



International Association for the
PLANT PROTECTION SCIENCES

IAPPS

NEWSLETTER

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“BENEFICIAL MICROBES FOR PLANT PROTECTION – CURRENT PERFORMANCE AND FUTURE EXPECTATIONS”

This is the title of one of the symposia held at the XIX IPPC 2019 (Hyderabad, India), organized by Dr. Nora Altier (IAPPS Coordinator Region XV, South America) and Dr. Trevor Jackson (IAPPS Coordinator Region XII, Oceania). It focused on the microbes associated with plants as growth promoters or protectors from pests and diseases, with significant impacts on agricultural productivity. The potential for use of beneficial microbes for insect control and plant growth promotion has been recognised for more than 100 years. While there has been recognition of benefits and growth in the sector, microbial control agents and biofertilisers remain as minor components in the international plant protection market despite a socio/political environment favouring environmentally acceptable alternatives to residual chemicals. The reasons for limited uptake need to be examined. Beneficial microbes have usually been studied in isolation, as inoculants, endophytes or applied microbial products but this symposium addressed the challenge of increasing the understanding of plant/pest/microbe within agricultural production systems.



The symposium covered the expertise of plant pathologists, insect and nematode pathologists, and microbiologists. It included ten presentations from around the world, which addressed the needs of the future and discussed pathways to move forward throughout the application of microbial products. The symposium provided a

unique opportunity for researchers to come together, compare results across disciplines, determine common threads leading to beneficial activity, and build collaborations to advance the use of beneficial microbes in plant protection, addressing significant challenges for agricultural sustainability.

Variable efficacy or slow speed of action of biocontrol microbes are reasons sometimes given for slow uptake, but biologicals often give better results than agrochemicals if use is properly timed. Efficacy will depend on the relationship between pest, pathogen and environment but the ecology of these interactions is often not well understood leading to poor results. Economics of production

of many agents has been challenging as small scale of production and low margins have limited the success of beneficial microbe producers. One of the greatest challenges has been commercialisation. While regulation is intended to build confidence in microbial products, complex regulatory requirements have often been a brake to product availability. Success requires close collaboration between all actors in the development chain, from scientists through to farmer users. Some examples of successes and failures in microbial product development were given and options to overcome constraints to development discussed.

The titles and the speakers of the presentations are listed below:

1. Impact of modes of action of biological control agents against plant diseases. Jurgen Kohl
2. Progress and uses of biocontrol in Chile. Andrés France
3. Beneficial microbes for agriculture in Uruguay: strategies and successful case studies. Nora Altier
4. Impacts of soil borne disease on plant yield and farm profit in dairying soils of New Zealand. Sean Marshall
5. Delivery of the entomopathogenic fungus *Metarhizium* spp. in seed coatings for plant growth promotion and plant protection against pests and diseases. Federico Rivas
6. Biological control of *Helicobasidium purpureum* (*Rhizoctonia crocorum*) causing violet root-rot of carrot and dwarf-bean. DRW Kandula
7. Overcoming constraints to adoption of beneficial microbes for insect control and plant growth promotion. Trevor Jackson
8. Mass multiplication and predatory potential of the apefly, *Spalgis epius* (Westwood) (Lepidoptera: Lycaenidae), a candidate biocontrol agent of mealybugs. MG Venkatesha
9. Application of microbial cultures to sustain soil health and crop productivity under changing climatic conditions. Vijai Prakash Jaiswal
10. Effects of plant growth promoting bacteria on the plant parasitic nematode *Meloidogyne javanica*. Thomais Kakouli-Duarte

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UPDATES FROM IAPPS REGION X (NEARC)

Present committee members

Dr. Izuru Yamamoto, Senior Advisor

Dr. Noriharu Umetsu, Senior Advisor

Dr. Tsutomu Arie, a representative of the Phytopathological Society of Japan, IAPPS coordinator for Region X

Dr. Tarô Adati, a representative of Japanese Society of Applied Entomology and Zoology

Dr. Hiromitsu Moriyama, a representative of Pesticide Science Society of Japan, the secretary general of Region X

Dr. Rie Miyaura, a representative of The Weed Science Society of Japan

8th Steering Committee of IAPPS Region X (NEARC)

8th Steering Committee of IAPPS Region X (NEARC) was held on May 14, 2019 at Tokyo University of Agriculture, Setagaya, Tokyo, Japan

Agenda:

Report of the financial results for FY2018; Approval of the budget for FY2019.

We decided to support travel expenses for several young researchers / students who plan to participate in the 19th IPPC Convention in India.

We decided to encourage participation in the 19th IPPC Convention in India at the annual meeting and the websites of each society.

Announcement of the future activities related to IAPPS

The Phytopathological Society of Japan (PSJ) is going to host the Asian Conference of Plant Pathology (ACPP 2020) in Sep 15–18, 2020, in Tsukuba. The theme of the conference is ‘Importance and Impact of Global Plant Health’. Year 2020 will be the International Year of Plant Health by FAO, UN and ACPP 2020 is going to be supported by FAO and the Ministry of Agriculture, Forestry and Fisheries of the Japanese Government.

The URL of the conference is <https://acpp2020.org/> and registration will start in coming December 2019.

5th Japan-Korea Joint Symposium on Plant Pathology will also be held in Tsukuba on Sep 14, 2020 and we welcome many participants to the symposium, too.

Selected annual activities related to IAPPS especially to IPM of plant diseases, insects and weeds, and plant regulation (updates for 2019)

The Phytopathological Society of Japan (PSJ)

2019 Annual Meeting, Tsukuba, Mar 18–20, 2019

54th Plant-Pathogen Interaction Study Group Meeting, Obihiro; Aug 28–30, 2019

15th Plant Disease Diagnosis Education Program, Okayama; Sep 9–13, 2019

2019 EBC Study Group Workshop, Bunkyo, Tokyo; Sep 18, 2019

Japanese Society of Applied Entomology and Zoology

63rd Annual Meeting, Tsukuba, Ibaraki; Mar 25-27, 2019

25th Annual Research Meeting of the Japan-ICIPE Association, “African Entomology: Biodiversity and Ethnoscience” Tsukuba, Ibaraki; Mar 27, 2019

10th Joint Symposium of the Union of Japanese Societies for Insect Sciences and the Science Council of Japan, “The Insect World: Its Diversity”, Yayoi, Tokyo; Aug 3, 2019

Pesticide Science Society of Japan

44th Annual Meeting, Nagoya, Aichi; Mar 11–13, 2019

42th Annual Meeting of Special Committee on Pesticide Residue Analysis, Ohita, Ohita; Oct 31–Nov 1, 2019

39th Symposium of Special Committee on Agricultural Formulation and Application, Tsukuba, Ibaraki; Oct 17–18, 2019

37th Study Group Meeting of Special Committee on Environmental Pesticide Science, Kurashiki, Okayama; Nov 21–22, 2019

36rd Study Group Meeting of Special Committee on Bioactivity of Pesticides, Setagaya, Tokyo; Apr 26, 2019

The Weed Science Society of Japan

2018 Annual Meeting, Kanto Weed Science Society, Setagaya, Tokyo; Mar 15, 2019

Hono-Kai (means, Meeting who are appreciating agriculture)

34th Hono-Kai Symposium 'Sustainability and plant protection of Japanese agriculture <Technologies and systems that challenge domestic and global trends>' Kita, Tokyo; Sep 25, 2019

Japan BioControl Association

3rd Symposium, Kita, Tokyo; Mar 5, 2019

Japan Plant Protection Association

Symposium 'Thinking about plant protection in the age of smart agriculture' Chiyoda, Tokyo; Jan 22, 2019

Organic Agriculture Researcher Conference

2019 Conference, Yabu, Hyogo; Aug 30–Sep 1, 2019

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IAPPS Mission: to provide a global forum for the purpose of identifying, evaluating, integrating, and promoting plant protection concepts, technologies, and policies that are economically, environmentally, and socially acceptable.

It seeks to provide a global umbrella for the plant protection sciences to facilitate and promote the application of the Integrated Pest Management (IPM) approach to the world's crop and forest ecosystems.

Membership Information: IAPPS has four classes of membership (individual, affiliate, associate, and corporate) which are described in the IAPPS Web Site www.plantprotection.org.

The *IAPPS Newsletter* welcomes news, letters, and other items of interest from individuals and organizations. Address correspondence and information to:

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