



International Association for the  
**PLANT PROTECTION SCIENCES**

**NEWSLETTER**

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## **IN MEMORY OF TONY BELLOTTI**



On March 6, 2013 CIAT Director General Ruben G. Echeverría announced the passing of **Dr. Anthony Charles Bellotti** at his retirement home in Naples, Florida, after a battle with cancer that lasted several months. Tony was a scientist of the highest caliber, who dedicated his entire working life to the pursuit of development impact through agricultural research.

Tony, as known to his friends and colleagues, was born at Staten Island New York, November 19, 1937. His long commitment to international agriculture began in 1962, when he joined the first group of Peace Corps volunteers in El Salvador. For two years, he supervised projects dealing with the production of vegetables, tropical fruits, and small livestock. After earning an MSc at New Mexico State University, Tony returned to the Peace Corps in 1967, serving first as an assistant director in Paraguay and then as a training officer in California until 1970.

Like so many Peace Corps volunteers, Tony realized that to make lasting contributions he needed more knowledge. So, he embarked on doctoral studies in the Department of Entomology with a minor in Plant Breeding at Cornell University. After completing his PhD, Tony joined CIAT in Cali, Colombia, initially as a Rockefeller Foundation post-doc. He developed an extraordinarily productive career as Cassava Program entomologist. His research resulted in more than 300 scientific publications. After his retirement in 2006, Tony was awarded emeritus status at CIAT but continued contributing generously to mentoring.

Tony leaves a legacy of enormous professional accomplishments. Through research teams formed with skill and care, he advanced the knowledge of cassava entomology from its infancy to maturity, opening the way for major contributions to improved livelihoods for cassava farmers. Tony's single greatest scientific achievement involved his role in the introduction of a parasitic neotropical wasp, *Apoanagyrus lopezi*, from Paraguay to sub-Saharan Africa for biological control

of the devastating cassava mealybug, *Phenacoccus manihoti*. The parasitic wasp became established in 26 African countries where it caused a satisfactory reduction in the population density of *P. manihoti* in farmers' fields. The economic benefits of this introduction are valued in the billions of dollars making this one of the world's most successful classical biological control activities.

Tony received a plethora of awards during his distinguished career. He received the International Plant Protection Award of Distinction (IPPAD) at the XIV IPPC in Jerusalem, Israel in 1999. It was at that meeting that the IPPC Future Directions Committee (FDC) formally approved the recommendation made at the 1995 meeting in Hague to establish the International Association for the Plant Protection Sciences (IAPPS). Tony was an IAPPS Governing Board member and Latin America/Caribbean Regional Coordinator from 1999-2006.

It has been my pleasure to have been associated with Tony through our CG Center activities. I consider him as a brilliant and productive scientist with a strong motivation to move pest management technologies out of the research station and onto the farmers' fields. He had a passion to help farmers in their battle against hunger and in their attempt to achieve food security. IAPPS is privileged to have had Tony share this passion through his role as Governing Board member and Latin America Regional Coordinator.

**Prof. E.A. "Short" Heinrichs**

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## **ENDOPHYTES FOR PLANT PROTECTION: THE STATE OF THE ART**

The German Society for Plant Protection and Plant Health (DPG) and the European COST Action FA 1103 announce the 5<sup>th</sup> International Symposium on Plant Protection and Plant Health in Europe (PPPHE2013), 27 – 29 May 2013 Berlin, Germany

Worldwide there is a general need for new antibiotics, chemotherapeutic agents and agrochemicals which are highly effective and have low toxicity for man and environment. The discovery of endophytes living inside of plants and the research on their biology opened the door to work on their usefulness for plant production. Endophytes on one hand induce secondary metabolites in plants which can be extracted for several purposes. On the other hand these substances may interfere with potentially pathogenic organisms of the produced plant and may, therefore, cause enhanced tolerance of plant, increased resistance or higher quality of products.

Following a common definition, endophytes are „Microbes that colonize living, internal tissues of plants without causing any immediate, apparent negative effects“. Growing without symptoms here means „growing without visible damages“. While such a symptomless nature of endophyte occupation in plant tissue has prompted focus on symbiotic or mutualistic relationships between endophytes and their hosts, the observed biodiversity of endophytes suggests they can also be aggressive saprophytes or opportunistic pathogens.

Fungi and bacteria are the most common microbes existing as endophytes. Can virus be endophytes, too? Mycoplasmas, archebacteria? Do we have to recognize mycorrhizas - growing inside the roots - as endophytes in spite of having external organs? Should we define more precisely what we mean speaking about endophytes? Since years a huge amount of plant species are collected in order to isolate new useful endophytes from their tissue. What are the selection strategies for plants to be investigated afterwards? How is specificity of host/endophyte interrelationships managed, if the organisms are intended to be used as agent? Which new methods of screening for their metabolites, or the metabolites the host plants express in response to them?

Agricultural use of endophytes is intended especially on the field of plant protection. The control of plant-pathogenic bacteria and fungi is receiving increasing attention as alternative to synthetic pesticides and antibiotics. Furthermore, these endophytic microorganisms are likely to be adapted to the presence and metabolism of complex organic molecules and therefore show biodegradation activities. How successful are research groups recently to develop active substances from endophytes which can be used in plant protection? How is the registration procedure regulated for biological pesticides? Which importance does it have to develop inocula of biofertilizer, stress protection and biocontrol agents? Which bottlenecks are limiting the use of endophytes in agriculture and to provide solutions for the economically and ecologically compatible exploitation of endophytes?

All these are very important issues which need to be addressed in order to make substantial progress in the development and deployment of endophytic organisms. This symposium wants to provide the scientific basis for trying to answer some of these open questions, by highlighting the state of the art of endophyte research for use in agriculture in Europe, by means of oral contributions and poster presentations. To better follow up on the discussion rising from the presentation, we will offer workshops and meetings throughout the symposium to meet each other for an intensive discourse.

The International Symposium on Plant Protection and Plant Health in Europe is organized jointly every two years by the Deutsche Phytomedizinische Gesellschaft (German Society for Plant Protection and Plant Health, DPG, [www.phytomedizin.org](http://www.phytomedizin.org)), the Julius Kühn-Institut (JKI, [www.jki.bund.de](http://www.jki.bund.de)), and the Division Phytomedicine of the Faculty of Agriculture and Horticulture of the Humboldt University Berlin ([www.hu-berlin.de](http://www.hu-berlin.de)).

Registration is available on the Conference website until May 1 [www.ppphe.phytomedizin.org](http://www.ppphe.phytomedizin.org). DPG and IAPPS agreed to promote their conferences on their websites and publication organs reciprocally- a further step to a strong science based worldwide network of plant protection societies.

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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](http://www.plantprotection.org).**

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