Resilience and Sustainability of the UK food system |****01/03/2018**

Period : 2018 - 2021

Funders: BBSRC (UK)

Budget : £114 329

Performing institution/coordinator : University of Leeds

In this project, an interdisciplinary research team covering the biological, environmental and socio-economic sciences aims to quantify the vulnerability of UK agriculture and the UK food system to a future P scarcity and assess the thresholds at which P scarcity might impact on agricultural production at farm, catchment and national scale. The work programme will develop and prioritise the adaptations that might overcome this vulnerability; for example through technological innovations to improve P use efficiency and reuse of secondary Sources of P and the necessary institutional infrastructure to support these [...]

*Source : grt.ukri***ABC4Soil - Advanced biocarbon from pyrolysis for sustainable fertilization of soil |****01/03/2018**

ABC4Soil aims to produce a new generation of potent organic fertilizers through a thermochemical pyrolysis process with minimum negative environmental impact using only locally available residues. Agricultural and forestall residues such as straw and waste wood will be transformed into a char with a high carbon content and a porous structure. The char will then be soaked in a liquid organic waste (e.g. cow manure), loading it with nutrients and thereby producing a fertilizer.

*Source : forskningsradet***Loops - rhizobium interactions for optimal utilization of nitrogen |****01/03/2018**

Period : 2018 - 2019

Funders: Norway

Budget : 30 000€

Performing institution/coordinator : University of Leeds

Legumes have symbiosis with bacteria in their roots that fix N₂. This access to N gives them a high protein content and legumes are therefore essential in strategies to reduce the deficit of home-grown protein in Norway and in the rest of Europe. Cultivation of legumes also contributes to value creation and profitable and sustainable agriculture by reducing the need for N fertilization. Lucerne, a forage legume that is used extensively in many regions of the world, could be cultivated to a larger extent in Norway.

Source : forskningsradet

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Horti-blueC - Using food and fisheries waste to provide sustainable soil and cultivation for Europe | 19/03/2018

Period : 2018 - 2021

Funders: EU - Interreg

Budget : €3,353,732

Performing institution/coordinator : University of Portsmouth

Use of agricultural and fisheries waste streams (shared natural reSources in the 2 seas area) as environmentally friendly and circular economy reSources for sustainable growing media (peat, coir or stonewool replacement), and chemical fertilizer and pesticide replacement. Creating innovative business climate by novel cultivation methods and novel products that satisfy demanding environmental and health criteria set by customers, which include CO2 reduction for global warming reduction and lower nutrient losses, lower pesticide residues and no human pathogens on fruits and vegetables.

Source : [interreg2seas](#)

3.5. Patents

A. MICROBIAL - N FIXING

EP3288385 | Microbial inoculant compositions and uses thereof in agriculture | Koch Agronomic Services Llc | 07/03/2018

Source : [wipo](#)

US20180072633 | Agricultural methods | Azotic Technologies LTD | 15/03/2018

A method for introducing a plant growth mediating entity or substance into plants and in particular a nitrogen-fixing bacteria into plant cell, said method comprising administering said plant growth mediating entity or substance into plants to a plant in combination with a strain of *Terribacillus*.

Source : [wipo](#)

EP3292092 | Nitrifying micro-organisms for fertilization | Ibema Biezenmortel B V | 14/03/2018

Source : [wipo](#)

B. NUTRIENTS RECOVERY

WO2018046799 | Process and apparatus for treating manure sludge | Valio LTD | 15/03/2018

The invention relates to a method for treating manure sludge comprising the steps of: providing manure sludge; subjecting the manure sludge to separation to provide a first dry fraction and a first liquid fraction; subjecting the first liquid fraction to a centrifugation step to provide a second dry fraction and a second liquid fraction; subjecting the second liquid fraction to one or more sequential reverse osmosis (RO) filtration steps to provide one or more RO retentates and one or more RO permeates, wherein the feed for each subsequent RO filtration step is an RO permeate obtained from the previous RO filtration step.

Source : [wipo](#)

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WO2018039698 | Organic fertiliser and soil improver comprising keratin | Veratin PTY LTD | 08/03/2018

The present invention relates to a fertiliser and/or soil improver, for use in enhancing the growth of plants, comprising keratin, preferably obtained from wool. Also described is a method of enhancing the growth of plants using a fertiliser and/or soil improver comprising keratin.

Source : [wipo](#)

EP3289299 | Method for treating waste | Holcim Technology Ltd | 07/03/2018

Source : [wipo](#)

US20180057418 | Pelleted feather meal and soybean meal based organic fertilizer -| True Organic Products, Inc | 01/03/2018

A process for production of a pelleted feather meal and soybean meal based organic fertilizer includes combining feather meal and soybean meal to create a combination of feather meal and soybean meal and processing the combination of feather meal and soybean meal into pellets. In one embodiment, the pelleted feather meal and soybean meal based organic fertilizer includes meat and bone meal.

Source : [wipo](#)

C. MEDIA GROWTH AND SOIL CONDITIONER

EP3294688 | Plant conditioner containing alginite and vericompost derivatives | Plantaco Logisztikai Es Szolgaltato KFT | 21/03/2018

Source : [wipo](#)

US09919976 | Soil conditioners and method of making them | Magic Dirt Horticultural Products LLC | 21/03/2018

Soil conditioner compositions including manure-based organic fibers, pyrolytically processed into biochar. Also included are soil amendment compositions including growth factors such as nitrogen, phosphorus and potassium available for plants. Those growth factors may be obtained from the further processing of a liquid portion effluent resulting from heat-agitated anaerobic digestion of manure used to produce the fibers for the manure-based soil conditioner.

Source : [wipo](#)

US20180057419 | Semi-humic organic carbon material and methods of use thereof | Actagro, LLC | 01/03/2018

This disclosure relates to a semi-humic material, and compositions comprising the same, obtained from leonardite ore and a non-humic organic carbon Source and a process for obtaining the same. Also described are methods for maintaining more available nitrogen and phosphorus in the plant root zone and minimizing premature leaching and loss of the nitrogen and/or phosphorus into the atmosphere, surface waters and/or subsurface ground water.

Source : [wipo](#)

DEFINITIONS

The following definitions are the definitions used to classify information. There are commonly accepted definitions but have not a legal status. The clarification of legal definitions are a topic monitored through this newsletter

Biopesticide (EPA, 2013): Biopesticides include naturally occurring substances that control pests (biochemical pesticides), microorganisms that control pests (microbial pesticides), and pesticidal substances produced by plants containing added genetic material (plant-incorporated protectants) or PIPs.

Biostimulant (Du Jardin, 2012): Plant biostimulants are substances and materials, with the exception of nutrients and pesticides, which, when applied to plants, seeds or growing substrates in specific formulations, have the capacity to modify physiological processes of plants in a way that provides potential benefits to growth, development and/or stress response.

Organic fertilizer/biofertilizer (ECOFI): fertilizer whose main function is to provide nutrients under organic forms from organic materials of plant and/or animal origin.

Organic soil improver (ECOFI): a soil improver containing carbonaceous materials of plant and/or animal origin, whose main function is to maintain or increase the soil organic matter content.

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