

CHRONICA HORTICULTURAE

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Horticultural Highlights

The Development of Product Flows in the International Fruit Trade: Is the European Union Influenced by New Demanders and Changing Quality Requirements? • Is Jean Bourdichon the Designer of the Hunt of the Unicorn Tapestries?

Symposia and Workshops

Wild Relatives of Subtropical and Temperate Fruit and Nut Crops • Physiological Principles and Their Application to Fruit Production • Processing Tomato • Grapevine Breeding and Genetics • Soil and Substrate Disinfestation • Postharvest Unlimited



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Erratum

The article "Interpreting Responses to Observed Climate Shifts Helps Managers of Temperate Perennial Horticulture Plan for Future Change" in *Chronica Horticulturae* 54(2):5-9 contained an error on page 7. The sentence "Trees on 'M-11' rootstock were found to require less chill than those on either 'M-26' or 'M-27'." should have read "Trees on 'M-9' rootstock were found to require less chill than those on either 'M-26' or 'M-27'."

Cover photograph: Fruit market in Valencia, Spain, showing imports from all over the world. See article p.23





Roderick Drew

Professor Roderick Drew – President of ISHS (2014-2018)

Roderick Drew, President of ISHS



IHC2014



The 29th International Horticultural Congress (IHC2014) was an outstanding success. Held in Brisbane from 17-22 August 2014, it attracted 3,400 delegates from more than 100 countries. The program featured 8 plenary lectures, 159 keynote speakers, more than 1200 oral and 1200 poster presentations in 4 plenary sessions and 43 symposia. The program included pre-congress training schools, workshops, business meetings, an associated exhibition and garden display, a photographic competition, a grower breakfast and post-congress tours. The pre-congress training schools were attended by 50 delegates from Pacific Island Countries, the Philippines, Pakistan and the Caribbean. Their participation was funded by ACIAR (the Australian Centre for International Agricultural Research – a gold sponsor of the congress), the Crawford Fund in Australia, and CTA (Technical Centre for Agriculture and Rural Cooperation). Horticulture Australia Limited and the Queensland Department of Agriculture, Forestry and Fisheries Foundation were sponsors who made a major contribution to the congress in terms of both funding and staff time. Bayer was the platinum commercial sponsor and is continuing to make a major contribution to ISHS congresses. Griffith University was the only university sponsor and in addition to gold



sponsorship contributed considerable time of staff, including that of co-President Rod Drew, and over 100 student and staff volunteers who aided delegates during the congress. IHC2014 built on the success of IHC2010 in Lisbon, which also attracted more than 3000 delegates from over 100 countries, and demonstrates the strength of, and support for, ISHS today. The next horticultural congress will be held in Turkey in 2018, and I invite you to mark it in your diary and plan to join us there.

A detailed report of the congress including more photos will be included in the December issue of *Chronica*.

It is both an honour and a privilege to be elected President of the International Society for Horticultural Science at the recent council

meeting in Brisbane, Australia. I am very mindful that our society is an international one whose membership represents many nations

from across the world and I believe that every member and member country is important. Each one brings to our society a unique

culture with unique perspectives, horticultural strengths and challenges. The voluntary involvement of thousands of people is the life blood of our society and I acknowledge the valuable, varied and rich contribution that is made at every level, both in more visible positions such as board, executive and council members, symposium conveners, editors and referees, and in less visible ways, by serving on scientific committees, as participants at symposia, or in the many support roles that are the foundation and strength of our organization. We are indeed fortunate to have a very professional secretariat in Leuven who manage our publications and the day-to-day operations of our society. They are a dedicated and experienced team who are well led by our long term Executive Director, Jozef Van Assche. Every contribution helps to make ISHS an effective support to horticulturists and horticultural industries worldwide. The strength of our society is that we have a common goal in researching horticulture and applying it to enrich our countries, our people and our culture. We are an international family of friends and colleagues and I look forward to working both for you and with you over the next four years.

Horticulture provides the world with life, lifestyles and landscapes. It adds diversity, colour, flavour and fragrance to our daily diet and living, while supplying staple foods, nutrients, vitamins, beverages, nuts, parks and gardens and urban landscapes, to name a few. It is abundantly clear to me that horticulture has an increasingly profound role to play in our world's future. The central role of horticultural production in feeding the burgeoning world population is undeniable, and as our cities continue to grow rapidly, the field of urban horticulture is vital in sustaining the ecology and social environment of city dwellers. We live in a rapidly changing world and how we

as a society continue into the future must be characterized by an ability to change and adapt in sustainable and appropriate ways. As a new board, we are keen to identify and meet the challenges and opportunities facing both horticulturists and the many roles that horticulture must play in our world.

It is my privilege to introduce our new board to you. Our new Vice-President is Silvana Nicola from Italy. Silvana has been an active member of our executive committee for the past 8 years and is in an excellent position to chair the executive and oversee the scientific program of the society. Maintaining a good scientific program and continuing to hold symposia of a high standard on a wide range of topics is fundamentally important to ISHS. Yves Desjardins from Canada is continuing on the board in his role of Publications. While serving on the previous board, he developed initiatives to improve the production and publication of *Acta Horticulturae*, and has been involved in the acquisition and partnering of ISHS with new open-access on-line journals: the European Journal of Horticulture Science, and the Journal of Horticultural Science and Biotechnology. As a board, one of our immediate goals is to establish a new editorial board and implement these joint-ventures as soon as possible. As well as taking on the role of Secretary and responsibility for communications, Jill Stanley from New Zealand will work with Yves in Publications, and will take responsibility for *Chronica Horticulturae*. For the first time ever, we are privileged to have an extra member on the board who will represent Asia. In this position Ryutaro Tao from Japan will allow us as a society to better liaise with our large membership in the Asian continent. In addition, Ryutaro will take on the important role of Treasurer. Having an additional person on our board now allows us to dedicate a member to head our efforts in strategic plan-

ning and to build the society and membership. We are particularly enthusiastic to reach out to young scientists and look for ways to mentor them as they progress in their careers and contribute to ISHS. Jens Wünsche from Germany will fill this important and strategic role.

I believe that the primary role of the ISHS board is to represent all of its members. We are no longer in a growth period, and need to look at ways to build and serve our membership. I plan to work with the board to review membership benefits and improve our service to all members. We will look for ways to attract new members and increase the number of members who renew their membership each year. We will review our role in service to younger members who are early in their careers or still studying. We would like to see ISHS become more active in Africa, Asia, South and Central America and the Pacific Island Countries. We need to reach out to horticulturists in these countries and support them as they serve the horticultural industries in their countries. Expanding the board to include a representative from Asia has been an important step in this direction. I would like to build on this new Asian position and eventually have a representative from Africa and South America on future boards.

I have been a member of ISHS since the early 1970s. I am passionate about horticulture and ISHS and the vital role it plays in our society. My style of leadership is inclusive. I will always be open to an approach from any member and will listen to your concerns and suggestions. Please feel free to contact me. I look forward to working with you in the next four years and greatly appreciate your support in my endeavour to serve ISHS in this important role.



Did you renew your ISHS membership?

Logon to www.ishs.org/members
and renew online!



The New Board of the ISHS



The new Board members at the ISHS General Assembly at IHC2014.

On August 21, 2014, at the meeting of the General Assembly, the ISHS members present confirmed and inaugurated the new Board of the ISHS. As laid down in the Statutes and in the Rules of Procedure of the Society, the Board is composed of six elected persons and two *ex officio* members.

The new Board members with their respective responsibilities for the next four years are:

- Prof. Dr. Roderick Drew (Australia); President of the ISHS and Chairperson of the Board
- Prof. Dr. Silvana Nicola (Italy); Vice-President and Vice-Chairperson of the Board, Responsible for the Scientific Activities of the Society
- Prof. Dr. Ryutaro Tao (Japan); Treasurer, Responsible for the Financial Affairs of the Society
- Prof. Dr. Yves Desjardins (Canada); Responsible for Publications
- Jill Stanley (New Zealand); Secretary, Responsible for Communications of ISHS, Editor of *Chronica Horticulturae*
- Prof. Dr. Jens-Norbert Wünsche (Germany); Responsible for Innovation, Outreach and Strategy and Editor-in-Chief of the European Journal of Horticultural Science (eJHS)
- Prof. Dr. Yüksel Tüzel (Turkey); President of the XXXth International Horticultural Congress
- Ir. Jozef Van Assche (Belgium), Executive Director of the ISHS

PROF. DR. RODERICK DREW, PRESIDENT OF THE ISHS AND CHAIRPERSON OF THE BOARD



Rod Drew was born in Ipswich, Queensland, Australia in 1950. He received his Bachelor of Agricultural Science from the University of Queensland in 1972, where he majored in Plant Nutrition and Plant Physiology. He then studied pure and statistical mathematics at the University of Queensland. He received his Master of Rural Science in 1983 from the University of New England, New South Wales; and his PhD from Murdoch University, Western Australia, in 1992. Both his Masters and PhD theses were on micropropagation of *Carica papaya*. In 2012 he was awarded a Doctor of Science from the University of Queensland for his thesis entitled "*Carica papaya* (L) as a Model for Biotechnology of Tropical Fruit Species". In

1999 he was awarded the Graham Gregory Medal for excellence in Research in Horticulture in Australia.

In 1972 he began his career as a research horticulturist for the Queensland Government in their Department of Primary Industries, whose purpose was to serve and support the horticultural and agricultural industries of the state. Initially, he worked on weed control in horticultural crops. In order to solve the virus problems facing the local strawberry industry, he worked with a colleague, Dr. Mark Herrington, to pioneer plant tissue culture research in Queensland in 1973. He continued to develop *in vitro* techniques for other fruit, vegetable and ornamental species over the next 26 years at Redlands Research Station in southeast Queensland. In 1997 Rod moved to an appointment as Senior Lecturer at Griffith University in Brisbane and was promoted to Associate Professor in 2000 and Professor in 2005. He convened and taught a Masters of Biotechnology and teaches horticulture, plant science, plant tissue culture, plant biotechnology and food plant science to Masters and undergraduate students. His undergraduate, Masters and PhD students have come from many countries including Southeast Asia, Pacific Islands, the Subcontinent, Middle East and Europe.

Rod's research interest is biotechnology of tropical and subtropical horticultural crops. His research expertise includes *in vitro* culture,

plant molecular biology and gene transfer; virus elimination and virus resistance, interspecific and intergeneric hybridisation, and associated embryo rescue; development of improved agronomic traits and novel crop genotypes, and selection and propagation of superior genotypes for commercial production. He is best known for his work on *Carica papaya*. His research in papaya has covered micropropagation, cryopreservation, embryo rescue and plantlet recovery, traditional breeding, marker assisted breeding, intergeneric hybridisation between papaya and related *Vasconcellea* species, development of molecular markers and identification of genes that control PRSV-P resistance in *Vasconcellea* species. Currently, his PhD students are working on function and expression of virus resistance genes in *Vasconcellea* species and in vitro and marker assisted breeding to produce new commercial varieties for the Australian papaya industry. He has published more than 150 journal papers, book chapters and invited review papers and in excess of 50 of these have been on *Carica papaya*.

Rod has worked as a visiting Professor on sabbatical leave with Professor Pierre DeBergh at the University of Gent, Belgium in 2002; Dr. Dennis Gonsalves at USDA Pacific Basin Agricultural Research Center, Hilo, Hawaii, USA in 2006; and Professor Keizo Yonemori at Kyoto University, Japan in 2010. During his career, he has been the leader of over 40 externally funded research projects both in Australia and internationally. In the past 25 years he has led collaborative research projects with colleagues in Japan, Hawaii, Malaysia, Philippines, Thailand, and Vietnam.

Rod has performed many leadership roles in both professional and voluntary organisations. He has been a member of ISHS since the early 1970s. He has initiated new working groups, convened new and established symposia (commencing with the "International Symposium on Biotechnology of Tropical and Subtropical Species" in Brisbane in 1997), and served as a council member for Australia. He served on the ISHS executive for 8 years as Chair of the Commission Biotechnology and In Vitro Culture, and has edited 8 volumes of *Acta Horticulturae*. More recently, he was co-President of IHC2014 and at the council meeting in Brisbane, 2014, was elected as President of ISHS. He is President of the Australian Society for Horticultural Science, a member of the International Society for Plant Biotechnology, a Registered Horticulturist with the Australian Institute of Horticulture and a Fellow of the Queensland Academy of Arts and Science.

He has been well supported in his career by his wife Leone, and children, Lachlan and Rachel. He likes to go fishing and watch the Brisbane Broncos play rugby league. He plans to retire from his current teaching position at Griffith University so that he can devote the next four years to his role as President of ISHS.

Rod is keenly aware of the vital role that so

many facets of horticulture play in our daily lives and is motivated to raise general awareness and appreciation of the contribution that horticulture makes to our world. He is also passionate about the role that horticulture can and must play in feeding the many who are hungry and malnourished, and in meeting the increasing demand for food as the world population expands and resources diminish.

PROF. DR. SILVANA NICOLA, VICE-PRESIDENT AND VICE- CHAIRPERSON OF THE BOARD, RESPONSIBLE FOR THE SCIENTIFIC ACTIVITIES OF THE SOCIETY



Silvana Nicola was born in Italy, in 1961, graduated in Agricultural Sciences from the Università degli Studi di Torino in 1988, and obtained a PhD in Horticultural Sciences from the University of Florida in 1997.

Dr. Nicola has had the national scientific habilitation (ASN) as Full Professor since 2014 and she has been Associate Professor since 2006 at the Università degli Studi di Torino, Italy in Vegetable Crops & Medicinal and Aromatic Plants. Her present professional activities include teaching on vegetable, medicinal and aromatic plant crops and production chains at BSc, MSc and PhD level at the Università degli Studi di Torino. She also conducts research on the effect of pre-harvest environmental factors on quality and safety of fresh and fresh-cut produce, especially leafy vegetables and culinary herbs, on fresh-cut produce chain and aromatic plant production and post-harvest processes. Dr. Nicola has worked since 1988 in Horticultural Sciences and Development on seedling and transplant biology and physiology, soil and soilless culture, protected cultivation, pre- and post-harvest handling and processing, post-harvest physiology and technology, quality and safety, and supply chain management. She is actively involved in R&D, quality and safety assurance, GAPs and other international certifications with private companies and international bodies, FAO and WHO among others.

Prof. Nicola has led and managed more than 60 research projects, interacted with several universities around the world and signed Research and Teaching MOUs with foreign universities as part of International Relations at the University. She is author or co-author of ca. 250 publications (140+ international), including scientific journal papers, book chapters, technical reports, conference papers, digital reports, websites and popular articles. She is Chief Editor of a new series of Springer *Advances in Olericulture*, member of the Advisory Board

of the journal *Agricultural Communications*, member of the Editorial Board of the journal *Turkish Journal of Agriculture & Forestry*, referee for several international scientific journals and research projects, expert or consultant for the EU, FAO, international agencies and bodies, national ministries, and private companies, and has been an invited speaker at approximately 20 international scientific symposia, meetings and conferences.

Dr. Nicola has been supervisor of domestic and foreign PhD students and postdoctoral fellows visiting from several countries, external examiner of MSc and PhD students, and professor for several universities. As a teacher at Università di Torino, Italy, since 1988, Silvana Nicola has taught at the European level in the 'Lifelong Learning Programme EuroLeague for Life Science' and has been invited to lecture at several institutions since the year 2000 and to classes in MSc courses.

Dr. Nicola has worked, interacted and networked in several countries outside the EU, with different organizations, private companies and bodies. Throughout her career she has also had experience working in a worldwide dimension by attending approximately 60 international meetings or symposia and by participating in international exchanges at EU and non-EU institutions.

Prof. Nicola has been a Fulbright Scholar in the USA (1992-1993), a Research Assistant at the University of Florida, USA (1993-1996), an Assistant Professor at the University of Torino (1996-2006), and an International Visiting Scientist at the Universidad Politécnica de Cartagena, Spain (2003, 2014). As assistant and then associate professor at the Faculty of Agriculture, Università degli Studi di Torino, Dr. Nicola was actively involved in faculty educational and internationalization activities and commissions. She was a member of the Board – Section Vegetables – of the Italian Society for Horticultural Science from 2004 to 2010, a member of the Editorial Board of the Italian Journal of Horticultural Sciences (*Italus hortus*) from 2004 to 2011, and since 2013 has been a member of the Technical Board of Medicinal and Aromatic Plants, Ministry of Agricultural, Forest and Food Policies.

Prof. Nicola has been a member of ISHS since 1989 and in 1990 participated in her first IHC meeting in Florence, Italy. Since then, she has actively attended numerous ISHS meetings and has been involved in ISHS activities. She has always believed in the importance of international interactions with individuals, professionals and scientists to foster knowledge and competencies at a professional level, in addition to the paramount value of enrichment due to the cultural exchange between human beings. She was Co-Convenor of the ISHS Symposium on Issues and Advances in Seed, Transplant Production and Stand Establishment Research at the IHC2002 in Toronto. She was on the Organizing Committee of the 5th ISHS



International Postharvest Symposium held in Verona, Italy, in 2004, and has been Session Chairperson at numerous ISHS symposia. She has acted as Chairperson of the Working Group Quality Management of Fresh Cut Produce of the ISHS (2007-2011) and in this capacity she organized the second ISHS Conference of the series. She was elected Chair of the ISHS Section Vegetables in 2006 and re-elected in 2010. During the two terms, she convened or co-convened 2 ISHS symposia and 1 ISHS workshop, was on the Organizing Committee of 4 ISHS symposia, and was a member of the Scientific Committee of 28 ISHS symposia. She has also been an invited keynote speaker at 7 ISHS symposia, editor or co-editor or member of the editorial board of 11 *Acta Horticulturae*, and Session Chairperson at numerous symposia. In addition, she has represented ISHS at 18 symposia organized under the Section Vegetables and has been the initiator of new ISHS symposia throughout the years (e.g. Tomato in the Tropics, Villa de Leyva, Colombia, in 2008; Vegetables Production and Quality and Process Standardization in Chain: a Worldwide Perspective, Beijing, China in 2008; Biotechnology and Other Omics in Vegetable Science, Antalya, Turkey in 2012; Eurasian Symposium on Vegetables and Greens, Yerevan, Armenia in 2012) or co-initiator (I International Symposium on Vegetable Grafting, Wuhan, China in 2014).

Prof. Nicola recognizes that the importance of horticulture in the world is often underestimated causing a decrease of advanced studies and financing in many countries. She thinks that there is a need for diversified actions able to bring daily attention to the sector at local and international level. Prof. Nicola is strongly supportive of continuing the path of the previous board in their commitment to scientific quality of publications while also seeking full scientific recognition for its publications. She supports promoting international events organized in countries with less access to international symposia, because scientists and horticultural practitioners from all countries have a contribution to make to ISHS and all members of ISHS need to learn from any local diverse approaches to horticultural science. An international society must pursue the most inclusive involvement of key actors, which means reaching out to fellow scientists and horticulturists in emerging nations. The issue of decreasing membership numbers must also be addressed. Prof. Nicola also advocates an increase in the involvement of private industry in the development of and participation in international events. Collaboration between scientists and industry is crucial to apply sound and advanced technologies that will contribute to sustainable livelihoods. Silvana strongly favors the expansion of ISHS activities at educational, training and consulting level, providing the largest network of experts around the world. Despite the decrease of advanced studies in horticulture, she supports

the promotion of more international educational programs giving students and trainees around the world the opportunity to learn from different perspectives across the diverse range of horticulture. As Scientific Coordinator and Chair of Executive Committee she is willing to strengthen the scientific program of ISHS through the Executive Committee Chair and Vice-Chairpersons, emphasizing the role of the ISHS as a frontrunner in international scientific and professional issues in horticulture. Partnerships with national and international societies and organizations can be increased for synergistic and common actions, also by the involvement of council members lobbying and having an impact at national level. Working together, ISHS members are able to make a difference in our sector and help policy makers to make informed decisions.

Silvana is a strong advocate for the further development of the Society and is willing to dedicate even more time than previously to overcome difficulties and expand the impact of the Society and its services in all continents, reaching young graduates as well as experienced professionals and scientists.

PROF. DR. RYUTARO TAO, TREASURER, RESPONSIBLE FOR THE FINANCIAL AFFAIRS OF THE SOCIETY



Prof. Dr. Ryutaro Tao was born in Osaka, Japan, in 1961. He graduated from Kyoto University with B.S. in Agriculture in 1984 and with M.S. in Agriculture in 1986. He received a Doctor of Agriculture degree from Kyoto University in

1992. He conducted his postdoctoral research on the transformation of persimmons with Prof. Abhaya M. Dandekar at the Department of Pomology, University of California at Davis for two years from 1993 to 1995 as a Japan Society for the Promotion of Science (JSPS) Postdoctoral Fellow.

Ryutaro Tao has been a professor at Kyoto University since 1988. His present professional activity includes teaching courses in horticulture, pomology, and cell biology at the Faculty of Agriculture and the Graduate School of Agriculture at Kyoto University.

Prof. Tao's research interest is the reproduction biology of fruit trees, such as the S-RNase-based self-incompatibility system in *Prunus*, the sexual system in *Diospyros*, and floral induction in *Diospyros* and Rosaceae. He has also been involved in improvement of fruit trees by means of tissue culture and transgenic techniques. His research results have been published in over 100 refereed scientific journals and he has authored over 25 reviews and book chapters.

He has been awarded the American Society for Horticultural Science (ASHS) Cross-commodity Publication Award, the Japanese Society for Horticultural Science (JSHS) Publication Award, the JSHS Promising Researcher Award, and the JSHS Outstanding Horticulturist Award.

Domestically, Ryutaro Tao has served as a member of several important committees of JSHS, such as the JSHS Symposium Committee and the Journal of the Japanese Society for Horticultural Science (JJSHS) Editorial Committee. He has also served as the JSHS Secretary General, the JSHS Council member, and the JSHS Executive Director of International Affairs.

Internationally, Prof. Tao has served as a scientific committee member and Convener of ISHS and non-ISHS symposia. Since 2004, he has been the ISHS Council Member representing Japan. He is currently Chair of the ISHS Working Group on Cherry Production in the Commission Pome and Stone Fruits and is organizing the 8th ISHS International Cherry Symposium that will be held in June, 2017, in Yamagata, Japan.

In addition to his responsibilities as treasurer, Ryutaro Tao is keen to share his experience, vision, and enthusiasm to contribute to the fruitful future of ISHS by making more opportunities for two-way information flow between Asia and the rest of the world, and establishing this as one of the many important activities of ISHS.

PROF. YVES DESJARDINS, RESPONSIBLE FOR PUBLICATIONS



Prof. Desjardins was born in Montreal, Canada in 1959. He graduated from the University of Guelph with BS in 1982 and a M.Sc. in 1984. He received a Ph.D. from Laval University in 1990 and has been professor

at Laval University since 1991.

From 1999 to 2002, he was Director of the Horticulture Research Centre at Laval University and also directed the Québec Phytoprotection Network from 1999 to 2003. He was president of the Canadian Society for Horticultural Sciences from 2002 to 2004. He is now Director of Academic and International Affairs at the Institute for Nutraceutical and Functional Food (INAF). He is the lead scientist of one of the research axis (Characterization of bioactive compounds) at INAF, but also for INAQ, the "Institut de Nutrition Aquitaine-Québec" a new international institute devoted to nutrition research. He is also director of the RIHoD, the Québec sustainable horticulture innovation network, an organization aimed at linking researchers and growers association together and driving open-innovation and research pro-

jects. He has led many networks of excellence at the national level and is active in many international networks in France, Brazil, Mexico, Belgium and Italy.

Prof. Desjardins is still active in research and works on fruit and vegetable crop physiology and pursues fundamental work on in vitro plantlet ecophysiology. His laboratory uses functional genomic tools like transcriptomics, proteomics, and metabolomics, to study the adaptive phenomena taking place during the transition from heterotrophy to autotrophy in the course of acclimatization of tissue cultured plants. Prof. Desjardins has directed six PhD students and numerous R&D projects in horticulture. He is the author of more than 90 peer referred scientific papers and several technical papers and reports dealing with tissue culture and vegetable and fruit physiology, and 11 book chapters on the physiology and acclimatization of tissue cultured plants and health effects of fruits and vegetables. Since 1999, he has studied the health effects of fruit and vegetables. His recent research focuses on the characterization and extraction of polyphenols, particularly proanthocyanidins, found in blueberries and cranberries and their effects on cardiovascular diseases, metabolic syndrome, diabetes and other chronic diseases. He collaborates on numerous projects related to health effects of FAV and is involved in a number of clinical trials on the effect of small fruit bioactive compounds (polyphenols) on type-2 diabetes.

Prof. Desjardins has been a member of ISHS since 1986, when he participated in his first IHC meeting at Davis, California. Since then, he has attended every IHC meeting. His active involvement with ISHS dates back to 1994 when he was Canadian representative on the Council. From 1996 to 2002, he was actively involved in the organization of the IHC2002 in Toronto, being the Chair of the Scientific Task Force Committee. In this function, he was instrumental in proposing a new structure for the scientific program of the International Horticultural Congress where Chairs of Sections and Commissions were closely associated with the organization of thematic symposia. This change has generated much interest in the Congress, has provided focus and coherence to the scientific program and created a feeling of belonging normally found in smaller symposia organized by the ISHS around the world. The same model has since been adopted by all other editions of IHC with great success.

Prof. Desjardins has been Convener or Co-Convener of many symposia organized by ISHS. For instance, he convened the Second International Symposium on Acclimatization of Tissue Cultured Plants in Merida, Yucatan in 2004. He was also actively involved in the planning of the Third International Symposium on Acclimatization of Tissue Cultured Plants in Faro, Portugal in 2007, where he was also the plenary invited keynote speaker. Being involved in research on health effects of fruit

and vegetables, he organized in 2005 the first International Symposium on Health Effects of Fruit and Vegetables (FAVHEALTH, Quebec City, Canada) under the auspices of ISHS. The goal of this symposium series was to create a unique forum for researchers from different disciplines, like horticulture, nutrition and health sciences, to meet formally and bridge the communication gap between agriculture and medical sciences. The conference also aimed at asserting the leadership of horticultural sciences in an emerging field dominated by medical sciences. The ISHS Quebec City's meeting was a great success and led to the creation of the ISHS Commission "Fruits and Vegetables and Health" in 2006 of which he became Chair. In 2010, he organized a Symposium on breeding for improving fruits and vegetables and health within the Lisbon IHC2010 meeting under the auspices of ISHS and OECD. The FAVHEALTH series is very popular and continues to be an important platform to share new information on health effects on fruit and vegetables.

Prof. Desjardins believes in improving the overall quality of the Society's publications and enhancing the use of information technologies and computers for publishing and scientific exchanges. Yves and his wife Louise have four sons, Charles, Philippe, Éloi and Clément. He is the happy grandfather of two grandsons.

JILL STANLEY, SECRETARY, RESPONSIBLE FOR COMMUNICATIONS OF ISHS, EDITOR OF *CHRONICA HORTICULTURAE*



Jill Stanley was born in Matamata, New Zealand, in 1958 and has been an active horticultural researcher for over 33 years. She is currently based at the Clyde Research Centre, which is part of the New Zealand Institute

for Plant & Food Research, where she is Liaison Scientist and Team Leader Pipfruit & Summerfruit Physiology. Her research specialty is horticultural physiology, mainly focusing on understanding the physiological processes of tree and fruit development to improve productivity and fruit quality. Jill is passionate about using physiological understanding to provide practical solutions for growers. Her projects are wide-ranging but she has most recently focused on developing a range of orchard and post-harvest strategies to improve consistent fruit quality of apricots, both for existing cultivars and newly bred cultivars being developed at Plant & Food Research. In addition, research has recently been initiated to develop new cherry and apricot orchard planting systems, aimed to improve productivity by two- to three-fold, and

this is part of a larger programme that also covers apple, pear and kiwifruit.

Jill has previously worked on a range of other crops and plants, including berryfruit, apple, kiwifruit, grape, ornamental shrubs, flower crops and sphagnum moss. One of the more unusual projects was a consultancy developing mine revegetation techniques using native mosses and lichens at the largest copper and gold mine in the world in West Papua, Indonesia, at 4000 m above sea level. This research was then extended to develop similar strategies at a large coal mine on the West Coast region of New Zealand.

Jill has been based in several locations within New Zealand and has spent two periods overseas. She spent 6 months researching flower initiation in chrysanthemum at Glasshouse Crops Research Institute at Littlehampton in the United Kingdom in 1985 and 4 years developing collaborations in Europe for HortResearch based at IRTA (Institut de Recerca i Tecnologia Agroalimentàries) in Barcelona, Spain from 2004 to 2008.

Jill has been an active member of the New Zealand Institute of Agricultural and Horticultural Science and its predecessor, the New Zealand Society for Horticultural Science. She has served as a Council member for a total of 6 years and was President for a 2-year term. She has also served on organising committees for national conferences, was a member of Primary Resources Advisory Committee of the Royal Society of New Zealand for 2 years and has been a Trustee on the New Zealand Horticultural Advancement Trust since 2001. She has received several awards, including the Queen Elizabeth II Study Award in 1985 to carry out research in the United Kingdom, the Royal Society of New Zealand Science and Technology Bronze Medal in 1996 for her outstanding commitment to the advancement of science and the Margaret Hogg-Stec Scholarship in 2012 to enable her to attend an international symposium in South Africa.

Jill has served as an ISHS Council member since 1998 and has been on several organising committees and scientific committees for ISHS symposia. She was the Vice-President (Scientific Programme) of the organising committee for the International Horticultural Congress for the past 8 years and was responsible for overseeing the 43 symposia, 23 workshops and 4 plenary sessions held at the Congress in August this year.

Jill sees that there are three key areas ISHS should continue to build on: improving opportunities for networking, particularly through symposia; building members' knowledge and capability through improving ISHS journals and through increasing training opportunities; and advocacy for horticulture and horticultural science. She particularly wants ISHS to engage more with young people to ensure ISHS is relevant to them and can deliver benefits that will help them with their careers. The other related



challenge is to communicate the value of horticulture and horticultural science to the wider community, particularly politicians and policy makers, but also to the general public.

PROF. DR. JENS-NORBERT WÜNSCHE, RESPONSIBLE FOR INNOVATION, OUTREACH AND STRATEGY AND EDITOR-IN-CHIEF OF eJHS



Professor Dr. Jens-Norbert Wünsche is a crop physiologist, specializing in plant/fruit physiology of temperate and (sub)tropical crop species. He attempts to combine hormone and carbohydrate physiology with molecular biology, targeted at identifying the genetic and physiological basis of flower induction and fruit abscission, but also at processes involved in fruit growth and fruit quality in response to environmental and/or crop management triggers during the pre- and postharvest period. Specifically, he is interested in understanding how the convergence of science disciplines will further impact on crop performance.

In recent years, he has assumed several broader professional responsibilities and science leaderships. He is currently the President of the German Society for Horticultural Sciences (DGG) and the Editor-in-Chief of the European Journal of Horticultural Science (eJHS), a Board Member of the Centre for Agriculture in the Tropics and Subtropics at the University of Hohenheim and of the Centre of Competency for Fruit Science at Lake Constance.

His interest in fruit production was spurred in early childhood years by involvement in a family-operated apple orchard and by his father's management position in one of the largest fruit cooperatives in the former East Germany. His first exposure to fruit production systems motivated him to perfect his practical experiences and to extend his theoretical knowledge base. During his study of Agricultural Science at the Martin Luther University in Halle/Saale, he specialised at the Fruit and Vegetable Science Department and for his pre-diploma he mapped and catalogued wild apple species (*Malus sylvestris*, *Malus pumila*) in the UNESCO biosphere reserve "Mittelbe" . A half-yearly practical work experience in a tree fruit nursery then led to the preparation of a diploma thesis on "Improved technologies for seed processing in tree fruit horticulture".

His doctorate studies at the Fruit and Vegetable Science Department of the Friedrich Wilhelms University in Bonn and at the Department of Horticultural Sciences at Cornell University in the US allowed him to study plant physiology more comprehensively and his PhD thesis dealt

with the significance of leaf area development and light interception for yield performance of various apple production systems.

Development of his professional career has included a post-doctoral appointment at HortResearch in New Zealand. At this organisation, he worked as a senior scientist in the Fruit Research Group until September 2004. During this time, while on 8-month sabbatical leave at the Fruit and Vegetable Science Department of the Friedrich Wilhelms University in Bonn in 2000, he completed his second doctorate entitled "New technologies for a quantitative assessment of carbon assimilation and partitioning as dependent on carbon availability and crop load of apple (*Malus domestica* Borkh.)". This qualification conferred on him the *Venia Legendi* (teaching authority) for fruit and vegetable sciences at university level in Germany. His position at HortResearch also provided him with significant experience in business development in new geographical territories (e.g. South America) and skills in developing proposals and relevant science targets for public and business driven investment across several areas, including sustainable fruit production, gene discovery and health related compounds.

From 1 October 2004 he has been the incumbent Professor for the Section of Crop Physiology of Specialty Crops at the Department of Crop Sciences, University of Hohenheim. In his position to date, he has initiated several courses in plant physiology and horticulture at BSc, MSc and PhD level, developed research and commercial collaborations in Germany and abroad (specifically South East Asia, Africa and Israel) and has strengthened and focused department efforts by building projects around key competencies in horticultural physiology. He has developed a commercially focused and industry aligned research portfolio.

Professor Jens Wünsche has been a member of the ISHS since 1996 and has served as country representative for Germany on the Council of the ISHS since 2006. He, on behalf of the DGG and in collaboration with the Swiss Society of Agronomy (SGPW), presented a bid at the IHC2010 Council meeting in Lisbon to host the 30th International Horticultural Congress in Stuttgart in 2018. The theme was "Smart Science for Innovation and Sustainability in Horticulture". He was instrumental in nominating and lobbying for Dr. Detlef Virchow as the new Executive Secretary of GlobalHort, following Rémi Kahane in that position. As a member of DGG and ISHS, Professor Wünsche was loyal to both organizations, always aiming for a win-win situation in the process of transferring the eJHS from the German to the International Society for Horticultural Science. Undoubtedly, he was driving this process for the benefit and brighter, more successful future of both societies. He has been the Convener or Co-Convener of four ISHS symposia and has (co)edited four volumes of *Acta Horticulturae*.

To date Professor Wünsche has 55 scientific publications in peer reviewed journals, 30 commercial reports, over 100 conference presentations and one chapter in a horticultural textbook. In his academic career he has received considerable professional recognition and several awards. The inaugural Miklos Faust Award presented to him by the International and American Society for Horticultural Science (ISHS, ASHS) at the 26th International Horticultural Congress in Toronto in 2002 was one of the highlights. His career, which has included several years abroad, has allowed him to develop a thorough understanding of many fruit production regions of the world. It has also enabled him to build an extensive global network of colleagues in the scientific world, those involved in fruit industries and wider stakeholders associated with horticulture, and to liaise with many emerging market sectors with which an advanced horticultural sector now connects.

He is inspired by the opportunity that now exists for more leadership within this Society – a comprehensive and challenging role that encompasses science activities, education, advocacy, networking, development work and industry and commercial imperatives. There is a strong need for the entire horticultural community to work together to change the image of horticulture held by the public. The academic situation does not reflect at all the economic relevance of horticulture! His vision as a Board member of the ISHS with responsibility for Strategy is as follows:

Advocacy. Advocating for greater support of horticultural initiatives worldwide to promote our profession to policy-makers, administrators, politicians and funding agencies. We as a Society of academics and horticulturists need to lead the way to gain increased visibility and greater recognition by these groups. Being proud of our Society, it is essential to maintain and to expand on our membership base. Promoting horticultural research is the best way to establish sustainable and consistent networks. It also provides opportunities for effective training and capacity building, not only of young scientists but also of less advantaged colleagues.

Scientific symposia. Exploring other formats and program structures for organizing and hosting symposia. Are we still attracting young scientists in sufficient numbers? We may need to engage with other societies, perhaps organizing cross-discipline events.

Publications. Professor Wünsche is definitely committed to promoting the eJHS and further expanding and advancing the publication procedures and policies of our Society.

In closing, Professor Jens Wünsche is confident that he has the enthusiasm, academic credibility, political standing, interpersonal skills, commercial acumen and international linkages to add value in the position as a Board member.

PROF. DR. YÜKSEL TÜZEL, PRESIDENT OF IHC2018



Prof. Yüksel Tüzel was born in 1959 in Izmir, Turkey. She graduated from Ege University in 1981 with a MSc degree and received her PhD in Protected Cultivation in 1989. Between 1983 and 1984 she was employed by the

Ministry of Agriculture, Food and Livestock and then received a position as a research assistant at the Agricultural Faculty of Ege University. She received her associate professorship in 1992 and full professorship in 1998. Since then she has been working at the Horticulture Department of the Agricultural Faculty of Ege University as a full professor. She was a visiting researcher at the International Research Institute in Littlehampton, United Kingdom, in 1988 (April-September) and at Wageningen University and Research Centre, The Netherlands, in 2012 (January-June).

Her expertise is vegetable production technologies in greenhouses. She has worked in soilless culture systems, irrigation and fertilization management, abiotic stress response and grafting. In 2000 she started to work on organic greenhouse vegetable production. Presently, she is involved in a project to increase local input use of organic agriculture, and she is responsible for seedling production, which includes experiments on substrates, nutrition programs, the use of beneficial organisms and grafting.

Prof. Tüzel has lectured on protected cultivation to under and postgraduate students. She has supervised 20 Masters and 4 PhD students and conducted international and national projects.

She is the author of over 195 scientific articles (SCI journals, national refereed journals, international and national symposia, books and chapters). She is the author and co-author of chapters entitled "Cultivation Practices" and "Soilless Culture" in FAO book number 217 "Good Agricultural Practices for Greenhouse Vegetable Crops; Principles for Mediterranean Climate Areas", respectively. She was involved in two regional FAO working groups on Greenhouse Crop Production in the Mediterranean (1997-2003) and South Eastern Europe (2000-2008) and in an FAO Regional TCP project. She coordinated two Regional Workshops (Flowers for the Future in 2002; Soilless Culture Technologies in 2004) and Regional Working Group meetings (1997 and 2008).

She joined ISHS in 1990. She acted as the symposium secretariat of the 2nd ISHS Symposium on Protected Cultivation of Solanacea in Mild Winter Climates (13-16 April, 1993, Adana, Turkey) and has convened three more ISHS Symposia on Greenhouse Management for Better Yield and Quality in Mild Winter Climates (3-5 Nov., 1997, Antalya, Turkey), Sustainable Use of Plant Biodiversity to Promote New Opportunities for Horticultural Production Development (6-9 Nov., 2001, Antalya, Turkey) and Strategies towards Sustainability of Protected Cultivation in Mild Winter Climate (7-11 April, 2008, Antalya, Turkey). She was the co-editor of Acta 366, 491, 598 and 807. She was the chairperson of ISHS Working Group Protected Cultivation in Mild Winter Climates (2000-2004) and vice chair of Commission Protected Cultivation (2006-2010). She has been one of the ISHS Council members for Turkey since 2000.

Prof. Tüzel was Chair of the Turkish Society for Horticultural Science (TSHS) between 2000 and 2003 and acted as Vice-Chair between 2009

and 2012. Turkey began its bid for IHC in 2002 and she was involved in the bidding as the Chair of TSHS. The organization of IHC in Istanbul will provide the opportunity to strengthen the exposure of ISHS in the region.

IR. JOZEF VAN ASSCHE, EXECUTIVE DIRECTOR OF THE ISHS



Jozef Van Assche was born in Leuven, Belgium, in 1960 and received his Master in Horticulture in 1983 at the Faculty of Agriculture of the University of Leuven. His thesis dealt with 'Economical Aspects of In Vitro Culture'.

He continued as a research student at the University of Foreign Studies in Osaka (Japan) and at the University of Tokyo, Faculty of Agriculture, from 1983 till 1985. He then worked for ICI-England 'West Europe and Far East Marketing Department' from 1985 till 1986. Van Assche became the executive manager of a Beverages and Foods Group from 1987 till 1993. In 1993 he returned to the world of science and joined the staff of the ISHS. He was appointed Executive Director in 1995. He is determined to bring horticultural science to the benefit of all, including researchers in the developing world, and together with the ISHS team to serve the horticultural profession as a whole.

Jozef is a keen gardener and enjoys coming home to his wife Mieke and his three adults Kerlijn, Laureen and Andreas.



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Introduction to the Chairs of Sections and Commissions for the Term 2014-2018

SECTIONS

Banana and Plantain	Chair Dr. Stephan Weise (France)
Medicinal and Aromatic Plants	Chair Dr. Bhimanagouda Patil (USA)
Nuts and Mediterranean Climate Fruits	Chair Prof. Tiziano Caruso (Italy) Vice-Chair Prof. Dr. John E. Preece (USA)
Ornamental Plants	Chair Prof. Dr. Margrethe Serek (Germany) Vice-Chair Dr. Margherita Beruto (Italy)
Pome and Stone Fruits	Chair Prof. Ted M. DeJong (USA) Vice-Chair Prof. Luca Corelli-Grappadelli (Italy)
Tropical and Subtropical Fruits	Chair Prof. Dr. Sisir Kumar Mitra (India) Vice-Chair Dr. Hannah Jaenicke (Germany)
Vegetables - Quality Production Systems - Leafy Green and Non-Root Vegetables	Chair Dr. Daniel Leskovar (USA) Vice-Chair Dr. Bernhard Brückner (Germany)
Vegetables - Roots, Tubers, Edible Bulbs, Brassica and Asparagus	Chair Prof. Umezuruike Linus Opara (South Africa) Vice-Chair Prof. Dr. Ferdinando Branca (Italy)
Vine and Berry Fruits	Chair Prof. Dr. Bernadine C. Strik (USA) Vice-Chair Dr. Nick Dokoozlian (USA)

COMMISSIONS

Economics and Management	Chair Dr. Peter J. Batt (Australia) Vice-Chair Prof. Dr. Vera Bitsch (Germany)
Education, Research Training and Consultancy	Chair Dr. Rémi Kahane (France) Vice-Chair Prof. Romaine Ramanarivo (Madagascar)
Fruits and Vegetables and Health	Chair Prof. Julian Heyes (New Zealand)
Horticultural Engineering	Chair Dr. Murat Kacira (USA) Vice-Chair Prof. Dr. Fátima Baptista (Portugal)
Irrigation and Plant Water Relations	Chair Prof. Dr. Manuela Zude (Germany) Vice-Chair Prof. Dr. Esmail Fallahi (USA)
Landscape and Urban Horticulture	Chair Prof. Dr. Giorgio Prosdocimi Gianquinto (Italy) Vice-Chair Dr. Rup Kumar Roy (India)
Molecular Biology and In Vitro Culture	Chair Dr. Maurizio Lambardi (Italy) Vice-Chair Dr. Bart Panis (Belgium)
Organic Horticulture	Chair Dr. Martine Dorais (Canada) Vice-Chair Prof. Dr. Hugo Ramirez (Venezuela)
Plant Genetic Resources	Chair Dr. Damiano Avanzato (Italy) Vice-Chair Dr. Sandhya Gupta (India)
Plant Protection	Chair Dr. David Hunter (Canada) Vice-Chair Prof. Dr. Ana Paula Ramos (Portugal)
Plant Substrates and Soilless Culture	Chair Prof. Dr. Michael Raviv (Israel) Vice-Chair Dr. W.R. Carlile (United Kingdom)
Protected Cultivation	Chair Prof. Stefania De Pascale (Italy) Vice-Chair Prof. Dr. Gordon Rogers (Australia)
Quality and Postharvest Horticulture	Chair Prof. Christopher B. Watkins (USA) Vice-Chair Dr. Sirichai Kanlayanarat (Thailand)

SECTION BANANA AND PLANTAIN



Stephan Weise

Dr. Stephan Weise will continue as Chair of the Section Banana and Plantain.

Dr. Weise, a Canadian/Swiss national, has a PhD in Agricultural Sciences from the Swiss Federal Institute of Technology in Zurich. He started his career in Canada, where he coordinated projects on integrated weed management and farming systems

at the University of Guelph. He spent the next 16 years in Africa leading various initiatives on tropical forest margins at the International Institute of Tropical Agriculture (IITA). Soon after joining IITA as a vegetation management specialist, he was appointed leader of the Humid Forest Programme in Cameroon in 1993.

Prior to joining Bioversity International in 2009, he was the regional manager of the Sustainable Tree Crops Programme, a public-private partnership and innovation platform that seeks to increase, in an environmentally and socially responsible manner, the income of West and Central African farmers growing cocoa, coffee and cashew nuts. Dr. Weise, as the Director of Bioversity's Commodities for Livelihoods Programme, continued to encourage knowledge sharing and a culture of innovation. In 2011 he became the Deputy Director General Research at Bioversity International.

SECTION MEDICINAL AND AROMATIC PLANTS



Bhimanagouda Patil

At the recent ISHS Council meeting in Brisbane Dr. Bhimanagouda Patil was confirmed by Council as new Chair of the Section Medicinal and Aromatic Plants. He succeeds Dr. Ákos Máthé in this position who has successfully led the Section for eight years.

Dr. Bhimu Patil is the Professor and Director of the Vegetable and Fruit Improvement Center. The Center is part of AgriLife Research and Extension of Texas A&M University. He

is a member of the Intercollegiate Faculty of Nutrition and Molecular and Environment Plant Sciences. His research on isolation and characterization of bioactives led to several new limonoids and provided understanding of their biological activities. Additionally, his research is focused on pre and postharvest effects on bioactive compounds in fruits and vegetables. He has published more than 150 scientific papers in peer-reviewed journals. He has edited several reviewed proceedings, book chapters, and a book. Dr. Patil has served as an International Advisory Board Member in nine professional societies. Dr. Patil has secured approximately \$13 million in funding in the form of both competitive and congressionally appropriated grants. He has been actively involved in both research and educational activities related to global level 'Foods for Health'. He has given more than 120 invited presentations in land grant institutions, professional societies, industry, and learned society organizations.

Dr. Patil has received 17 awards, including three awards in 2013: the distinguished award by the American Chemical Society, the outstanding graduate educator award, and the Dean's outstanding achievement award. In 2009, three professional societies (American Chemical Society, American Society for Horticultural Science, Texas AgriLife) recognized Dr. Patil as Fellow, a title bestowed on those who have made exceptional contributions to research and academia. In 2010, he received the AgriLife Vice Chancellor's Research Excellence award. He also received the young scientist award from the American Chemical Society, the outstanding research and teaching award, and the state's highest award, Rajothsava, by the Karnataka Government in 2005. Bhimu Patil and Yves Desjardins co-founded an international symposium on "Human Health Effects of Fruits and Vegetables" (FAVHealth) in 2005, and this biennial international symposium continues to draw premier researchers from almost 40 countries to share the latest findings on enhancing the healthy aspects of fruits and vegetables. He has chaired or co-chaired 25 symposia, including FAVHealth in 2005, 2007 and 2014, and "Potential Citrus Health Benefits" in 2004. He also served as chair of the Division of Agriculture and Food Chemistry of the American Chemical Society and this division celebrated its centennial anniversary during his leadership. He has been interviewed and/or his work has been published in 135 articles and news media including the Associated Press, Reuters, the Wall Street Journal, Fox Health Channel, and CNN. He has been an invited speaker, including keynote speaker, for his scientific research and educational excellence by several countries including China, Australia, New Zealand, South Korea, Brazil, Sweden, France, India, Israel, Spain, Canada, Portugal, and different states in the USA.

He has developed two multi-disciplinary and multi-state first-of-its-kind courses that are being offered at several American universities.

These include "Science of foods for health" and "Phytochemicals in fruits and vegetables to improve human health". Recently, he received another USDA-Challenge grant to develop another unique course: "Food security educational program: the intersection of sustainability, food and nutritional security".

SECTION NUTS AND MEDITERRANEAN CLIMATE FRUITS



Tiziano Caruso

Prof. Tiziano Caruso was confirmed as new Chair of the Section Nuts and Mediterranean Climate Fruits. He succeeds Dr. Damiano Avanzato in this office who has led the Section for eight years. The new Chair will be assisted by an equally new Vice-Chair Prof. Dr. John E. Preece (USA).

Prof. Caruso is full Professor of Horticulture at the University of Palermo, Italy. He graduated from the Faculty of Agricultural Science, University of Palermo. As a faculty member, he has been working on morphological and molecular characterization and ecophysiological evaluation of cultivars and rootstocks of both Mediterranean (pistachio and olive) and temperate zone fruit (peach and cherry) tree species. Currently his research activity is mainly focused on sustainable fruit culture under rain fed conditions and on the development of new orchard design for mechanical pruning, fruit thinning and harvesting of fruit trees.

Within the above mentioned fields, Prof. Caruso has cooperated as a research specialist with the World Laboratory, Geneva (Switzerland) on a project supporting the development of fruit growing in the temperate region of Shandong (China) and has been a scientific consultant for the International Plant Genetic Resource Institute (IPGRI) for a project on "Underutilized Mediterranean Species". For IPGRI he coordinated the West Asia-North Africa (WANA) group for "Individuation, morphologic and molecular characterization of genetic resources of the *Pistacia* genus". Prof. Caruso spent part of his career at the University of Napoli, *Federico II*, where he was responsible for the research unit located in that university for the E.U. project "RESGEN", to collect, characterize and evaluate Mediterranean minor fruit trees (pistachio, carob, pomegranate and fig).

As coordinator of the PhD course "Tree fruit crops and forestry systems", he established an international network of cooperation with several research institutions, giving many PhD students the opportunity to spend 6-12 month internships overseas working under the supervision of colleagues with worldwide scientific reputations.

For six years he has been head of the Department of Tree Fruit Crops, University of Palermo, Italy.

Prof. Caruso has been Convener/member of the scientific committee/invited speaker at several international symposia and is the author/co-author of more than 250 scientific publications that have appeared in national and international journals and conference proceedings, and as book chapters and monographs.

SECTION ORNAMENTAL PLANTS



Margrethe Serek

Prof. Margrethe Serek was recently re-elected as Chair of the Section Ornamental Plants. She will be assisted by the new Vice-Chair, Dr. Margherita Beruto (Italy).

Margrethe Serek is Professor and Chair of Floriculture and Chair of Floriculture at the Institute of Horticultural Production Systems,

Leibniz University of Hannover in Germany. She received her PhD degree in 1991 at the Royal Veterinary and Agricultural University in Copenhagen in Denmark, where she continued her employment as associate professor in postharvest physiology of ornamentals and later as full professor of floriculture. In 2000 she accepted full professorship at University of Hannover in Germany. Until 2007 Margrethe Serek maintained professorships at both universities, in Germany and Denmark, and she successfully established a joint research group, which actively cooperated for many years.

Margrethe Serek has a strong background in physiology, production and handling of floricultural crops. In the past decade she has broadened her research program to include investigation of molecular aspects of floricultural production and marketing. A large part of her ongoing projects focuses on tissue culture techniques, gene manipulation and molecular aspects of ornamentals and is performed in cooperation with, and partly financed by, the growers and breeding companies in Denmark and Germany. A large part of the research has been financed by national grants from the German and Danish governments as well as by other agencies.

More than 100 refereed scientific articles and 60 conference articles have been published by Margrethe Serek in the field of postharvest physiology, genetic manipulation and molecular biology of ornamental crops. Her H-index is at present 27. She is the recipient of four international awards: for the most outstanding research paper (ASHS in USA) and for outstanding scientific work (Rudolf Hermanns Award in Germany, Substral Award in Scandinavia/Denmark, Khwarizmi International Award in Iran).



Margrethe Serek is active in hosting, training and collaborating with PhD, MSc and BSc students and visiting scholars and scientists from around the world. She is head of the examination commission for the 2-year Horticulture MSc International program run at Leibniz University of Hannover.

Margrethe Serek frequently attends international meetings, congresses and symposia, in some of which she is involved as a Convener, member of the scientific committee, or keynote speaker. She is a member of several international and national scientific societies: ISHS, ASHS, DGG (German Horticultural Association), and the European Federation of Biotechnology (EFB).

SECTION POME AND STONE FRUITS



Theodore DeJong

Prof. Theodore DeJong was recently appointed as new Chair of the Section Pome and Stone Fruits. He succeeds Prof. Guglielmo Costa in this position. Dr. DeJong will serve in the office in close collaboration with the equally new Vice-Chair Prof. Luca Corelli-Grappadelli (Italy).

Prof. DeJong has worked as a fruit tree crop physiologist in the Department of Plant Sciences at the University of California, Davis, since 1981. He has a split appointment in teaching, fundamental and application oriented research and extension. He served as chair of the Department of Pomology for eight years (1994-2002) and as vice-chair in the reorganized/consolidated Department of Plant Sciences for three years (2006-2009). His research program has mainly focused on understanding tree physiology and orchard management factors that control the carbon balance/budgets and productivity of fruit and nut trees. He has co-authored more than 250 scientific papers, teaches fundamental pomology courses and has mentored numerous graduate students, post-docs and visiting international scientists. He recently received the title of Distinguished Professor at UC Davis.

Dr. DeJong is a Fellow of the American Society of Horticultural Science and is a member of several ISHS working groups. He has chaired or co-chaired three ISHS working group symposia and also served as Vice-Chair of the Section Pome and Stone Fruits from 2004 to 2010.

SECTION TROPICAL AND SUBTROPICAL FRUITS

Prof. Dr. Sisir Kumar Mitra has been re-elected as Chair of the ISHS Section Tropical and Subtropical Fruits. Good leadership will be



Sisir Kumar Mitra

assured with the involvement of Vice-Chair Dr. Hannah Jaenicke (Germany). Prof. Mitra is a scientist of tropical and subtropical fruits with a doctorate in Pomology. He has spent his scientific career researching tropical and subtropical fruits and is an internationally recognized specialist on litchi, guava and mango. Prof. Mitra worked at the East Malling Research Station, UK, as a post-doctoral fellow and at Università degli Studi delle Tuscia, Italy, as a visiting professor. Prof. Mitra has attended approximately 48 international meetings, congresses and symposia as a member of the international scientific committee, lead speaker or as chair of technical sessions. He has directed research for more than 50 post-graduate students for M.Sc. and Ph.D. degrees and led numerous R&D projects. He is the author of more than 250 scientific and technical papers and author or editor of 12 books. He has also been the Technical Advisor of the International Tropical Fruits Network and Chairman of the ISHS Working Groups on Papaya and on Guava and Other *Myrtaceae*. Prof. Mitra is a Fellow of the Horticulture Society of India and has served as an expert member on different research advisory committees of the National Research Institutes of the Indian Council of Agricultural Research.

Prof. Mitra is currently working as a consultant from India.

SECTION VEGETABLES - QUALITY PRODUCTION SYSTEMS - LEAFY GREEN AND NON-ROOT VEGETABLES



Daniel I. Leskovar

Brückner (Germany).

Dr. Leskovar is a Professor in Vegetable Stress Physiology and Center Director of the Texas A&M AgriLife Research and Extension Center at Uvalde, Texas A&M University. He received his B.S. in Horticulture from the Universidad del Comahue, Argentina, and trained in vegetable crops at the University of Wageningen, The Netherlands. He received his Master of Science

degree in Vegetable Crops from the University of California, Davis, and his Ph.D. in Vegetable Crop Physiology from the University of Florida in 1991.

Dr. Leskovar's background and research interest is in plant morphological and physiological adaptation mechanisms to environmental stresses and in the development of sustainable vegetable cropping systems that include leafy greens, cucurbits, onion, tomato, sweet/hot pepper, and artichoke. More than 120 scientific papers were published by him and his team in the fields of seed-transplant production and physiology to enhance stand establishment; plant hormones to modulate seedling and plant growth; water conservation strategies, deficit irrigation and irrigation technologies; water productivity, yield, antioxidants, and sensory attributes of specialty crops; and GxE interactions for root growth, drought tolerance, water use efficiency, yield and quality.

Dr. Leskovar has been actively involved in ISHS leading roles, including Vice-Chair of Section Vegetables (2010-2014), Chair of the WG Crop Establishment, Seed and Transplant Technology (since 2007) and active member of the WG Artichoke. The strong combined experience and enthusiasm of Drs. Leskovar and Brückner should lead to new scientific exchanges and symposia among members of the Section and affiliated Working Groups.

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Certified Food Scientist, Executive Board member of the International Commission on Agricultural & Biosystems Engineering (CIGR), and Chair of CIGR Section VI (Postharvest Technology & Agro-Processing). He is the Founding Editor-in-Chief of the International Journal of Postharvest Technology & Innovation, Associate Editor of the Journal of South Pacific Agriculture, Regional Editor of Food, Agriculture & Environment, Co-operating Editor of Agricultural Mechanisation in Asia, Africa and Latin America, and former Associate Editor of The CIGR Journal of Scientific Research & Development. Prof. Opara has extensive international experience in agricultural engineering and postharvest technology research and education, technology transfer and capacity building. He has designed and implemented postharvest technology capacity building projects in Africa, Asia, South Pacific and the Middle East for international development agencies such as the World Bank, FAO, New Zealand AID and Australian AID. He was Visiting Technical Expert on Postharvest Technology and Agricultural Engineering Consultant at the United Nations Food and Agriculture Organization, and was a member of the Joint WHO/FAO Expert Consultation on Safety of Green Leafy Vegetables. He is an active member of several professional societies related to agriculture and food, and has published over 200 papers in refereed journals and conference proceedings and as book chapters.

SECTION VINE AND BERRY FRUITS



Prof. Dr. Bernadine Strik of the USA was re-elected as Chair and Dr. Nick Dokoozlian (USA) as Vice-Chair of the Section Vine and Berry Fruits.

Dr. Bernadine Strik is a Professor of Horticulture at Oregon State University (OSU) in Corvallis, Oregon, USA. She has an interna-

tional background having been born in The Netherlands and living in Australia for six years and in Canada for 16 years, where she was raised on an ornamental nursery crop farm. She obtained her Bachelor's degree with honors at the University of Victoria in British Columbia majoring in botany and her Ph.D., with distinction, at the University of Guelph, Ontario, Canada in 1987 where she focused on strawberry physiology. Her graduate studies were funded by a Natural Sciences and Engineering Research Council of Canada Scholarship. Bernadine and her husband, Neil Bell, live on 2 hectares in the country near Monmouth, Oregon with their two children, Shannon and Nicole. Prof. Strik has been at OSU in the USA for 27 years.

Dr. Strik's responsibilities include extension educational programs for the commercial berry crop industries, teaching courses on berry and grape physiology and production and fruit materials to undergraduate and graduate students, advising graduate students, and conducting research programs. Prof. Strik was the Extension Viticulture Specialist at OSU for five years before assuming a 100% berry crops appointment. Her research programs cover all berry crops with a focus on improving yield and quality, machine harvest efficiency, alternative production practices, plant nutrition, season extension or manipulation, and organic production systems. She has advised 22 M.S. or Ph.D. students, has published more than 90 refereed scientific papers on berry crop production and physiology, over 30 articles in *Acta Horticulturae*, 57 extension publications, 10 book chapters and over 100 proceedings articles. Her extension publications and blueberry pruning video are widely distributed worldwide. Prof. Dr. Strik has been invited to give training workshops for industry advisors in various countries, consults internationally on berry crop production systems, and has been invited to give a keynote address at many international meetings.

Prof. Dr. Strik belongs to 8 professional organizations and holds or has held many leadership roles. She was Chair of the *Vaccinium* Working Group of this Section of the ISHS for eight years and co-convoked the 9th International *Vaccinium* Symposium for ISHS in 2008. Prof. Dr. Strik has been a session moderator at two ISHS meetings, was on the Scientific Committee of seven ISHS symposia, once as Chair, and has served as an Associate Editor for *Acta Horticulturae* for four symposia. She is also active in the American Society for Horticultural Science having served on several committees, was an Associate Editor of *HortTechnology*, and co-organized the ASHS meeting at OSU in Corvallis. In 2007, Prof. Dr. Strik was elected a Fellow of the American Society for Horticultural Science, its highest honor. She has also received industry honors and six awards for faculty excellence from Oregon State University including receiving the prestigious OSU Alumni Association Distinguished Professor award.

Prof. Dr. Strik will be assisted by her Vice-Chair, Dr. Nick Dokoozlian who obtained his Ph.D. at the University of California at Davis. Dr. Dokoozlian joined the E&J Gallo Winery in Modesto, California in 2004 where he currently serves as Vice President of Viticulture, Chemistry, and Enology. His primary responsibilities involve research and technical innovation in the areas of grape growing and winemaking. Prior to joining E&J Gallo, Dr. Dokoozlian spent nearly 15 years as an Extension Viticulturist in the Department of Viticulture and Enology at the University of California, Davis. Dr. Dokoozlian is an Associate Editor of the American Journal of Enology and Viticulture and is heavily involved with many industry research activities and organizations.

He is the current Research Chair of the US National Grape and Wine Initiative.

The combined expertise of Drs. Strik and Dokoozlian will continue to provide strengths in berry and grape production and enology, and the academic experience of both, coupled with the industry focus of Dr. Dokoozlian, should continue to provide a strong leadership team.

COMMISSION ECONOMICS AND MANAGEMENT



Peter J. Batt

Dr. Peter J. Batt was confirmed as the new Chair of the Commission Economics and Management. He succeeds Prof. Peter Oppenheim in this position who led the Commission for eight years. Good leadership will be assured with the involvement of Vice-Chair Prof. Dr. Vera

Bitsch (Germany).

Until March 2014, Peter J. Batt was Professor of Food and Agribusiness Marketing at Curtin University in Perth, Western Australia. A graduate of Lincoln College, Peter was first employed as a Horticultural Advisory Officer in cut flower and ornamental crops in Christchurch, New Zealand, before immigrating to Perth as foundation lecturer in Australia's first Bachelor of Agribusiness Horticulture. He obtained his PhD in Agribusiness in 2003 from Curtin University, and has established a global reputation for his research in industrial purchasing behaviour and relationship marketing in agrifood supply chains. For over two decades, Peter has worked with various industry groups in Australia to develop export markets for cut flowers, fresh fruit and vegetables and seed potatoes. However, he is best known for his development work in linking smallholder farmers to institutional markets in Indonesia, the Philippines and Viet Nam. In recognising that numerous others were working in similar areas for a variety of international donors, Peter convened the first international symposium to enhance the performance of supply chains in the transitional economies in Chiang Mai, Thailand, in 2005. He has subsequently organised four other symposia in Viet Nam, Malaysia, The Philippines and most recently, Brisbane, as an integral part of the IHC. Peter regularly consults to the Food and Agriculture Organisation of the United Nations and the World Bank. He is a past state and national President of the Australian Institute of Horticulture and is currently a board member for the International Food and Agribusiness Management Association. Peter is now principal of Peter J. Batt and Associates, an international agribusiness marketing and rural development consulting company.



COMMISSION EDUCATION, RESEARCH TRAINING AND CONSULTANCY



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Rémi Kahane
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The ISHS Council recently confirmed Dr. Rémi Kahane as Chair of the Commission Education, Research Training and Consultancy (CMET). He succeeds Adjunct Associate Professor David Aldous in this position. It is a great sorrow to recall the sudden death of Prof. Aldous who was passionate

about knowledge transmission in all aspects of horticulture. His absence at IHC2014 was deeply felt and he will be missed by Dr. Kahane as he takes over the responsibility of CMET. Dr. Kahane will be assisted by Vice-Chair Prof. Romaine Ramanarivo (Madagascar).

Dr. Kahane is a CIRAD senior scientist, expert in horticulture. He succeeds Dr. Jacky Ganry in keeping a global horticulture approach within CIRAD, now organized into disciplinary research units. As a tool for trans-disciplinarity and transversality within CIRAD and in general in most of the research institutions, he has accepted the duty of Editor in Chief of the scientific journal 'Fruits', very well developed over the years by Dr. Chantal Loison, who recently retired in April 2014. Still on the tracks of Jacky (initiator of PAEPARD, the Platform for Africa-Europe Partnerships in Agricultural Research and Development), Rémi has been recently nominated deputy manager of the EU-funded PAEPARD for the last four years of the program. Capacity building is the main focus of this program.

Rémi is mainly known within the ISHS community for the seven years he has spent as Executive Secretary of the Global Horticulture Initiative (GlobalHort), firstly under the chairmanship of Thomas Lumpkin (past DG of AVRDC-The World Vegetable Center), and then Norman Looney (past ISHS President). GlobalHort is a promoter of horticulture in developing countries and still works to attract new members, new country members, and new candidates for symposia in developing countries. The All Africa Horticulture Congress (AAHC) is a product of this synergy, and its third issue will be held in 2016, in Lagos, Nigeria. Rémi was also Co-Convener of ISHS symposia on urban horticulture (Seoul, 2006), underutilized plants (Arusha, 2008), the 1st AAHC (Nairobi, 2009), and horticulture for development (Lisbon, 2010).

Dr Kahane has been a research manager for the last 12 years with CIRAD, but previously worked for 15 years for a farmers' cooperative based in a national research center (INRA) in Dijon, Burgundy. He developed several breeding tools for onion and *Allium* species (micro-

propagation, bulbing in vitro, haplo-diploidization, somatic embryogenesis) and strongly collaborated in European research projects on onion and garlic. His PhD-thesis was awarded a national prize in 1992.

COMMISSION HORTICULTURAL ENGINEERING



.....
Murat Kacira
.....

Dr. Murat Kacira was recently appointed as new Chair of the Commission Horticultural Engineering. He succeeds Prof. Sadanori Sase who led the Commission for eight years. Dr. Kacira will serve in the position in close collaboration with the equally new Vice-Chair Prof. Dr. Fátima

Baptista (Portugal).

Dr. Kacira is an Associate Professor in the Department of Agricultural and Biosystems Engineering and also a faculty member in the Controlled Environment Agriculture Center program at the University of Arizona, USA. He received his B.S. degree in Agricultural Engineering from Cukurova University in Turkey and his M.Sc. and Ph.D. degrees in Food, Agricultural and Biological Engineering from The Ohio State University in USA. Dr. Kacira worked as a post-doctoral researcher at The Ohio State University and as a visiting scholar in the Laboratory of Controlled Environment Agriculture at the National Institute for Rural Engineering in Tsukuba, Japan. He has been active in teaching and research related to controlled environment agriculture for the past twenty years with working experiences in academia and research institutions in the US, Turkey, and Japan. He has been working at the University of Arizona since 2007, and his research involves greenhouse and plant energy balance studies, computer vision guided autonomous plant health and growth monitoring systems, and modeling and simulation for analysis of greenhouse aerodynamics. He also teaches both undergraduate and graduate level engineering courses at the University of Arizona.

Dr. Kacira has been the author and co-author of many scientific and technical papers dealing with greenhouse climate control, aerodynamics analysis of greenhouse systems, and automated crop diagnostics via computer vision guided systems in controlled environments. He is actively involved with ISHS where he has been Vice-Chair of the Commission Horticultural Engineering for the past four years, and Co-founder, Secretary and Chair of the Computational Fluid Dynamics Working Group. He co-convoked an ISHS symposium, served as a scientific committee member for a

number of GreenSys symposia, and had papers published in a number of ISHS publications.

COMMISSION FRUITS AND VEGETABLES AND HEALTH



.....
Julian Heyes
.....

Prof. Julian Heyes has been confirmed as the new Chair of the Commission Fruits and Vegetables and Health. He succeeds Prof. Olaf van Kooten in this position.

Julian is professor of Postharvest Technology at Massey University, New Zealand and Director of the Centre

for Postharvest and Refrigeration Research. He leads a large team of postharvest scientists and graduate students working to optimise fruit, vegetable and cut flower quality through the supply chain. One increasingly important aspect of product quality is the potential for fresh fruit and vegetables to contribute to human health, and this has become Prof. Heyes' preferred research area in recent years. He works in the Institute of Food, Nutrition and Human Health, which is located within the College of Health at Massey University, so has ready access to collaborators spanning diverse fields of human nutrition and physiology. Recent PhD research projects include health benefits from blueberries (against metabolic syndrome and breast cancer), broccoli (for gut health), potatoes (against breast cancer), feijoas (against cancer) and sweet potatoes (for anti-inflammatory activity and eye health).

Julian has been a manager and reviewer of large, multidisciplinary, inter-organisation research programmes for many years, most notably administering the 'Nutrigenomics' programme from 2004-2008, co-leading the 'Future Vegetables' programme from 2007 and leading the successful rebid of the 'Vital Vegetables' programme in 2008. These multi-million dollar programmes were predicated on the presumption that food exports from New Zealand must be niche, high-value, knowledge-embedded products. New Zealand cannot be a low-cost producer and must compete on the basis of high quality that meets consumer demands.

Julian is a life member and former President of the NZ Society of Plant Biologists and a Fellow and council member of the New Zealand Institute for Agricultural and Horticultural Sciences. He obtained his D. Phil. from the University of Oxford, where he was a Rhodes Scholar. Julian also has a postgraduate diploma in Global Development Studies and has put this into practice as a science placement advisor for Volunteer Services Abroad and a member of the New Zealand Ministry of Foreign Affairs and Trade's 'Agricultural Services' Panel responsible

for reviewing its international agricultural aid work.

From 2002 Julian was on the bidding and organising committee for the 2014 International Horticultural Congress held in Brisbane. He has been one of the New Zealand ISHS Council members since 2008 and was co-chair of the 2014 ISHS Symposium on 'Postharvest Technology for the Future'.

COMMISSION IRRIGATION AND PLANT WATER RELATIONS



Manuela Zude

Prof. Dr. Manuela Zude was recently confirmed by the ISHS Council as new Chair of the Commission Irrigation and Plant Water Relations. She succeeds Dr. Richard L. Snyder in this office. The new Chair will be assisted by Vice-Chair Prof. Dr. Esmail Fallahi (USA).

Manuela has a Master's

degree in chemistry and horticulture (1996, Technical University Berlin), a PhD in fruit physiology (1999, Technical University Berlin), and a habilitation in applied plant physiology (2004, Humboldt University Berlin). She worked in postdoctoral positions at Leibniz Institute for Agricultural Engineering Bornim (2000-2002, ATB), Citrus Research and Education Centre (2001), and INRA-Versailles (2003). At present, she is professor at the Beuth University of Applied Sciences Berlin (since 2009), while at ATB (since 2004) she is working as a group leader targeting questions of precision fructiculture. Prof. Dr. Zude's areas of research are (i) physical properties of fresh fruit, (ii) in situ measurements in orchards by means of automated sensors, and (iii) precision fructiculture (flower thinning, harvest management, and irrigation in woody plants). One recent project targeted precise irrigation of fruit trees (www2.atb-potsdam.de/3d-mosaic).

Manuela is Vice President of the German Society of Horticultural Science (DGG), Board Member of the journals "Food and Bioprocess Technology" and "Biosystems Engineering", and Vice-Chair of the International Commission of Agricultural and Biosystems Engineering (CIGR) Working Group "Image Processing".

With the activities of CMIR, we approach supporting advanced irrigation management based on plant data, but are keen to discuss all other irrigation aspects as well.

COMMISSION LANDSCAPE AND URBAN HORTICULTURE

At the recent ISHS Council meeting in Brisbane Prof. Giorgio Prosdocimi Gianquinto was con-



Giorgio Prosdocimi Gianquinto

firmed as new Chair of the Commission Landscape and Urban Horticulture. He succeeds Prof. Gert Groening who led the Commission for eight years. The new Chair will be assisted by an equally new Vice-Chair Dr. Rup Kumar Roy (India). Prof. Gianquinto graduated in Agriculture Science from the Faculty of Agriculture of University of Padova in 1983, where he worked until 1992 as a researcher. From 1992 to 1995 he was employed as associate professor of horticulture at the University of Udine and later he moved to the University of Padova where he held the same position. In 2006 he became full professor of horticulture at the Department of Agricultural Sciences of Alma Mater Studiorum - University of Bologna. Since 2011, Giorgio Prosdocimi Gianquinto has been the coordinator of the Master in "Agricultural Sciences and Technologies" at the University of Bologna and since 2013 he has headed the Research Center in Urban Environment for Agriculture and Biodiversity (ResCUE-AB). ResCUE-AB aims at turning the city into a diffuse eco-laboratory, where research activities may take place, linking together the different experiences of urban horticulture and ecology, toward the global aim of creating networks of green corridors across the city. Within this framework, his research deals with social and sustainable urban horticulture; low-, medium- and high-tech cropping systems for the urban environment (including soilless systems); urban biodiversity and agroecology; physiology and quality of urban vegetable crops; and the therapeutic role of horticulture. He convened the 2nd ISHS International Conference on Landscape and Urban Horticulture held in Bologna in June 2009. Giorgio Prosdocimi Gianquinto is a member of national and international scientific societies (SOI, ISHS) and has been a former Vice-Chair of ISHS Commission Landscape and Urban Horticulture.

During the last decade he has coordinated several research projects and is author of many technical and scientific papers and book chapters in Italian and in English. He has been involved in several international cooperation projects with a number of NGOs and with FAO-UN in the fields of urban horticulture with a focus on food security for people living in the poorest neighborhoods of some cities of Latin America, Africa and Asia.

COMMISSION MOLECULAR BIOLOGY AND IN VITRO CULTURE

At the recent ISHS Executive Committee and Council meeting in Brisbane, Dr. Maurizio

Lambardi (Italy) was re-confirmed as Chair of the ISHS Commission Molecular Biology and In Vitro Culture. Dr. Lambardi will serve in the position in close collaboration with the re-appointed Vice-Chair, Dr. Bart Panis (Belgium).

Dr. Lambardi is Senior Researcher of the National Research Council (CNR) of Italy and project leader on propagation and conservation of woody plants at the IVALSA (Trees and Timber Institute) of Florence.

He is presently the Chairman of the Society for Low Temperature Biology, a member of the Executive Committee of the Italian Society for Horticultural Science (SOI) and Coordinator of the Italian Working Group on "Micropropagation and in vitro techniques". He is also Corresponding Academic of the Italian 'Accademia dei Georgofili'. Dr. Lambardi has wide-ranging expertise in plant biotechnology and in vitro culture systems. His research activity is mainly focused on the development of innovative in vitro approaches to plant propagation and conservation, such as micropropagation, slow growth storage, cryopreservation and cryotherapy. In these fields, he has been in charge of national and international projects, as well as supervisor of Italian and foreign Master degree, PhD and Post-Doc students. Dr. Lambardi has been an invited speaker at many national and international congresses and post-degree courses, and is author or co-author of more than 150 scientific papers, reviews, book chapters and technical reports on plant tissue culture, micropropagation, in vitro conservation and cryopreservation. He is presently a member of the Editorial Board of the ISI Journals 'Acta Physiologiae Plantarum', 'CryoLetters', 'Notulae Botanicae Horti Agrobotanici' and 'Propagation of Ornamental Plants', as well as reviewer for various other international journals in the field of plant tissue culture and biotechnology.



Maurizio Lambardi

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COMMISSION ORGANIC HORTICULTURE



Martine Dorais

Dr. Martine Dorais was recently appointed as new Chair of the Commission Organic Horticulture (previously Commission Sustainability through Integrated and Organic Horticulture). She succeeds Dr. Robert Prange who led the Commission for eight years. Dr.



Dorais will serve in the position in close collaboration with the equally new Vice-Chair Prof. Dr. Hugo Ramirez (Venezuela).

Dr. Dorais has been a researcher at Agriculture and Agri-Food Canada and adjunct professor at Laval University (Québec, Canada) since 1996. She has vast research experience in the field of sustainable protected crops with more than 15 years dedicated to the development of organic growing systems for horticultural species (greenhouse vegetables and ornamentals, small fruits, ginseng, medicinal plants). She has acted as Co-Convener for two ISHS symposia (Artificial Lighting, GreenSys2009), edited four *Acta Horticulturae* proceedings, participated in numerous ISHS scientific committees, and has been the Chair of the ISHS Working Group on Organic Greenhouse Horticulture since 2013. She was the principal investigator for the protected crop research activities of the Canadian Science Cluster on Organic Production coordinated by the Organic Agriculture Centre of Canada (Dalhousie University) and she is a member of the Biogreenhouse EU-Cost Action (FA1105). Dr. Dorais has also established research collaborations with several countries, including Sweden, Spain, The Netherlands and Germany.

Dr. Dorais was the recipient of an honorary doctorate (*honoris causa*) awarded in 2013 by the Swedish University of Agricultural Sciences, highlighting her achievements in the field of sustainable production of fruits and vegetables, with a particular emphasis on organic production, product quality and environmental assessment of different production systems. Her holistic vision of horticultural agroecosystems and integration of industrial, governmental and academic research have established a continuum between all stakeholders and promoted the transfer of new knowledge and innovations in the industry to increase its competitiveness and profitability. During her career, she has had the privilege to host two visiting scientists and four postdoctoral researchers, and has supervised or co-supervised 16 Ph.D., 29 M.Sc. and over 33 B.Sc. students in plant science. She has significantly contributed to the advancement of science in the field of horticulture with the publication of 98 scientific peer-reviewed papers, 13 book chapters and reviews, 207 scientific communications with peer-review abstracts, including 37 lectures as a guest speaker and 54 communications on technology transfer.

COMMISSION PLANT GENETIC RESOURCES

Dr. Damiano Avanzato has been elected Chair of the ISHS Commission Plant Genetic Resources. He succeeds Dr. Hannah Jaenicke. Dr. Sandhya Gupta (India) was elected to the position of Vice-Chair.

Dr. Avanzato is a horticultural engineer and former researcher at the Horticultural Institute of Rome, where he spent 35 years working



Damiano Avanzato

on fruit propagation and restoring and evaluating plant genetic resources. During his career he has published over 150 papers and attended over 100 scientific meetings. Significant achievements of his research are the setup of a walnut grafting method with hot callusing cable and the in vivo grafting conditions of ex vitro scion and rootstock material, a grafting method that was awarded by the Italian Minister of Agriculture. He served the ISHS as Chair of the Section Nuts and Mediterranean Climate Fruits from 2006 to 2014 and during his mandate he promoted several new symposia and published five *Scripta Horticulturae* books devoted to almond, pistachio, chestnut, olive and walnut. As an international consultant he has cooperated with FAO, USAID, IFAD, private organizations and universities. He has been involved in the development and supervision of several projects on fruit rehabilitation and propagation in former communist countries, as well as in Asia, the Middle East and South America.

COMMISSION PLANT PROTECTION



David M. Hunter

The ISHS Council recently confirmed Dr. David M. Hunter as Chair and Prof. Dr. Ana Paula Ramos (Portugal) as Vice-Chair of the Commission Plant Protection. The new Chair succeeds Dr. Chris Hale who led the Commission for eight years.

Dr. Hunter was a Research Scientist in Tree Fruit Breeding with Agriculture and Agri-Food Canada (AAFC), retiring in 2013. Born and raised in England, he received his B.Sc. in Agriculture from the University of Nottingham. Following his relocation to Canada, he subsequently received his M.Sc. in Plant Physiology from Brock University and Ph.D in Horticulture and Plant Physiology from the University of Guelph.

Dr. Hunter had over 15 years of experience in viticultural research in government, industry and university settings, prior to assuming responsibility in 1988 for AAFC's pear breeding program. As fire blight (caused by *Erwinia amylovora*) is the major disease constraint to increased pear production in Ontario as well as a major concern in other pear producing areas, the development of fire blight-resistant pear selections and cultivars, through an integration of traditional breeding and biotechnology, is the

long-term objective for a sustainable alternative to chemical dependency for the control of this serious bacterial disease. Orchard management practices also have potential for reducing the impact of this disease on fire blight-susceptible cultivars, while the introduction of new cultivars (with or without increased fire blight resistance) necessitates an evaluation of orchard management practices, including rootstocks and pruning/training systems, in order to optimize production.

Dr. Hunter has introduced four pear cultivars and obtained Canadian Plant Breeder's Rights for three other selections. All these introductions and selections have improved levels of field resistance to fire blight, and one selection also combines excellent field resistance to pear psylla (*Cacopsylla pyricola*) with fire blight resistance. Several selections and introductions have also been protected and commercialized in the European Union. In 2010, Dr. Hunter's research group published the first report of pear decline (*Candidatus 'Phytoplasma pyri'*) in Ontario. In addition, Dr. Hunter assisted in the introduction of three cold-hardy apricot cultivars with good resistance to bacterial spot (caused by *Xanthomonas pruni*). He also worked in orchard management research for pears and peaches, most recently in the management of plum pox virus (PPV) infected peach trees.

Since 2001, Dr. Hunter has been associated with the University of Guelph (Department of Plant Agriculture), with Adjunct and Graduate Faculty status. He has been on advisory committees of M.Sc. and Ph.D students, including several international students. Thesis topics have included resistance gene analogs for fire blight and apple scab (*Venturia inaequalis*), and seasonal colonization and gene expression by pear decline phytoplasma.

Dr. Hunter has been active in scientific societies, including the International Society for Horticultural Science (Co-Convener of the 7th International Workshop on Fire Blight), the American Society for Horticultural Science (past-Chair of the Fruit Breeding Working Group), and the American Pomological Society (President 2001).

COMMISSION PLANT SUBSTRATES AND SOILLESS CULTURE



Michael Raviv

The ISHS Council meeting at IHC2014, Brisbane, confirmed the appointment of Prof. Michael Raviv as Chair of the Commission Plant Substrates and Soilless Culture. He follows Dr. Bill Carlile who did outstanding work in this position and who will continue as Vice-Chair

of the Commission. Currently Michael Raviv and Bill Carlile have responsibility for overseeing the activities of five working groups: Aquaponics, Composting for Horticultural Applications, Growing Media, Hydroponics, and Substrate Analysis.

Michael Raviv completed all his academic studies at the Hebrew University of Jerusalem, Faculty of Agriculture, Rehovot, Israel. He received a B.Sc. *cum laude* in Agriculture in 1973; obtained an M.Sc. *cum laude* in Horticulture and Soil Science in 1975 and his Ph.D. in Plant Physiology in 1981. Michael spent four sabbatical years: one at Cornell University, one at Minnesota State University, St. Paul, USA and two at UC Davis, USA. Since 1979 Michael has been affiliated with the Agricultural Research Organization (ARO) and is located at the Neve Ya'ar Research Center in Israel. There he heads a research group dealing with environmental horticulture. In 1995 he started teaching a course called "Scientific Issues in Organic Agriculture" at the Hebrew University of Jerusalem, Faculty of Agriculture, Rehovot. Over the years Michael has supervised seven M.Sc. and five Ph.D. students. Michael has taken part in numerous research projects, both national and international, dealing with plant production in growing media, and optimization of the composting process and compost use, especially as a tool to suppress soil-borne diseases. Recently, Michael has also been involved in projects aiming at improving soil fertility and health under conditions of organic farming.

Michael has published extensively on both soil-less culture and composting. He has published over 190 papers in scientific and professional journals. Together with Prof. J.H. Lieth of UC Davis he initiated and edited the book "Soilless Culture: Theory and Practice", published by Elsevier in 2008.

Michael joined the ISHS in 1981. In 1991 he convened the 2nd ISHS International Symposium on Propagation of Ornamental Plants, held in Israel. Since then he has taken part in the organization of seven ISHS symposia. Between 1997 and 2006 he served as the Vice-Chair of the Working Group PS2 Composting of Organic Matter (now called Composting for Horticultural Applications) and from 2006 he served as its Chair. In 2010 Michael was elected Vice-Chair of the Commission Plant Substrates and Soilless Culture.

Together with the Vice-Chair and Chairs of the Working Groups Michael will do his utmost to enhance and improve knowledge exchange in the fields of hydroponics, growing media and composting within the ISHS and in collaboration with sister scientific societies.

COMMISSION PROTECTED CULTIVATION

Prof. Stefania De Pascale has been confirmed as the new Chair of the ISHS Section Protected



Stefania De Pascale

Cultivation. She succeeds Dr. Nicolas Castilla who led the Commission for eight years. Prof. De Pascale will serve in the position in close collaboration with the equally new Vice-Chair Prof. Dr. Gordon Rogers (Australia). Prof. De Pascale graduated (BSc & MSc) in Agricultural Sciences from the University of Naples (Italy) and in Landscape Architecture (MSc) from the Polytechnic University of Turin (Italy). She is full Professor of Horticulture and Floriculture at the University of Naples Federico II. She teaches in courses on crop physiology, greenhouse horticulture and landscaping and supervises BSc, MSc and PhD students. She has taught short intensive courses on greenhouse horticulture and crop physiology in different countries. Her research interests are focused on abiotic stress adaptation in plants, water and nutrient management of horticultural crops in field and greenhouse production, organic horticulture and postharvest physiology. Her recent research activities have concerned the functional biology of water and salt stress adaptation in plants, the influence of pre- and postharvest conditions on nutritional composition of vegetables, the sustainability of protected cultivation and the setup of a Bioregenerative Life Support System based on the use of higher plants for food and oxygen production, CO₂ regeneration and water purification. In these research fields, she has coordinated several research projects and is author of many technical and scientific papers (more than 200) and book chapters in Italian and in English.

Prof. Stefania De Pascale was Convener of the Greensys2007 ISHS International Conference on High Technology for Greenhouse System Management and of the ISHS International Symposium on New Technologies in Protected Cultivation that was held in Brisbane, Australia, in 2014 during the International Horticulture Congress. She has also taken part in many ISHS international symposia as an invited speaker (e.g. Greensys2004 - International Conference on Sustainable Greenhouse Systems, September 12-16, 2004, Leuven, Belgium; International Workshop on Greenhouse Environmental Control and Crop Production in Semi-Arid Regions, October 20-24, 2008, Tucson, Arizona, USA; International Symposium on Strategies Toward Sustainability of Protected Cultivation in Mild Winter Climate, April 6-11, 2008, Antalya, Turkey; Greensys2009 - International Symposium on High Technology for Greenhouse Systems, June 14-19, 2009, Quebec City, Quebec, Canada; Greensys2011 - International Symposium on Advanced Technologies and Management towards Sustainable Greenhouse Ecosystems, June 5-10, 2011, Halkidiki, Greece).

Prof. Stefania De Pascale was Chair of the thematic group "Technologies, Material and Microgravity" of the Italian Space Agency (ASI) and was Chair of the Floriculture and Ornamental Plants Section of the Italian Society for Horticultural Science (SOI). She is a member of the Management Committee of COST Action FA0901: Putting Halophytes to Work - From Genes to Ecosystems. She acts as a consultant for the FAO working group Plant Production and Protection Division (AGP) and for the National Center for Agricultural Research and Extension (NCARE). She is a reviewer and co-editor for Italian and international journals. She also acts as a referee, an external expert or a consultant for the Italian Ministry of University and Research, the Italian Ministry of Agriculture and Forestry and the EU.

Since July 2013 Prof. Stefania De Pascale has been Chair of the Italian Society for Horticultural Science.

COMMISSION QUALITY AND POSTHARVEST HORTICULTURE



Chris Watkins

The ISHS Council meeting in Brisbane confirmed the appointment of Prof. Chris Watkins as Chair of the Commission Quality and Postharvest Horticulture. He follows Dr. Sirichai Kanlayanarat (Thailand) who will continue as Vice-Chair of the Commission.

Chris Watkins is the Herman M. Cohn

Professor in the Horticulture Section of the newly formed School of Integrative Plant Sciences at Cornell University, Ithaca, New York in the USA. He is also the Director of Cornell Cooperative Extension, an extension system that extends throughout New York State as well as the University, and Associate Dean in the College of Agriculture and Life Sciences, and the College of Human Ecology. Prior to taking an appointment at Cornell University in 1994, Chris worked in the Department of Scientific and Industrial Research (DSIR) and HortResearch, now known as the Plant and Food Research Institute of New Zealand. He completed his BSs and MSc (1st class Hons) at the University of Auckland, New Zealand, and his PhD at Rutgers - The State University of New Jersey.

Chris Watkins' research program is focused on maturity, storage and ripening of horticultural products from both applied and fundamental aspects. Although most of his research is apple-oriented, he has worked on a variety of fruits and vegetables. A primary area is the development of knowledge required for use of 1-methylcyclopropene (1-MCP), a new ethylene-binding inhibitor that extends the storage



life of horticultural products. This work is now being extended to preharvest 1-MCP applications. He studies the underlying mechanisms in fruit responses to storage conditions such as temperature, atmosphere, and 1-MCP, and the interaction of these factors on quality and product losses. In addition to extensive national experience, Chris Watkins has been involved in international projects in Serbia, China, Benin and Malawi. He has been an invited speaker at national and international meetings.

Chris Watkins and his colleagues have published 143 refereed papers, 44 conference proceeding papers, 14 book chapters and 111 grower, newsletter and technical bulletin articles. He has mentored 18 MS and PhD students.

Honors and awards given to Chris Watkins include a Winston Churchill Memorial Trust Fellowship, recipient of Trimble Agricultural Research Travel Fund, American Society for Horticultural Science (ASHS) Outstanding Extension Educator Award, and the Crystal

Apple - Award of the Director of the Szczepan Pieniasek Research Institute of Pomology and Floriculture, Skierniewice, Poland. He has been a member of ISHS since 1988, and he is also active in the ASHS, which he joined in 1981. Editorial responsibilities have included terms as Associate Editor of HortScience, and of Postharvest Biology and Technology.



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ejhs

**January 2015:
ISHS-DGG Partnership for
European Journal of Horticulture Science (eJHS)**

eJHS will provide a new and fresh alternative to ISHS members and all others wishing to publish their research in a high profile international horticultural journal with rising impact. We warmly invite your article submissions to the online, open access eJHS. Prices are 300 Euro article processing charge upon submission + 700 Euro article publishing charge after peer review and acceptance for publication. ISHS members benefit from a discount of 25%. Print subscriptions of eJHS are available for 2015.

Check out www.ishs.org/ejhs for more details.



ISHS Awards Bestowed

At its recent meeting in Brisbane the ISHS Council decided to bestow the ISHS Fellow Award to nine ISHS members and honored six members of the Society with Honorary Membership. According to the Society's Rules of Procedure, the ISHS Fellow Award is presented to a person who is a member of ISHS, in recognition of this person's outstanding contribution to horticultural science worldwide, while Honorary Membership is given to a person who is a member of the ISHS, in recognition of his/her exceptional service to the Society.

After receiving nominations from individual members, the Nominations and Awards Committee made selections which they forwarded with a motivated recommendation to the ISHS Council for final decision.

For the first time in the Society's history the Council also decided to bestow the ISHS International Horticulture Innovation Award. This award is the highest recognition granted by ISHS Council to a person or institution for exceptional contribution to horticulture innovation. This award is especially addressed to those with innovative ideas to create new products and services that are seen as important landmarks in the progress of horticulture at an international level.

ISHS FELLOWS

Prof. Dr. Shuichi Iwahori (Japan)



Professor Iwahori has made relevant worldwide contributions on the use of bioregulators to control physiological processes of various fruits and vegetables and has extensively contributed to the development of the Japanese

and Asian horticultural sectors.

He has played a very important role in horticultural sciences as a researcher and an educator and has published more than 80 papers, 10 reviews, 20 technical papers, and 10 book chapters and has edited 2 books. His scientific interest is the physiology of growth and developmental processes in a diversity of fruit and vegetables as influenced by plant growth regulators.

Prof. Iwahori was President of the Japanese Society for Horticultural Science in 1998 and Editor-in-Chief of the Japanese Journal for Tropical Agriculture. In all these roles he has provided invaluable service and contributions to the ISHS, to horticulture and horticultural science in Japan and internationally.

Prof. Dr. Errol Hewett (New Zealand)



Professor Hewett is an internationally recognized scientist in the field of postharvest horticulture, who has published numerous highly-cited papers in reference journals. His work is outstanding, not only

because of the large number of publications, but also because he delivers knowledge that has practical value and impact. Throughout his successful career, Dr. Hewett has demonstrated the ability to ask relevant questions, develop the necessary experiments, and finally publish the information in prestigious journals and present seminars for different audiences. Even more importantly, he makes research in horticulture an enjoyable experience that results not only in personal benefit but also in benefit to mankind.

Prof. Dr. Robert E. Paull (USA)



Professor Paull has been referred to as "a renaissance scientist and researcher with a truly cosmopolitan grasp of tropical agricultural issues." He is an international authority in tropical crops and postharvest physiology. His scholarship encompasses

the fundamentals of ripening and the development of applied technologies to promote and prolong the quality of horticultural products. His research has garnered more than \$5 million in grants and yielded more than 200 publications, including 118 peer-reviewed journal articles. He has made 115 conference presentations, 21 U.S. Department of Agriculture commodity sheets, contributed 18 chapters in books and 7 authored or edited books. Dr. Paull has a deep knowledge of edible tropical plants and co-edited *The Encyclopedia of Fruits and Nuts* (CABI, 2008). He has co-authored 110 encyclopedia entries with colleagues worldwide. He is a noted expert in pineapple and papaya and has advised more than 20 companies on postharvest handling of fruits, vegetables, and ornamentals.

Prof. Dr. Adel A. Kader (USA)



Professor Adel Kader was one of the most highly respected scientists in the field of postharvest biology and technology. During his long and outstanding career, he and his students made an immeasurable contribution to not only the postharvest science of fruit and vegetables, but also to horticultural science in general. His published output includes more than 200 refereed papers, conference proceedings, chapters of books and reviews in a wide range of international journals. It is not only his academic achievements that are notable, but also his ability to engage with horticultural scientists of all ages, cultures and levels of experience.

He has left us but his memory will remain among fellow horticultural scientists.

Dr. William B. McGlasson (Australia)



Dr. William McGlasson is an internationally recognized plant scientist who has made significant contributions to scientific knowledge during his 50 year career. During his long and prestigious career in postharvest physiology of fresh fruit and vegetables he has

worked at many of the world's leading research facilities and developed a number of ground breaking discoveries. His focus on the role of ethylene in the genetic control of fruit ripening has been the foundation of our understanding and management of fruit ripening. Dr. McGlasson has published 95 papers in international journals and was co-author of a classic paper in *Nature* in 1972, in which propylene was first used to distinguish between climacteric and non-climacteric fruit. Overall, based on the high relevance of his publications, the superior quality of his teaching and research contributions, his active involvement in professional societies, including ISHS, and his involvement in the extension of science-based information to the industry, Dr. McGlasson deserves the highest recognition.

Dr. Krisan Lal Chadha (India)

Dr. Krisan Chadha has demonstrated outstanding ability and provided stewardship to Horticultural Renaissance in India. He led national horticulture research as DDG (H) in the Indian Council





of Agriculture Research, and the national development programme as Horticulture Commissioner to the Govt. of India. Currently, he is Adjunct Professor in the Indian Agriculture Research Institute, New Delhi.

During the last five decades, Dr. Chadha has provided dynamic leadership to horticultural research, education, manpower planning and infrastructure development in the country. This has laid the foundation for a horticultural revolution in India. He shouldered the responsibility of drafting national horticulture development five-year plans of the Planning Commission of the Govt. of India during the VIII, XI and XII Plan.

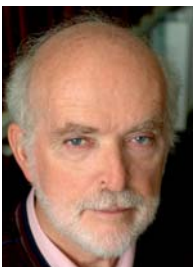
A prolific science writer, he has made monumental contributions to horticultural literature and has authored/edited 35 books/bulletins. One of his most important compilations is 'Advances in Horticulture' in 13 volumes (9,410 pages).

His international assignments involved more than 35 countries. He has been a member and Vice-Chairman of the Board of Trustees, International Potato Centre, Lima, Peru for 7 and 3 years, respectively. He has been the FAO, World Bank, IPGRI and USAID consultant on Fruit Production, Genetic Resources and Mango Production in nine countries of South East Asia and the Middle East.

Dr. Chadha has been honoured with a Doctor of Science (*Honoris Causa*) by three Agricultural Universities of India, in Uttar Pradesh, Bihar and Odisha. He received the Agriculture Leadership Award and three Awards for Life Time Achievement in horticulture.

Most importantly, through his service to the tropical and subtropical horticulture sector, Dr. Chadha has contributed to improving the health and prosperity of millions of people.

Dr. Allan Ross Ferguson (New Zealand)



Dr. Ross Ferguson produced outstanding contributions to kiwifruit research and has been at the cutting edge of the science behind the remarkable development of the New Zealand kiwifruit industry. He is recognized internationally as the leading expert on kiwifruit biology.

He has published nearly 150 papers, from peer-reviewed science in international journals to popular advice for horticulturists. His most important contribution to science, a series of major reviews, including the first-ever compre-

hensive review of the botany of kiwifruit, has been considered by J. Janick a classic in the field. The impact of Dr. Ferguson's work has naturally been immense within New Zealand. However, his recognition as a leader in kiwifruit science has been acknowledged worldwide, and his influence and reputation is also strong in other major countries where kiwifruit is grown, such as China and Italy.

Dr. Ian Brookman Ferguson (New Zealand)



Dr. Ian Ferguson is an outstanding plant and postharvest scientist who has made high quality and significant contributions to understanding physiological and metabolic factors that influence fruit quality. His research has impacted many crops

and his wide knowledge and experience has been disseminated through publications and invited keynote addresses at international meetings. His publication record is outstanding and he has been in demand as an invited speaker at many international symposia and conferences. He has published widely in international peer reviewed journals (109 papers, including 3 major reviews in Horticultural Reviews, reviewed 25 conference proceedings, three book chapters, 14 technical/popular articles and 29 industry reports). In addition he has been Joint Editor-in-Chief of the leading international journal Postharvest Biology and Technology since 1997 and has seen the importance and popularity of this journal increase steadily since that time. He is currently stepping down from that position. He has also played a major role in developing postharvest science in China through more than 15 years of collaboration with Zhejiang University in Hangzhou, for which he was recently awarded a national friendship Award by the Chinese Government. He has similar long-term postharvest collaborations with Kasetsart University in Thailand. Dr. Ferguson was for 10 years Chief Scientist for Plant & Food Research in New Zealand, and is currently Science Advisor to the New Zealand Ministry of Primary Industries.

Professor Dr. Luis Rallo (Spain)



Dr. Luis Rallo is a distinguished scientist who has made enormous progress in transforming traditional olive growing into a modern machine-harvest crop with enormous increases in productivity based on new genotypes, close spacing and machine adaptability. His research is having a profound effect

on olive cultivation worldwide. Dr. Rallo is a leader in olive science and the "founding father" of the most important research group worldwide in olive genetic resources and breeding. He also promoted an International Masters Course in Olive Science that trained hundreds of students worldwide in olive growing, breeding and quality improvement. He has published widely (70 articles, 19 books and 33 book chapters) and trained many students (23 PhD and 9 Ms) and has been a driving force for Spanish Horticulture and a strong supporter and advocate for the ISHS.

ISHS HONORARY MEMBERS

Dr. Norman Looney (Canada)



Dr. Looney's extraordinary contributions to ISHS are widely known. He participated in all activities of the ISHS for over 40 years and has served the Society in a number of different capacities since 1988. This service history includes, among others, the following roles:

President, two terms (2002-2010); Congress President, IHC Toronto, 2002; Council member for Canada (1992-1998); Chair of the Section Fruits (1996-2000). Further, he has convened three ISHS symposia and edited or jointly edited three *Acta Horticulturae* issues. He also championed the ISHS involvement in the development agenda as Board member and later as President of the Global Horticulture Initiative (2004-2013).

Prof. Dr. Ian Warrington (New Zealand)



The dedication and outstanding contribution of Professor Ian Warrington to the ISHS are well known. He has been a member of the ISHS since 1974 and has represented New Zealand on the ISHS Council from 1990 to 2002. In

2002 he was elected to the Board of the Society and held office for 8 years. From 2010-2014 he was an *ex-officio* Board member in his role as co-Chairman of IHC 2014. Over the years he has been an extremely active member of the Society, assisting in organizing symposia in New Zealand and attending symposia internationally.

He organized the meetings of the Executive Committee and Council of the Society in New Zealand in 1997. As Vice President of the ISHS, from 2002-2010, he was responsible for the oversight of all scientific activities of the Society, which he did very efficiently and with positive results on the number and quality of symposia.

Dr. Anthony Webster (UK)



Dr. Webster has actively participated in the activities of the ISHS for at least the past 40 years and has served the ISHS in a number of different capacities since the early 1990s. That service includes being a member of the Executive Committee, initially as Vice-Chair and then as Chair of the Section Fruits for more than two full terms. During that period he provided great leadership to the Fruits Section and fostered the development of numerous symposia. He has been the editor/joint editor of 12 volumes of *Acta Horticulturae*, the Co-Convener of 2 ISHS symposia and a frequent presenter of keynotes at ISHS symposia and congresses. Dr. Webster's service to the ISHS can be typified by unstinting commitment to the overall scientific program of the Society, prodigious editing work, professionalism and wisdom in finding solutions to even complicated matters.

Prof. Dr. Geoffrey R. Dixon (UK)



Professor Dixon has participated in activities of the ISHS since 1976 and has served the ISHS in a number of different capacities since 1987. That service includes the following roles: internal auditor, Council representative for the UK, Chair of the Commission Education, Research Training and Consultancy for two consecutive terms, member of the Awards Committee and member of the Publication Committee. He convened 11 ISHS symposia, colloquia and workshops and was editor/co-editor of 9 volumes of *Acta Horticulturae*. More recently as a Trustee of the Journal of Horticultural Science and Biotechnology he played a central role for the establishment of a partnership between the Board of Trustees and the ISHS, which opens the possibility for the Society to be engaged in a scientific journal. Professor Dixon is a strong proponent of horticultural science, technology and education and has been an energetic force in ISHS for many years.

Dr. Omer Verdonck (Belgium)

Dr. Verdonck has participated in activities of the ISHS since 1972 and has served the ISHS in a number of different capacities since 1985. That service history includes fulfilling the following roles: Chair of the Commission Plant Substrates and Soilless Culture for two terms, Convener or Co-Convener of two ISHS symposia, and editor or joint editor of 3 volumes of *Acta Horticulturae*. His most relevant contribu-



tion to the Society was the role that he played during the restructuring of the ISHS in the early 1990s when he was the Council appointee to examine the affairs of the ISHS at a time of significant turmoil and disruption. This also included him acting as the Executive Director of the ISHS during 1994. In both cases he fulfilled critically important roles that led to the restructuring of the ISHS into its current structures and processes. He undertook these responsibilities with common sense and effectiveness, providing a stable basis for the new Board and the changes that have provided the guidelines for the efficient and progressive ISHS organization that we have today.

Prof. Dr. Carlo Fideghelli (Italy)



Prof. Dr. Carlo Fideghelli has actively participated in the activities of the ISHS for quite a long time and has served the ISHS with high dedication in a number of different capacities. As a Council member representing Italy he was involved in important positive decisions that were made by the Society. He initiated and then chaired the Peach Culture Working Group for 16 years as a prominent scientist in the area of fruit crops. Later he chaired the ISHS Section Nuts and Mediterranean Climate Fruits. He repre-

sented Italy in the Steering Committee of the European Cooperative Programme for Plant Genetic Resources (ECPGR) and was a strong advocate for the creation of a Commission on Plant Genetic Resources, which he also chaired. Dr. Fideghelli is well respected within the ISHS owing to his perspicacity, innovative ideas and willingness to serve the Society wherever he was needed.

INTERNATIONAL HORTICULTURE INNOVATION AWARD

Compac Sorting Equipment Ltd (New Zealand)

The company Compac Sorting Equipment, Ltd., has made outstanding contributions worldwide in revolutionising fresh fruit and vegetable grading and sorting. Compac is a vision-leading company, driven by innovation through research and development. The Company has demonstrated leadership in creating, utilising and integrating leading edge software and new technologies at the cross-cutting interface of horticulture and mechanical, electronic, optical, and information engineering. These activities have improved customer satisfaction, enhanced product uniformity and quality, and expanded efficacy of product throughput in packing and grading facilities to achieve reduced costs and enhanced profitability for all in the supply chain.

For the highly meritorious achievements of this company in horticultural innovations that have significantly impacted horticulture throughout the world, the ISHS Council bestowed the ISHS Horticulture Innovation Award on Compac Sorting Equipment, Ltd.

-
- Errol Hewett, past ISHS Board member for Innovation, Industry and Insight (left) and António
- Monteiro, past ISHS President (second from left), handing out the ISHS Horticulture Innovation
- Award to Hamish Kennedy, CEO (second from right), and David Buys, International Sales
- Director (right), of Compac Sorting Equipment, Ltd.





The Development of Product Flows in the International Fruit Trade: Is the European Union Influenced by New Demanders and Changing Quality Requirements?

Antonius Diekmann, Verena Otter and Ludwig Theuvsen

INTRODUCTION

The globalisation of international trade, which is still in progress, has major implications for developed countries and also for developing and transition countries. Fresh fruits are one of the most globalized agricultural products today and the trade of fruit, mainly between developing countries in the global south and developed countries in the global north, has increased significantly in recent decades (Junior, 2009; Theuvsen and Voss, 2012).

The European Union (EU) is a major player in the international fruit trade. While the wealthy consumers of the EU make it a destination of interest for fruit suppliers from developing and transition countries, the increasing awareness of European consumers about food safety and sustainability issues has led to a sharp rise in the emergence of public and private food safety and sustainability standards (CBI, 2014; Henson, 2008). This pressure creates challenges for suppliers, for instance to reduce pesticide applications, improve working conditions and increase documentation, and could diminish the attractiveness of the European fruit market to producers in developing and transition countries. The appearance of new demanders in the international fruit market further magnifies the issue. Emerging markets with an increasing population and an increasing per capita income show a growing demand for consumer goods such as fruits (Diop and Jaffee, 2005). At the same time, these new demanders often refrain from applying the same high public and private standards as EU customers. This increases the attractiveness of these emerging markets.

The role of the European Union in international fruit trade may well be influenced by these developments. In this study we aim to descriptively analyse current trends in the international fruit trade with special focus on the emergence of new demanders entering the world market and the effect of public and private food safety standards on European imports.

THE ROLE OF THE EUROPEAN UNION IN THE INTERNATIONAL FRUIT TRADE

The European Union is one of the biggest importing regions of fresh fruits in the world and accounts for more than half of the quantity of world imports (Huang, 2005; CTA, 2010; Campos, 2014). The quantity of imported fresh fruits strongly increased until the year 2008 and since then has decreased slightly because of the economic downturn in the EU. In the years ahead a great increase in demand in Europe is hard to imagine since population and income per capita will not rise and current fresh fruit markets are saturated (CBI, 2014). Nevertheless, the EU remains an attractive fruit market due to the high absolute consumption level of wealthy consumers who are highly dependent on imports for two main reasons: first, even though the EU is a great fruit producing region, not all fruits demanded can be grown in the member states owing to climate restrictions; and second, seasonality hinders the year round supply of fruits produced. As a consequence the EU imports great quantities of fruits from developing countries and emerging markets in the southern hemisphere. The major fruit suppliers amongst the developing countries are Ecuador, Costa Rica and Colombia. South Africa is also a major supplier of fresh fruits to Europe (Campos, 2014).

In recent decades, the international trade of fresh fruits has shown dynamic growth in comparison to other agricultural products (Huang, 2005). The rise in incomes, the reduction in transportation costs, and new warehousing techniques for perishable products have supported this development. Furthermore, several countries, for instance Chile, have implemented strategies to increase exports of non-traditional agricultural exports such as fruits (Otter and Theuvsen, 2013). As well as trade between developing and developed countries, trade

between the emerging economies themselves has also grown over the last few years. Diop and Jaffee (2005) stated that the so called south-south trade is becoming more and more important. The authors point out that this trend applies most to countries with an increasing per capita income, which improves the buying power of the consumer. According to Huang (2005), China is one of these countries and is one of the most important players in the international fruit trade. Although China's current fruit trade is mainly for its export market, China also has the potential to become a major importer of fruits since Chinese fruit consumption has greatly increased over the last few years (Blanke, 2011). China and other new players can lead to lasting changes in international fruit trade flows.

THE PREVALENCE OF STANDARDS IN EUROPE

Since the beginning of the 21st century consumers have become more and more conscious of food safety issues such as microbial contamination and pesticide residues (Jaffee and Henson, 2005). Several food scandals such as the BSE (bovine spongiform encephalopathy) crisis in the UK and Germany and the EHEC (enterohaemorrhagic *Escherichia coli*) crisis in 2011 intensified consumer awareness of food safety issues. A major reason for the implementation of public and private food safety standards was to respond to growing consumer concerns (Henson, 2008). Additionally, globalisation of the trade of perishable products, such as fresh fruits, has fostered the implementation of food safety standards along the whole supply chain (Vermeulen et al., 2006).

Henson and Humphrey (2010) distinguish between public standards, which may or may not be mandatory, and private standards. The requirements of private standards are in many cases higher than the requirements of public standards. Private standards are often created

voluntarily by the industry and their implementation, auditing and validation are carried out by private companies and institutions. Even though private retail standards have been implemented voluntarily in the supply chain, these standards often become quasi-mandatory for suppliers who want to participate in the supply chain (Meuwissen et al., 2003). European retailers have a lot of market power and are the leaders or "captains" of the supply chain (Gagalyuk et al., 2009). Therefore, private standards required by retailers are often considered to be market entry barriers for suppliers from developing and transition countries (CTA, 2010), since they are compelled to meet the particular private standards (Soon and Baines, 2013).

Traditional standards cover quality and sanitary aspects. Standards, such as GlobalGAP, IFS or BRC, are representative of this group. These standards cover the whole production process and should enhance the quality and food safety of the product. Furthermore, sustainability and corporate social responsibility have become dominant management issues in many developed countries (Friedrich et al., 2012). This has led, among other things, to the implementation of numerous certification systems that guarantee compliance with minimum ecological and social sustainability standards (Fulponi, 2006). Social standards, such as the FAIRTRADE standard, are gaining increasing market share (CBI, 2014). The EU food business sector is now, after the automobile sector and the chemical sector, the third most regulated sector in the EU (Soon and Baines, 2013). Soon and Baines (2013) describe the problem that indeed food retailers pretend to homogenize the magnitude of standards, but in reality they are not seriously interested in this homogenization. In contrast to this, food retailers even create their own standards for a better competitive positioning in food markets (Henson, 2008). For this reason producers sometimes have to adopt a long list of standards if they want to deliver to the EU market.

THE INFLUENCE OF STANDARDS ON TRADE

Many authors of recent research studies are concerned about the impact of public and private food safety standards on producers in developing countries. The implementation, maintenance and auditing of standards is costly and these costs are often borne by the producer. These higher costs must be covered by higher product prices in order to get the same gross margin, prices that buyers are not willing to pay. Furthermore, producers in developing and transition countries struggle to meet the strict standard requirements due to poor infrastructure or a lack of qualified farmers or farm workers. There is thus a risk that small producers could be excluded from the international supply chains for this reason, however, even larger producers are often reluctant to enter the market because of the high cost of standard

adoption (Henson and Humphrey, 2010; Jaffee and Henson, 2005; Melo et al., 2012; Soon and Baines, 2013).

Nevertheless, private standards are sometimes used by developing countries to improve their competitive position in international markets (Jaffee and Henson, 2005; Henson and Jaffee, 2008). These standards are used to label products with special attributes in the sense of a product differentiation strategy. For example, standards such as Chile Gap or Kenya Gap combine the indication of a specific quality product attribute with the country of origin (Müller et al., 2012). These standards should enhance trust in products from these countries. In this way, standards could be seen as catalysts of international trade (Henson and Humphrey, 2010; Jaffee and Henson, 2005). Maertens and Swinnen (2009), for instance, conducted a study in Senegal and found that export margins increased despite several standard requirements. Thus, smallholder exclusion from international value chains due to food standards cannot be generalized for all products and export countries (CTA, 2010).

Due to the great importance of this topic, many studies have analyzed the influence of food safety standards on the trade of agricultural products in recent years. Jaffee and Henson (2005) showed that food safety standards can have negative effects on trade quantities between developed and developing countries. They further point out that standards can be used as protectionist tools by the developed countries. Between 1995 and 2009 around 49 specific trade complaints for fruit were reported by the World Trade Organisation. The specific trade complaints focused mainly on pesticide residues and aspects of food safety (Rickard and Lei, 2010). In many countries safety limits of pesticide residues have been tightened in recent years, and according to Melo et al. (2012) this accentuation has influenced agricultural trade negatively. Disdier et al. (2008) found that especially imports by the EU decreased because of higher sanitary and phytosanitary regulations. However, exports from developing and transition countries can also be affected negatively by nontariff barriers like food safety standards (Chen et al., 2008).

THE IMPLICATIONS OF FUTURE STANDARD DEVELOPMENT

The prevalence of food safety and sustainability standards in international markets is likely to further increase in the future. Standards are common not only in developed countries such as European countries and the US, but are also becoming more and more common in emerging markets such as China and Mexico (Melo et al., 2012). However, food safety standards in these countries are often less stringent than in developed countries. One example of this trend is the GreenFood Label in China. It ensures product

safety on the basis of product control only, rather than on control of the whole production process (Henson and Humphrey, 2010). At the same time it is very likely that food standards in Europe will become more stringent in the future and will increasingly cover several other aspects beside the traditional quality and sanitary requirements, as Fulponi (2006) discovered in interviews with several quality directors of major OECD retailers. According to the author, additional standards, such as environmental and social standards, will become more prevalent.

Overall, many producers in developing countries are not able or willing to fulfil such high requirements by the EU. The emergence of new demanders, for instance, in the Middle East and in Asia offer alternative markets for the products of these countries. According to a USDA report, South African fruit exporters are already trying to diversify their demander destinations. Exporters want to place more emphasis on Asian markets and markets in the Middle East because of the less stringent standards in these countries (USDA, 2014). This trend could lead to lasting changes in international fruit trade and might thus lead to sourcing problems for European retailers in the future.

CONCLUSION

Until now, in the highly globalized fresh fruit sector, developed countries such as European countries have had a large influence on import demand and have played a powerful role within the supply chain. The emergence of new demanding countries in international fruit trade is changing this situation drastically. In these emerging markets, the demand for fresh fruit has increased due to population and income growth. If these countries cannot meet their growing demand with domestic production they will be in competition with developed countries for supplies on the world market. Existing literature clearly shows that major fresh fruit production and export countries in Africa may switch to emerging Asian markets such as China (USDA, 2014).

This development is further encouraged by the increasing prevalence of public and private food safety standards, which have major influences on the trade of globalized food products such as fresh fruits. The EU fruit market is an attractive destination for developing countries' exports because of the wealthy consumers. However, the whole EU food market is highly regulated by public and private food safety standards and many studies point out that these standards can negatively affect trade quantities. Concerns arise that increasing standard regulations, along with new standards covering environmental and social aspects, will diminish the attractiveness of the EU market to producers and exporters from developing and transition countries.

Even though the EU will remain an important player in the fruit trade, these circumstances



could lead to lasting changes in international trade flows. To quantify such changes, to clearly identify new competing destination markets and to accurately understand policy and management implications, further qualitative and quantitative research, including primary data collection, needs to be carried out.

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Is Jean Bourdichon the Designer of the Hunt of the Unicorn Tapestries?

Jules Janick

The designer of the *Hunt of the Unicorn* tapestries located in the Cloisters, a branch of the Metropolitan Museum of Art, is unknown. The conjecture that they were made to commemorate the marriage of Anne of Brittany to Louis XII of France in 1499 was proposed by James J. Rorimer in 1942. If true, a logical designer for the tapestries would have been Jean (Jehan) Bourdichon (1457-1521), the illustrator and miniaturist associated with the French courts of Louis XI, Charles VIII, Louis XII, and François I, and best known as the illustrator of a personal prayer *Grandes Heures* for Anne made between 1503-1508. This conjecture was tested by comparing style elements including dress, fauna, and flora of the tapestries with illustrations in the *Grandes Heures*. A cryptic inscription in a horn in Tapestry 2 was rearranged to contain the initials A and reverse E (prominent in the tapestry) and the names Jean, Jehan, and Bourdichon in anagrammatic form. The totality of the evidence makes it plausible that Jean Bourdichon or his workshop were intimately associated with the tapestry.

INTRODUCTION

The *Hunt of the Unicorn* consists of seven tapestries that are currently in display at the Cloisters in Upper Manhattan, a branch of the New York Metropolitan Museum of Art (Fig. 1). The sequence of the tapestries has been disputed but will be presented in the order provided by Margaret Freeman (1976, p.13). The first five of the six tapestries depict aristocrats, with their minions and dogs hunting and eventually killing the mythological unicorn who appears in captivity enclosed in a corral in the seventh tapestry. The narrative can be summarized using the titles provided by Margaret Freeman (1976): (1) The start of the hunt, (2) The unicorn dips his horn into the stream to rid it of poison, (3) The unicorn leaps the stream, (4) The unicorn defends himself, (5) The unicorn is tamed by the maiden in two fragments, (6) The unicorn is killed and brought to the castle, (7) The unicorn in captivity. Clearly the last tapestry does not fit the narrative unless it is assumed that the unicorn is resurrected or that this tapestry is not an integral part of the series. Furthermore, some have considered that Tapestry 5 is part of another set (Cavallo, 1993, p.315). The tapestries' design has been dated between 1495 and 1505 based on dress details but completion date of the tapestries is unknown. The many meanings and symbolism of the tapestries are summarized by Cavallo (1993, 1998) but the interpretations are often contradictory. They vary from an allegory of the death and resurrection of Christ to secular interpretations regarding a hunt of a romantic mythological beast in celebration of a marriage. These conjectures are not mutually exclusive.

All the tapestries contain many florid ciphers (A and reverse E) connected by a cord in a bow-

knot indicating they were prepared for a single patron. The initials for Tapestry 1 and 7 (Fig. 2A) are slightly different from those in Tapestry 2 to 5 (Fig. 2B) suggesting a different designer/painter. Tapestry 1 and 7 incorporate a style popular in French and Flemish tapestry known as millefleurs (thousand flowers), where a mass of flowering herbs and trees are included in the background giving the tapestries high horticultural interest. The plants in the Hunt series have been identified based on symbols by Eleanor C. Marquand (1938) and on botanical evidence by E.J. Alexander and Carol H. Woodward (1941) but they differ slightly. The fruits and nuts of the tapestries have been discussed by Janick and Whipkey (2014).

The origin and meaning of the *Hunt of the Unicorn* tapestries have long been mysterious. Cavallo (1993) has summarized the many controversies surrounding them. Unfortunately the provenance of the tapestry from its origins has been lost. The earliest knowledge of the tapestries dates to their presence in the castle of the La Rochefoucauld family in 1680 and the initials FR (perhaps for Francis or Ferdinand de la Rochefoucauld) were added later to the sky in Tapestry 3 (Fig. 2C). A clue to the origin of the tapestries is the supposition of James J. Rorimer (1942) that the tapestries were made to commemorate the 1499 marriage of Anne, Duchess of Brittany and Queen of France (1477-1514) and Louis XII of France (1462-1515), a conjecture disputed by Margaret Freeman (1976, p.156-163). If Rorimer is correct, a logical artist to have designed and painted the tapestries would be Jean Bourdichon (1457-1521), the illustrator and miniaturist associated with the French courts of Louis XI, Charles VIII (second husband of Anne after her first proxy marriage to Maximilian I of Austria was annulled), Louis

XII (third husband of Anne), and François I. Bourdichon, best known for the illustration of two personal prayer books, one for Anne known as *Horae ad usum romanum* and generally referred to as *Grandes Heures d'Anne de Bretagne*, and the other for Louis XII known in English as the *Hours of Louis XII*. The object of this paper is to present and consider the assumption that Jean Bourdichon or his workshop is the designer/artist of the cartoon associated with the *Hunt of the Unicorn* tapestries.

THE TAPESTRIES, THE ROYAL MARRIAGE, AND THE DESIGNER/ARTIST

The reasons for Rorimer's conjecture that the origin of the Hunt tapestries was related to the marriage of Anne of Brittany and Louis XII of France and Margaret Freeman's objections are summarized below.

The Cipher A and Reverse E

The cryptic A and reversed E attached by a twisted cord ending in tassels, which Rorimer calls a cordelière, are ubiquitous in all the tapestries. The cordelière, strictly cords with knots at intervals worn by Saint Francis, were a favorite with Anne as can be seen in her escutcheon (Fig. 3A) and the fact that she founded an order of nuns called the Dames de la Cordelière. Rorimer assumes that A and reverse E represent the first and last letter of Anne's name or perhaps her motto, *A ma vie*, and indeed she used her initial A as a person symbol (Fig. 3B). Margaret Freeman (1976) however, points out that these initials could also refer to other names such as Antoine and Antoinette connected to the Rochefoucauld family or perhaps for the phrase *Amore in Eternum*, which would be appropriate for a wedding. Freeman further makes the point that the tasseled cord attaching the A and E is not truly a cordelière since it lacks a series of knots and is better referred to as a *lac d'amours*. It should be noted that the ornamental initials of Anne (Fig. 3B) appear as an intertwined knotted cord.

Internal Evidence from the Tapestries

The strongest evidence that the tapestries were made for Anne of Brittany's marriage to Louis XII is Rorimer's contention that the noble couple ("Seigneur" and "Lady") in Tapestry 6



Figure 1. The seven tapestries of *The Hunt of the Unicorn*: (1) The start of the hunt; (2) The unicorn dips his horn into the stream to rid it of poison; (3) The unicorn leaps the stream; (4) The unicorn defends himself; (5) The unicorn is tamed by the maiden, two fragments; (6) The unicorn is killed and brought to the castle; and (7) The unicorn in captivity. Source: Freeman, 1976.



resemble Anne and Louis XII. Freeman agrees that the portrait of the "Seigneur" (Fig. 4F) does resemble Louis XII (Fig. 4D, E) but quibbles over the hair and the necklace that she deems

inappropriate. She observes that the "Lady" (Fig. 4C) appears too old to be Anne who would have been only 22 in 1499. A possible explanation for this is that she wed Charles

V in 1491 and underwent seven pregnancies before Charles' accidental death in 1498. This would have been sufficient to destroy the bloom of her teenage years so vividly shown

Figure 2. Examples of the paired and knotted letters in the tapestries: (A) Tapestry 1 and 7; (B) Tapestry 2 to 5; (C) Tapestry 3.

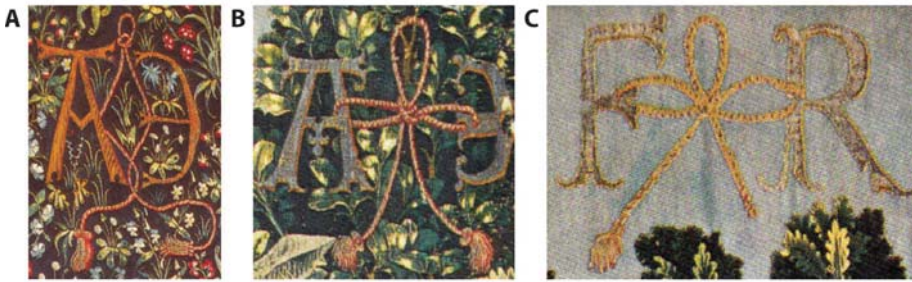


Figure 3. Emblems of Anne of Brittany: (A) escutcheon including cordelière; (B) ornamented initial made with a knotted cord. Source: Mere, 1946.

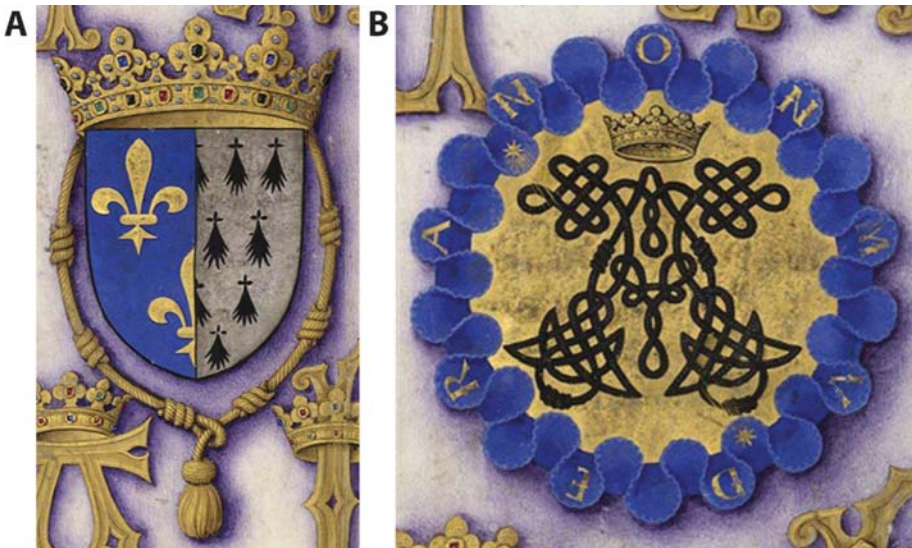
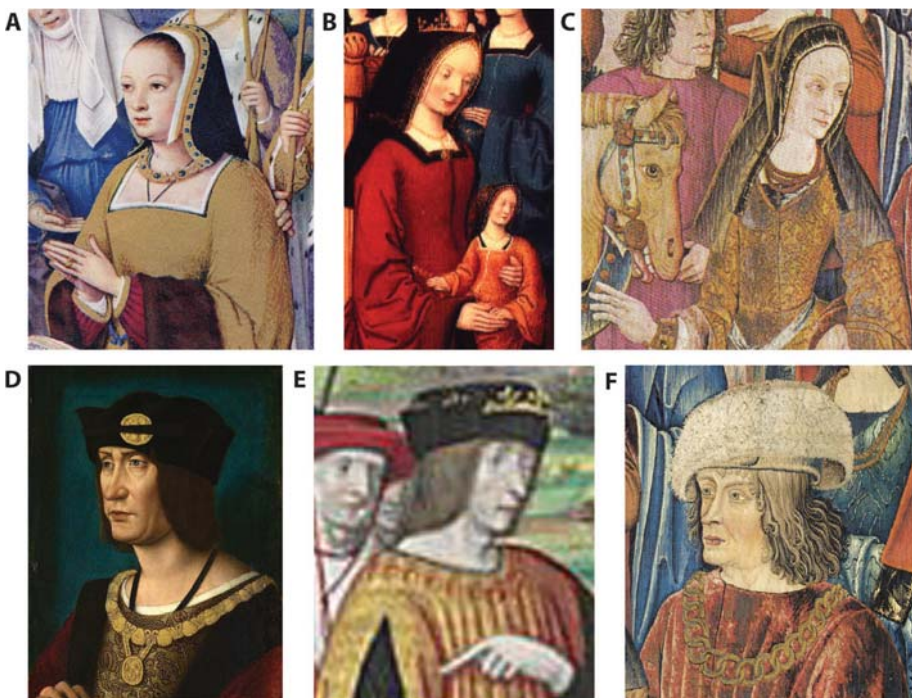


Figure 4. Portraits of Anne of Brittany and Louis XII of France compared with the Seigneur and lady in Tapestry 6: (A) Painting of Anne by Bourdichon from *Grandes Heures*; (B) Painting of Anne in 1503, folio from Bibliothèque Nationale, ms fr. 225, folio 165r *Remèdes de bonne et de mauvaise fortune de Pétrarque*, School of Bourdichon (atelier normand); (C) Lady in Tapestry 6; (D) Louis XII by Jean Perréal; (E) Louis XII in 1503 B.N. ms fr. 225, folio 165r; (F) Seigneur in Tapestry 6.



in an undated painting by the court artist Jean Bourdichon (Limousin, 1954, Fig. X), and which appears to be copied in the miniature of the *Grandes Heures* prayerbook designed between 1503 and 1508 (Fig. 4A). A portrait of Anne dated 1503 (Fig. 4B) attributed to the school of Bourdichon, more closely resembles the “Lady” of Tapestry 6. Thus, I discount Freeman’s objection and assume that the figures of the royal couple in Tapestry 6 are Anne and Louis XII, and furthermore, that the tapestry was made to commemorate their nuptials.

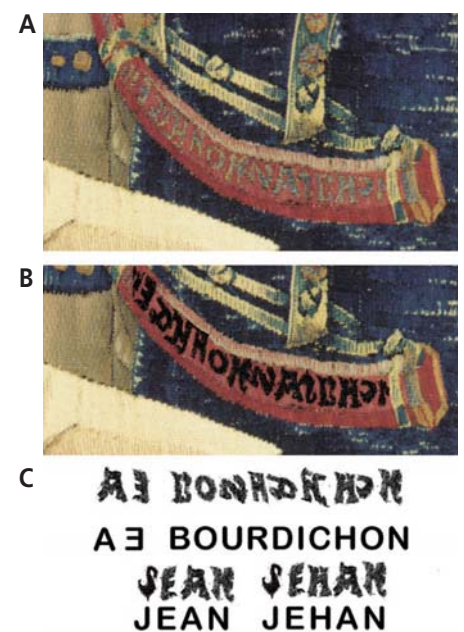
Other evidence that the tapestry is associated with Anne is provided by Rorimer. It includes Anne’s interest in unicorns, the presence of a squirrel in the tapestry that is associated with Anne, the extensive flora in the tapestries that is known to be a particular interest of Anne, and a porcupine (the personal emblem of Louis XII) in a castle flag, although Freeman demurs and thinks it looks more like a lion.

Horn Inscription

Margaret Freeman (1976, p.94) observed that a cryptic inscription on a hunting horn in Tapestry 2 (Fig. 5A) might provide a clue to the designer. She suggests that may be read from right to left: *Jones (Johannes?)* followed by an, then one or two questionable letters, then on, then several more questionable letters with an E near the end – possibly the second letter of *Fecit*. Linda Sipress (1974, p.43) paraphrases Freeman as follows: “Some of the letters may form the name Jean, and an isolated “e” may be part of the Latin *fecit* or “made by”.” Cavallo (1993, p.321) does not agree with this reading.

In view of the hint provided by Freeman I have examined the letters in the horn (Fig. 5A) after

Figure 5. The cryptic letters in the horn of a hunter in Tapestry 2: (A) the horn; (B) horn with letters enhanced; (C) decipherments.



enhancing them with Adobe Photoshop® (Fig. 5B). The series of letters contain an A and a reverse E like the signature initials so common in all the tapestries and also found on the collars of two dogs in Tapestry 1. Nine of the “letters” to the right of the backward E can be rearranged to reveal an anagram of the 10 letters of BOURDICHON after inverting one “letter” to come up with IC (Fig. 5C). Note that an unknown symbol has not been used. However, an inverted mirror image of this symbol forms the letter J, and then using the A and reverse E makes it possible to come up with the name JEAN or JEHAN, a variant used by Bourdichon (Limousin, 1954, p.7). If either of these assumptions is correct, rather than wishful thinking, the message in the hunting horn is a “smoking gun” pointing to Jean (Jehan) Bourdichon as the designer of the cartoon for Tapestry 2. Since Tapestry 2 is probably the first tapestry of the series (Tapestry 1 and 7 are undoubtedly later additions as discussed below), it is plausible that the designer/artist of the cartoon felt compelled to affix his name.

A COMPARISON OF THE UNICORN TAPESTRY AND THE ILLUSTRATIONS IN GRANDES HEURES D'ANNE DE BRETAGNE

The *Grandes Heures* of Bourdichon (476 pages) includes 337 pages with illuminated borders containing images of about 240 plants and over 640 fauna (insects and small animals); 49 full page miniatures mostly of religious subjects that include the famous portrait of Anne praying in front of an illustrated book with her three patron saints, Anne, Ursula, and Catherine; 12 calendar pages with genre scenes of the months; and 2 pages of Anne’s heraldic devices. It incorporates a number of agricultural scenes, two of which include Anne and one of which includes Louis XII.

Grandes Heures can be accessed online (<http://mandragore.bnf.fr/jsp/rechercheExperte.jsp>); the flora and accompanying insects and animals in the border can be found in a volume by Bilimoff (2001); the miniatures are reproduced in color in a commemorative volume by Mêle (1946); and the history of the work is discussed by Paris et al. (2006). This extraordinary prayer-book, which is contemporary with the tapestry, makes it possible to compare elements in the Hunt tapestry with Bourdichon’s paintings.

Flora

Rorimer mentions the fact that many flora in the Unicorn tapestry are found in the *Grandes Heures*. The plants in *Grandes Heures* have been identified by Camus (1894) and are listed in an appendix in Bilimoff’s book (2001, p.138-140). A database of the flora and fauna of *Grandes Heures* has been constructed by Anna Whipkey and Jules Janick (<http://www.hort.purdue.edu/>

newcrop/bilimoff/default.html). Alexander and Woodward (1941) have located 101 different plants in the seven tapestries of which 85 have been identified (Cavello, 1998, Appendix I). Of the 84 species plants identified in the tapestries, 74 have been found in *Grandes Heures*, a concordance of 88%. Paired images of six plants from both sources are shown in Figure 6. The images of the flora in the millefleurs patterns of Tapestry 1 and 7 are much simplified from the images in the borders of *Grandes Heures*. I suggest that the artist had a trove of preliminary sketches of plants that were modified first in the tapestry and then elaborated in the *Grandes Heures*.

Fauna

Animals in the tapestries include hounds (50 images), birds (20), unicorns (6), rabbits (2), lions (2), dragonflies (2), and single images of horse, stag, panther, genet, hyena, squirrel, frog, and butterfly. Of these, all but panther, genet, and hyena can be found in the paintings associated with the *Grandes Heures*. Paired images are shown in Figure 7. There is an additional remarkable similarity. The lion’s head in the fountain of Tapestry 2 is also found in the fountain in the Bourdichon’s miniature Bathsheba Bathing in the *Hours of Louis XII* (Fig. 7B right, top and bottom). These similarities of images suggest that the relationship between

Figure 6. Six plants in the tapestries (left) and *Grandes Heures* (right): (A) oak, Tapestry 4; (B) medlar, Tapestry 3; (C) strawberry, Tapestry 7; (D) rose, Tapestry 5; (E) corn marigold, Tapestry 3; (F) carnation, Tapestry 3.

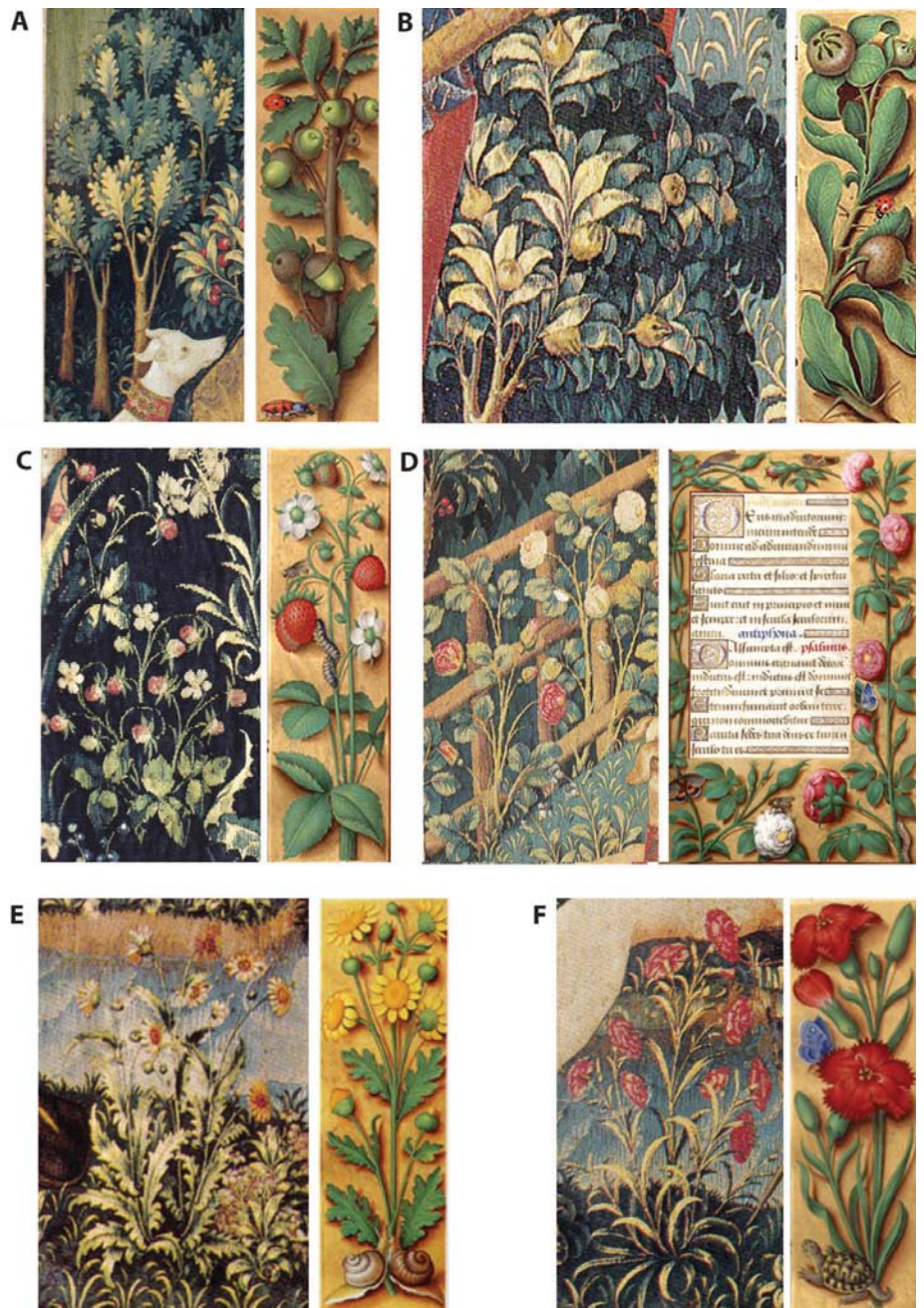


Figure 7. Nine animals in the tapestries (left) and *Grandes Heures* miniatures (Mêlé, 1946) or borders (right): (A) stag, left is from Tapestry 2, right is from Saint Hubert miniature; (B) lion, left is from Tapestry 2, right is from Saint Hubert miniature. Lion head on top is from Tapestry 2 and bottom is from Bathsheba Bathing from the *Hours of Louis XII*; (C) horse, left is from Tapestry 6, right is from Saint Hubert miniature; (D) hound, left is from Tapestry 3, right is from Saint Hubert miniature; (E) squirrel, left is from Tapestry 6; (F) rabbit from Tapestry 2; (G) frog; (H) dragonfly; and (I) butterfly from Tapestry 7.



the tapestries and miniatures of Bourdichon is not due to chance but infers that the same artist or workshop is involved.

Stylistic Comparison

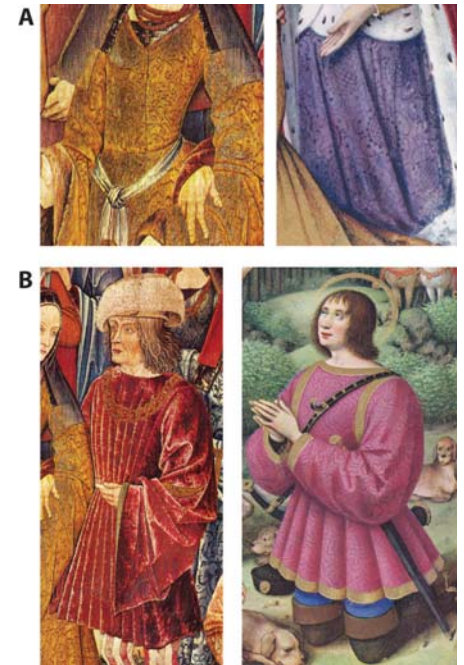
The Bourdichon miniatures were inspected to identify elements and stylistic similarities to those of the tapestries. It should be recognized that the miniatures are small religious works (ca. 12.5 × 20 cm) while the tapestries measuring 3.7 m in length allow much greater detail although somewhat obscured by the weaving process. A comparison of elements between the tapestries and some of the Bourdichon miniatures include apparel, body parts (faces, hands), scenes of violence, and castles. In each instant, images were scanned and compared in the same size.

Apparel. The artist of both the tapestries and miniatures shows a great interest in clothing. The Lady in Tapestry 6 wears an embroidered gown as does one of the saints in the portrait of Anne in prayer from *Grandes Heures* (Fig. 8A). The red costume of the Seigneur in Tapestry 6 is comparable to that of the kneeling Saint Hubert in a miniature, with similar folds in the skirt (Fig. 8B).

Heads, Hats, and Hands. Heads with diverse hats are compared in the tapestries and *Grandes Heures* miniatures (Fig. 9). Although many of the religious paintings in the *Grandes Heures* show sweet and angelic faces of saints and martyrs as would be required by the patron, there are enough character studies to show parallelism with the strong features shown in the tapestries. Note the facial similarity of the hunter with the red hat with a pompom and helmeted grotesque face from the *Kiss of Judas* miniature (the first head of each series). One of the features of both the tapestries and the miniatures are the beautifully drawn and expressive hands (Fig. 10 A, B). A close up of the clenched hands of Mary (Fig. 10C) from a painting entitled *Descent of the Cross* in the Église de Nouans (Limousin, 1954) shows Bourdichon's skill in the painting of hands.

Scenes of Violence. Tapestry 6 incorporates the brutal, horrific killing of the unicorn in Tapestry 6 (Fig. 11A). While many scenes in the miniatures are saccharine, showing men and women in prayer and study, Bourdichon does not shy away from extreme violence as can be shown in various scenes of arrow wounds, crucifixions, decapitations, and impalement

Figure 8. Fabric embroidery and folds in the Hunt tapestry (left) and the *Grandes Heures* miniatures (right): (A) embroidery in the gown of the lady in Tapestry 6 and in the dress of one of the saints in the portrait of Anne praying in *Grandes Heures*; (B) fabric folds in the costume of the Seigneur in Tapestry 6 and in the skirt of St. Hubert at prayer in *Grandes Heures*.



(Fig. 11B). Clearly Bourdichon had the ability to depict a wide range of emotional imagery.

Castle Scenes. The tapestries (Fig. 12A) and *Grandes Heures* miniatures (Fig. 12B) are replete with castles. Many different views of one castle, which has not been identified, are portrayed in the tapestries emphasizing turrets and mansard rooves (Fig. 12A). Various castles are shown in the miniatures (Fig. 12B). Since Bourdichon was the court painter he must have been very aware of many of the royal palaces and appears to have reconstructed them in imaginary scenes.

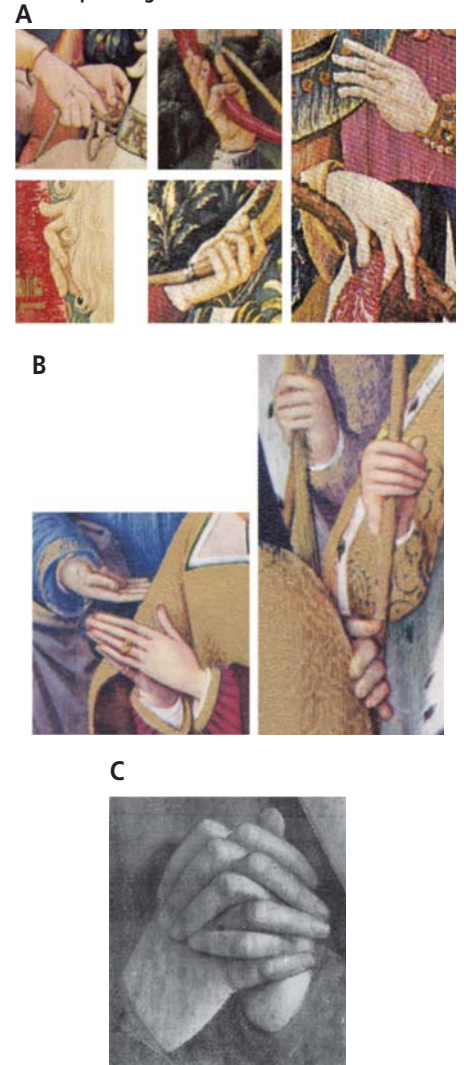
SUMMARY AND CONCLUSIONS

Rorimer's conjecture that the Hunt tapestry was made to commemorate the marriage of Anne and Louis XII is compelling despite the objections of Freeman. If this is accepted, Jean Bourdichon would have been the obvious person to design the tapestry because he was clearly a favorite of both Anne and Louis XII. A review of the miniatures of Bourdichon plus an early painting of Anne indicate that he was a superb draftsman, a man of unique artistic talent with a broad interest in zoology, traditional religious imagery, social problems, clothing, zoology, entomology, botany, agriculture, and horticulture. His images of plants with a wide array of insects and other fauna indicate he was a person with vivid imagination and wit. In short

Figure 9. Various heads with hats in Tapestries 2, 3, 4, and 6 (A) and in various miniatures of *Grandes Heures* (Saint-Mathieu, Saint-Luc, L'Adoration des Mages, Le Baiser de Judas, Saint-Côme and Saint-Damien, Saint-Nicolas) (B). Note the similarity of the hunter with the red hat with a pompom, and the helmeted soldier in the first head of each series.



Figure 10. Hands: (A) select images from Tapestries 3, 5, and 6; (B) miniatures from Anne de Bretagne en Prière from *Grandes Heures*; (C) close up of clenched hands of Mary from a painting entitled *Descent of the Cross* in the Église de Nouans showing Bourdichon's skill in the painting of hands.



he holds all the characteristics and talent of one who could have designed the complex and moving *Hunt of the Unicorn* tapestry. While any individual comparison of similarities between the Hunt images and Bourdichon's *oeuvre* is open to question, the sum of the similarities is compelling.

It has been suggested that two artist designers are involved in the tapestry series, one for Tapestry 1 and 7 (and perhaps 5) and one for 2 to 6. It is clear that Tapestry 1 and 7 are a set as shown by the similar millefleurs patterns, and may represent a different narrative. In Tapestry 2 to 6 the unicorn is hunted and killed but in Tapestry 1 and 7 the unicorn is hunted and captured. The figures in Tapestry 1 are stiffer and cruder than 2 to 6, although this might reflect a change in the tapestry workshop. Rorimer has suggested that the main figure in Tapestry 1 might be François I (he was known as Francis of

Figure 11. Scenes of violence: (A) Tapestry 6; (B) *Grandes Heures*. *Les Dix Mille Martyrs de la Légion Thébaïne*.

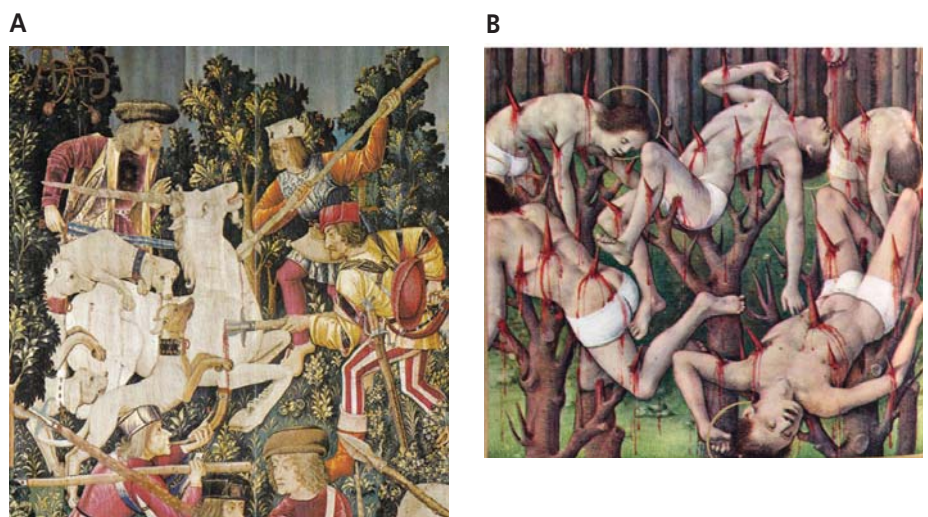


Figure 12. Castles: (A) Tapestries 2, 3, 4, and 6; (B) miniatures (La Visitation, Saint Martin, Sainte Ursula et ses Compagnons, and Saint Sebastien) of *Grandes Heures*.



the Large Nose), cousin and son in law of Louis XII. If the young man beside the royal couple in Tapestry 6 is young François, this would provide evidence that Tapestry 1 and 7 were made much later than Tapestry 2 to 6. Other evidence for different artists is that the pomegranate in Tapestry 7 is a fantasy tree suggesting that the artist was unaware of the plant, while the pomegranate tree in Tapestry 3 is more realistic. If two or more artists were involved, Bourdichon obviously cannot be the artist for both sets. The flowers in the millefleurs pattern in Tapestry 1 and 7 are similar and most can be found in the borders of *Grandes Heures* suggesting that the plant images could have been drawn from the same artist. I suggest that the figures in Tapestry 1 were probably not painted by Bourdichon but done perhaps by a less talented member of his workshop.

I conclude that it is entirely plausible that Jean Bourdichon and his workshop were the artists involved in the *Hunt of the Unicorn* tapestries. The anagram of Jean Bourdichon in the horn of Tapestry 2, if true, would be positive proof of this assertion. The addition of this major work to Jean Bourdichon enhances his reputation and in my opinion places him in the first rank of Renaissance artists.

ACKNOWLEDGEMENT

I thank Anna Whipkey for invaluable assistance with the figures and acknowledge Marie-Christine Daunay, Elisabeth Delahaye, Kim Hummer, Laurence Mykytiuk, Lincoln Taiz, and Judith Taylor for helpful comments.

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THE WORLD OF HORTICULTURE



New Books, Websites

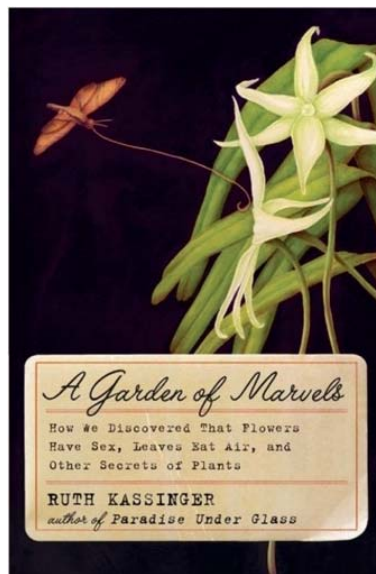
BOOK REVIEWS

The books listed below are non-ISHS-publications. For ISHS publications covering these or other subjects, visit the ISHS website www.ishs.org or the Acta Horticulturae website www.actahort.org

A Garden of Marvels: How We Discover That Flowers Have Sex, Leaves Eat Air, and Other Secrets of Plants. Ruth Kassinger. 2014. William Morrow/HaperCollins Publishers. 416p. ISBN 978-0-06-204899-8. \$25.99. www.harpercollins.com

There are two ways to learn about a particular topic. Either you dive into an arid disciplinary textbook or you read a descriptive novel, which vulgarizes the subject and explains it in layman's terms. For instance, Victor Hugo's description of Napoleon's 1815 Waterloo battle described in "Les Miserables", is certainly worth all the scholarly accounts of this historic battle.

The book written by Ruth Kassinger and recently published by William Morrow belongs to the latter group. It is a literary account of botanical sciences aimed at a curious general public, but also includes well-researched information to interest even specialized horticulturists and botanists. This book is the journey of a clueless gardener who sets out to explain her gardening failures by learning the principles of botany and plant physiology.



Using documented historical facts about plant botany, physiology and breeding, Mrs. Kassinger illustrates the depth of plant sciences using examples drawn from her own experience and from botanical oddities. For instance, did you know of the early botanist's description of the animal-plant hybrid called the vegetable-lamb, or the so-called "boramet", first described by Theophrastus (300 BC) which turned out to be a fantasized account of cotton plants from India? Or are you familiar with the role of Malpighi, then professor at the University

of Bologna, in providing the first descriptions of plant anatomy after the development of early rudimentary microscopes? This book is full of such practical examples using day-to-day experiences as a pretext to explain deeper underlying scientific principles. For example, she uses the production of 1700 pound pumpkins to introduce plant water movement and root function, and the story of Dr. Jian Ping working at the Ball Horticulture Company in Chicago who bred a black petunia, to explain the intricacy of plant breeding. Moreover, the author uses examples such as breeding multi-colored coleus, grafting multiple citrus species onto citrumelo rootstock, orchid pollination and development of the "Tasti-Lee" fragrant tomato, to explore the botanical principles of photosynthesis, hormonal regulation, phytoremediation, plant water movement, grafting compatibility, DNA transgenic technologies and more.

I thus warmly recommend this book to all who wish to broaden their mind and experience a different account of horticulture principles and the science of botany. It is intended for anyone who is not put-off by an intellectually lettered, yet most interesting and eclectic presentation of plant sciences. To conclude, and to give you a taste of the style of Mrs. Kassinger, let me cite the author's prose that exemplifies her descriptive talent as she seamlessly incorporates advanced scientific information into a poetic illustration of nature's marvels:

"Who hasn't looked at the stars in the night's

black sky and been humbled by their own smallness and insignificance? But now when I look out over my leafy neighbourhood from the window of my third-floor office, I think of this. There are vastly more chloroplasts on Earth than stars in the universe. All these chloroplasts owe their lives to that one eukaryote that engulfed an indigestible cyanobacterium that lived 1.6 billion years ago. That single creature's descendants turned the rocky continent into our leafy, green world, without which none of us could exist. Our garden is more than a marvel. It's as close to a miracle as there is on Earth".

Reviewed by Yves Desjardins, ISHS Board Member
Responsible for Publications

NEW TITLES

Carr, M.K.V. 2012. *Advances in Irrigation Agronomy: Plantation Crops*. Cambridge University Press, Cambridge, UK. 360p. ISBN 9781107012479 (hardback). £69 / \$117. www.cambridge.org

Carr, M.K.V. 2014. *Advances in Irrigation Agronomy: Fruit Crops*. Cambridge University Press, Cambridge, UK. 350p. ISBN 9781107037359 (hardback). £70 / \$115. www.cambridge.org

Hong, Chuanxue, Moorman, Gary W., Wohanka, Walter and Büttner, Carmen (eds.)

2014. *Biology, Detection, and Management of Plant Pathogens in Irrigation Water*. APS Press, St. Paul, MN, USA. 448p. ISBN 978-0-89054-426-6 (hard cover). \$279.00. www.shopapspress.org

Linderman, Robert G. and Benson, D. Michael (eds.). 2014. *Compendium of Rhododendron and Azalea Diseases and Pests*. 2nd Edition. APS Press, St. Paul, MN, USA. 144p. ISBN 978-0-89054-436-5 (soft cover). \$99.00. www.shopapspress.org



Courses and Meetings

The following are non-ISHS events. Make sure to check out the **Calendar of ISHS Events** for an extensive listing of all ISHS meetings. For updated information log on to **www.ishs.org/calendar**

Workshop on Developments in Hand-Held Application Techniques, 28-29 October 2014, Barcelona, Spain. Info: Dr. John Andrews, Association of Applied Biologists, Warwick Enterprise Park, Wellesbourne, Warwick, CV35 9EF, UK, Phone: +44 (0)2476 575195, Fax: +44 (0)1789 470234, Email: john@aab.org.uk, Web: www.aab.org.uk

Conference on Advances in IPM 2014, 19-20 November 2014, Marston, Lincs, UK. Info: Dr. John Andrews, Association of Applied Biologists, Warwick Enterprise Park, Wellesbourne, Warwick, CV35 9EF, UK, Phone: +44 (0)2476 575195, Fax: +44 (0)1789 470234, Email: john@aab.org.uk, Web: www.aab.org.uk

Master's Degree in Mediterranean Greenhouse Horticulture, 2014-2015, Almería, Spain. Info: Dr. María Teresa Lao Arenas, Coordinator, Escuela Internacional de Másteres de la Universidad de Almería, Carretera Sacramento S/N, 04120 Almería, Spain, Phone: +34950015876, Email: masterhmi@ual.es, Web: http://cms.ual.es/UAL/estudios/masteres/index.htm


XVIII International Plant Protection Congress (IPPC) 2015, 24-27 August 2015, Berlin, Germany. Info: Conventus Congress Management & Marketing GmbH, Carl-Pulfrich-Straße 1, 07745 Jena, Germany, Phone: +49 3641 31 16-0, Fax: +49 3641 31 16-241, Email: ippc@conventus.de, Web: www.ippc2015.de



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Section Nuts and Mediterranean Climate Fruits – Commission Plant Genetic Resources

Second Int'l Symposium on Wild Relatives of Subtropical and Temperate Fruit and Nut Crops

Azerbaijan is situated at the intersection of subtropical and temperate climatic zones and contains nine of the eleven global climate zones. The complex relief-climatic-terrain conditions of this region have resulted in rich plant biodiversity. Azerbaijan is one of the major centers of origin of cultivated as well as wild relatives of fruit and nut crops. The history of agriculture and fruit-growing in Azerbaijan spans millennia. One-hundred and forty-nine fruit and berry crop species belonging to 39 genera and 15 families are spread throughout Azerbaijan. The majority belong to the wild ancestors of fruit and nut crops of subtropical and temperate climatic zones.

Almost every year, international and local expeditions are organized to investigate wild ancestors of fruit and nut crops in different regions of Azerbaijan. Most regions have established gene pool gardens. These facts demonstrate that the organizing of the Second International Symposium on Wild Relatives of Subtropical and Temperate Fruit and Nut Crops on April 7-12, 2014 in the Genetic Resources Institute (AGRI) of Azerbaijan National Academy of Sciences (ANAS), Baku, Azerbaijan, was most appropriate.

This important event was organized by AGRI, ANAS and the International Society for Horticulture Science (ISHS), which combines thousands of well-known scientists, scientific organizations, indexed journals, and great experience in organizing international events. The symposium was held in the assembly hall of the

Genetic Resources Institute of ANAS and participants had the opportunity to communicate directly with the scientific staff of the institute and to access collections and laboratories.

The coordinators of the symposium were Dr. Damiano Avanzato (Italy - dam.avan@libero.it), Chair of the Plant Genetic Resources Commission of ISHS, and Dr. Zeynal Akparov (akparov@yahoo.com), Director of AGRI and Head of Scientific-Technical Council (Steering Committee) of Azerbaijan Republic on plant genetic resources (PGR). The scientific committee consisted of 36 prominent scientists: Acad. Garib Mammadov, Acad. Tariyel Talibov, Dr. Aydin Askerov, Prof. Zaur Hasanov, Dr. Dilshad Bayramova, Dr. Mirza Musayev, Dr. Zakir Ibrahimov, Dr. Danny Hunter - Australia, Prof. Nigel Maxted - UK, Dr. Jozef Turok - CGIAR, Prof. Malli Aradhyia - USA, Dr. Lamis Chalak - Lebanon, Dr. David Magradze - Georgia, Dr. Stefan Gandev - Bulgaria, Dr. Véronique Decroocq - France, Prof. Bekir Erol Ak - Turkey, Prof. S.N. Gosh - India, and others. In attendance were about 100 scientists representing 18 foreign countries (Italy, Iran, Turkey, USA, Spain, France, Lebanon, Georgia, India, Bulgaria, Uzbekistan, etc.) and several international organizations.

The symposium was dedicated to a globally important topic: the growing needs of the world's population for healthy food and farm products require efficient use of the genetic resources of fruit crops to provide food security in the period of intensification of global climate

changes and degradation of agro ecosystems. Eighty-four abstracts were published in book form before the start of the symposium and reports presented during the symposium covered recent scientific research on preservation, collection, evaluation, breeding and crop improvement programs involving efficient use of plant genetic diversity, especially wild ancestors.

PLENARY SESSION

The head Academic Secretary of the Department of Agrarian Sciences of ANAS, Garib Mammadov, opened the symposium with an introductory speech. He talked about the importance of the event, of science and education, particularly agricultural science, and of the reports that would be heard. He added that the government cares about the progress of science in Azerbaijan, noting that the President of Azerbaijan Republic challenged the nation's scientists with important tasks, especially in agrarian science. It's very important that in order to improve the material and technical base of science, comprehensive revitalization of relevant fields and more intensive involvement of young people in this area are needed.

Next, Dr. Damiano Avanzato talked about projects organized by ISHS. He noted that ISHS was established on a voluntary basis with about seven thousand members. More than 60 countries are represented in the membership of the Society. "I hope that Azerbaijan also will take

.....
● **Forestry biodiversity: mountain forests in Great Caucasus (Gabala, Gakh, Guba, Khachmaz) that are rich with wild relatives of fruit and nut crops.**





Open discussion led by selected foreign experts from (left to right) USA, Azerbaijan, Lebanon, Azerbaijan, Spain, Iran.

its honored place in the ranks of ISHS. This organization has made a valuable contribution to the world of science since it was established. At ISHS we highly appreciate the research of scientists and collect, publish and make available their scientific research results and works in the form of books, journals, etc. There is no doubt, the Baku symposium will play an important role in the creation of new scientific works." He added that the first symposium in this series had been organized at the University of California, Davis, USA, and that it was both commendable and well-advised that the next event was organized in Azerbaijan. Dr. Damiano Avanzato conveyed a message of thanks and presented a medal to the director of the Genetic Resources Institute, Dr. Zeynal Akparov, for organizing the symposium and collaborating with the ISHS.

Dr. Damiano Avanzato, ISHS representative, presenting the ISHS medal award to the Convener Dr. Zeynal Akparov.



Dr. Zeynal Akparov then spoke about work carried out by the head academic, C. Aliev's past works at the Genetic Resources Institute as a National Coordinator on PGR, research and scientific achievements. He informed the participants about the rich plant genetic resources of Azerbaijan, their recent condition, research, preservation and effective use measures, research institutions operating in this field and their main collections, and talked about the ancient heritage of horticulture and its development perspectives.

SESSION GENETIC, MOLECULAR, AND GENOMIC APPROACHES TO CHARACTERIZE TRAITS RELATED TO BIOTIC AND ABIOTIC STRESSES

Three presentations in this session should be noted. Dr. Gabriella De Lorenzis from Italy spoke in her presentation about the results of investigations on genetic diversity in *V. vinifera* wild compartment of Azerbaijan and Georgia. Prof. Aydin Askerov from Azerbaijan spoke about aspects of wild crop relatives in Azerbaijan and their study for adaptive traits. The presentation of Prof. Malli Aradhya from USA was about genetic characterization and utilization of wild relatives of fruit and nut crops at the USDA Germplasm Repository in Davis, California.

SESSION MOLECULAR AND TRADITIONAL BREEDING STRATEGIES

During this session there were interesting speeches and discussions on marker-based strategies for the fast introgression of genes from *Prunus* species into peach (Pere Arús from Spain), and conventional and molecular breeding strategies for resistance to sharka disease in stone fruit trees (Véronique Decroocq from France).

SESSION CURRENT STATUS OF CONSERVATION, MANAGEMENT, AND UTILIZATION OF FRUIT AND NUT CROP WILD RELATIVES

Ebrahim Latifikhah (Iran) talked about the identification, collection and evaluation of almond species and cultivars for conservation and uses in Iran. One of the best speeches was given by Ali Gharaghani from Iran. He compared the quantitative and chemical properties of the fruit of wild blackberry accessions (*Rubus sanctus*) from the north and south of Iran. Véronique Decroocq in her second presentation drew attention to the world-wide genetic diversity analysis of resistance sources to sharka in apricot. Mirza Musayev spoke about genetic resources of landraces and wild relatives of fruit crops in Azerbaijan. In this session the following presentations were also greeted with interest: 'Distribution of wild almonds in Lebanon and related uses,' by Prof. Lamis Chalak; 'Distribution of *Pistacia* spp. in Turkey and their importance for pistachio production,' by Prof. Bekir Erol; and 'Ecological and economic basis for the development of fruit plants in dry subtropical regions of Azerbaijan,' by Zaur Hasanov.

SESSION POPULATION AND PHYLOGENETIC APPROACHES IN SETTING CONSERVATION AND MANAGEMENT PRIORITIES

Main research results during this session were presented by Sadiye Gozlekci from Turkey (Some physical and chemical properties of two jujube (*Ziziphus jujube* Mill.) genotypes grown in western Turkey), Abdikhali Kayimov from Uzbekistan (Wild nut bearing crops in Uzbekistan), Mirza Musayev (Genetic resources of grapes in Azerbaijan), Stefan Gandev (Selection and cultivation of local wild walnut type in Bulgaria), Zakir Ibrahimov (Persian walnut in Azerbaijan: spreading, biodiversity and sustainable uses of its genepool), Ebrahim Latifikhah (Identification, collection and evaluation of local sour cherry germplasm for finding suitable rootstock and cultivars), and Anahita Mizani from Iran (Genetic stability assessment of apple mutants "Fuji kiku 8" and "GalaSchniga" during adaptation trial).

Daniel Kluepfel's (USA) presentation was about identification of crown gall resistant *Juglans* species for use as commercial rootstocks. Dilshad Bayramova from Azerbaijan spoke about old local varieties of stone fruits released through folk selection. Ali Gharaghani showed *Prunus scoparia* as a potentially multipurpose wild almond species in Iran.

Each session of the symposium was chaired by one local and one foreign scientist. The sessions



Visit to fruit germplasm collection in Guba district. Collections included 350 accessions of seedy fruits, 295 of nut crops, 239 of subtropical crops, 133 of stone fruit crops, and 14 of citrus plants.

were provided with simultaneous translation. The symposium passed in very vibrant and dynamic conditions. Each report was accompanied by extensive discussion. In total, 38 oral presentations and 30 posters were delivered by the participants.

A field trip was organized for 9 April to the Subtropical Horticultural Experimental Station in Guba district, situated 170 km north of Baku in the foothills of the Greater Caucasus Mountains, which have a great tradition in the field of horticulture. The director of the institute, Dr. Ilham Gurbanov, and other scientific staff welcomed the participants of the symposium, who were told about the institute, its collections, laboratories, breeding research selections, and new fruit varieties. Participants visited the field collections of fruit species germplasm, discussed and asked questions.

A banquet was organized in a restaurant situated in the nut crop forest. During the banquet, participants noted that this kind of event provides the opportunity to create and devel-

op communication among scientists and they thanked the organizers for that. In the evening, participants returned to Baku. At the final session of the symposium, it was decided that the third symposium would be held in Bulgaria in 2018, under the coordination of Dr. Stefan Gandev. In the end, Dr. Zeynal Akparov thanked Dr. Damiano Avanzato for organizing the event. In his turn, Dr. Avanzato thanked Dr. Z. Akparov and the organizing group, and stated his desire to hold other events in Baku in the future. He also thanked Dr. Afiq Mammadov, the head of the International Relations, Information and Coordination Department of AGRI, for his organizing work.

The cultural program of the symposium was very interesting to participants. They became acquainted with the sights and historical places of Baku. They were in the oldest part of Baku, which is called "Ichari Shahar", and tasted national foods, listened to national music, etc. The excursion on 12 April to the Gobustan National Mesolithic-Historical-Artistic Reserve,

which is rich in rock paintings and stone inscriptions, was very interesting for the participants. With a length (north to south) of 100 km, and width of about 80 km, the ancient settlement of Gobustan began with the gathering of people in the upper Paleolithic era, i.e. 35-34 thousand years BC. The rock paintings of the Mesolithic period are very informative historical evidence. The pomegranates and other fruits in these ancient drawings show that since ancient times these plants have been cultivated here.

The comments of participants during and after the symposium showed clearly that the discussions, speeches, presentations, meetings, and cultural program of the symposium will not disappear from memories for a long time. This symposium will play an important role in the relevant fields for the integration of world science, stimulation of young scientists, and for establishing and strengthening new scientific cooperation.

Zeynal Akparov and Afiq Mammadov

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Symposium website: http://wildcrops-2014.dev.az/wordpress/?page_id=19

Section Pome and Stone Fruits Int'l Symposium on Physiological Principles and Their Application to Fruit Production

Fruit scientists from around the world met in Geneva, New York State, USA, March 26-28, 2014, for an International Symposium on Physiological Principles and Their Application to Fruit Production. The meeting was sponsored by the Environmental Physiology of Fruit Crops Working Group, which is part of the Pome and

Stone Fruits Section of ISHS. The symposium focused on the physiological principles of fruit crops that have been discovered in the last 40 years including the complex interaction of rootstock, canopy architecture, training and pruning system, and environmental physiology – and how the understanding of physiological

principles guides modern orchard management. The symposium was designed to honor eight retiring fruit scientists who have been world leaders of fruit physiology for the last 35-40 years (alphabetically):

- Theodore DeJong, University of California-Davis, USA;



Participants of the symposium.

- James Flore, Michigan State University, USA;
- Duane Greene, University of Massachusetts, USA;
- Scott Johnson, University of California-Davis, USA;
- Hamlyn Jones, University of Dundee, United Kingdom;
- Alan Lakso, Cornell University, USA;
- John Palmer, Plant and Food Research, New Zealand;

■ James Syvertsen, University of Florida, USA. Each of the honorees gave an outstanding invited 1-hour lecture which highlighted the advances they have helped make in physiology during their careers. Collectively these lectures helped the attendees understand the significant role physiological research has played in developing modern orchard production systems. In addition to the invited lectures, there were 58 oral and 40 poster presentations of recent physiological research on fruit crops. The oral

sessions focused on five topics: 1) light interception and utilization, 2) carbon acquisition and utilization, 3) flowering and fruit development, 4) environmental physiology (water, nutrients, temperature, biotic stress) and 5) application of physiological principles in the orchard. The invited lectures and the contributed oral and poster presentations focused on how modern orchards have achieved 65-70% light interception and how orchards of the future can intercept up to 80% while managing nutrients and water in an environmen-

Ted DeJong, John Palmer and Alan Lakso during discussion at the symposium.



Alan Lakso with his wife Elaine receiving a lifetime achievement award from Terence Robinson, Symposium Convener.





Posters of the honored retiring physiologists at the closing banquet.

tally sustainable way. Much of the focus was on carbon allocation with various models of tree growth, fruit growth and fruit retention and abscission focused on carbon. Another important section focused on modeling water use to improve yield and quality but also to maximize water efficiency in areas with declining water resources. Lastly, several reports showed practical uses of physiological models and information to improve orchard management. Collectively, these research reports provided substantial information on recent advances in fruit physiology and how these advances are benefiting fruit growers and fruit consumers worldwide. There also were significant discussions on research needs for the next 10-15 years. These focused on making orchards more environmentally sustainable and improving management using advanced understanding of physiology. There was a strong feeling that whole plant physiologists are disappearing from many research organizations in favor of molecular scientists. However, the strong conclusion of the symposium was that physiologists are the key to understanding new genetic information and in developing practical uses of such information. There was a strong consensus that there needs to be greater cooperation between molecular scientists and physiologists.

The symposium was attended by 140 participants from 26 countries. It was organized by a team from Cornell University. Terence Robinson and Lailiang Cheng were the meeting Conveners and Alan Lakso chaired the program committee. Other members of the organizing committee were Leo Rufato and Andrea Rufato, who are from Brazil and were spending a sabbatical leave at Cornell University, Gabino Reginato from Chile, Steve Hoying, Mario Miranda and Leo Dominguez from Cornell. The meeting was supported financially by Cornell University, The New York Apple Association, E&J Gallo Winery, Valent Biosciences Corporation, Plant and Food Research of New Zealand, NY



Terence Robinson (left) and Lailiang Cheng (right) receiving the ISHS medal from Guglielmo Costa (center), outgoing Chair of the Pome and Stone Fruits Section.

Apple Research and Development Program, BASF Corporation, AMVAC Corporation, Fine Americas Inc., Cherry Marketing Institute of Michigan, and Felco.

The symposium included a one-day post-symposium tour of the fruit-growing region of Western New York State, which was led by Terence Robinson, Mario Miranda and Steve Hoying and had 45 participants. It focused on the application of physiology to fruit production. Topics included crop load management, planting systems, rootstocks, carbon utilization, and mechanization. Participants were able to see various simple machines that have been developed in New York State to reduce orchard labor requirements of pruning, thinning and harvest.

The day before the symposium the eight honored scientists gathered and presented a one-day workshop for fruit growers and extension

personnel, which focused on the applications of physiological principles to orchard management.

The symposium participants also enjoyed several social events including a dinner at Wagner Winery, and the symposium banquet at Ventosa Winery. At the closing banquet each of the eight retiring scientists was awarded a lifetime achievement award and a framed painting of fruit from the Environmental Physiology of Fruit Crops Working Group of ISHS.

By all accounts the symposium and the fruit grower school were a resounding success. It was a privilege for all who attended to recognize the important contributions of the eight retiring scientists who are an outstanding class of researchers who focused their careers on understanding physiological principles of fruit crops to better guide orchard management. They have had a large impact on fruit production. Their many friends from around the world congratulate them and thank them for their invaluable careers.

Terence Robinson and Lailiang Cheng

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Section Vegetables – Quality Production Systems – Leafy Green and Non-Root Vegetables

Thirteenth Int’l Symposium on Processing Tomato & Eleventh World Processing Tomato Congress

The 13th International Symposium on Processing Tomato was held in conjunction with the 11th World Processing Tomato Congress in the beautiful town of Sirmione situated on Lake Garda, Italy from 8-11 June 2014. The symposium was jointly organized by the ISHS and the World Processing Tomato Council (WPTC), as well as by Fiera di Parma, with Dr. Adriano Battilani from the Consorzio di Romagnolo - CER and Dra. Montaña Cámara from Complutense University of Madrid, Spain acting as scientific Conveners.

Our goal was to bring together the academic world, researchers, students, farmers and entrepreneurs involved in tomato processing, to share current state of the art knowledge in this important industry.

We are very pleased with the great success of our proposal as the symposium was attended by more than 500 attendees, and received a record 80 scientific abstracts from 19 different countries. This confirms the great interest and enthusiasm of the scientific community for topics relating to processing tomato such as sustainability of the production chain “from farm to table,” innovation in horticulture, processing and food quality. Tomato processing has confirmed its key role as a driver of innovation, both in the agricultural and industrial sector, thanks to a successful and sustained cooperation between science and industry over the last 25 years.



The Young Scientist Award was presented to Konrád János Deák from Hungary (center) and Seomara Martín Martín (second from the right) from Spain.

The ISHS program was organized into nine oral sessions focused on three main themes: 1) Crop production “Beyond the field: adding value to the tomato chain”; 2) Processing “Be smart to be competitive”; 3) Products “It’s not simply red: beyond the lycopene added value”. A total of 28 oral presentations and 38 poster communications were presented.

Smooth operation of this program was made possible thanks to the great work done by the session chairs and the 13 members of the Scientific Committee coming from China, Argentina, France, Italy and USA. The symposium was inaugurated by Dr. Silvana Nicola, Italy, outgoing Chair of ISHS Section Vegetables.

Prof. Silvana Nicola (center), outgoing Chair of ISHS Section Vegetables, presenting the ISHS medal award to Co-Conveners Dr. Adriano Battilani (left) and Dra. Montaña Cámara (right).



The Bernard Bieche Memorial Award was given to Luca Sandei from Italy.



The tomato crop is the first step in the tomato processing industry, and sustainable management of natural resources, through fertilization, irrigation and disease control is an increasingly important aspect both for farmers and industry. The first symposium theme "Beyond the field: adding value to the tomato chain" was discussed through 15 oral presentations and 26 poster communications. Changes in the composition of tomato and development of equipment and processing techniques were the main issues in the second theme "Be smart to be competitive" and were talked through 10 oral and 8 poster presentations. Human health is always important, especially in developed countries and in fast growing economies. In theme 3, "It's not simply red: beyond the lycopene added value" these aspects were considered by 3 oral communications and 4 poster presentations.

The complete papers of most oral and poster presentations will be collected in a special issue of *Acta Horticulturae* and published by the ISHS. This will be of great value to all involved in research in the tomato industry.

We must make a special mention of the four lectures presented at the joint Congress-

Symposium session entitled "Limited access to resources: Challenges or opportunities?" conducted by Adriano Battilani (CER, Italy); "Environmentally sustainable nitrogen management in processing tomato nutrition", given by Francesco Tei (University of Perugia, Italy); "Future innovations in tomato processing", presented by Diane Barrett (UC Davis, USA); and finally "Quality of food and determinants of consumption: towards a sustainable management of tomato product quality and impact on health", given by Marie-Josèphe Amiot-Carlin (INRA, France).

To encourage participation of promising young scientists who focus their research on tomato, the "Young Scientist Award" was sponsored in this 2014 edition by the seed company HM Clause and was given to three young scientists: Riadh Ilahi from Tunisia, Konrad János Deák from Hungary and Seomara Martín Martín from Spain. Furthermore, in order to recognize longer term career research, the "Bernard Bieche Memorial Award" sponsored by AMITOM was given to Luca Sandei (SICA, Italy) for his participation in previous Processing Tomato ISHS symposia and for the excellence of his contributions.

The goal of the symposium was to stimulate debate and encourage new collaborative initiatives to ensure a bright future for the tomato processing industry. For all participants, the symposium was an excellent opportunity to network with leading scientists and tomato industry representatives worldwide. Participants are already looking forward to the next edition in this series, to be held in Chile in March 2016.

Adriano Battilani and Montaña Cámara

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Section Vine and Berry Fruits Eleventh Int'l Conference on Grapevine Breeding and Genetics



Participants of the conference.

The 11th International Conference on Grapevine Breeding and Genetics was successfully held from July 28 to August 2, 2014, in Yanqing, Beijing, China, hosted by the Chinese

Ministry of Agriculture, the Chinese Academy of Sciences, and the Beijing Municipality Government. The conference attracted a total of 358 delegates from 34 countries in six con-

tinents. The number of participants increased by 10% compared to the last conference held at Cornell University, Geneva, NY, USA in 2010. The conference featured over 80 invited and



Opening ceremony.



Participants tasting the new grape cultivars developed by the Institute of Botany, Chinese Academy of Sciences.

selected presentations and more than 100 posters.

On the first day of the conference a plenary session was organized with eight presentations of international relevance. Professor Shaohua Li from the Chinese Academy of Sciences presented an overview of "Grapevine breeding and genetics in China: history, current status and future perspective". Dr. Anne Françoise Adam-Blondon from INRA, France, shared her view on "Open data in grapevine genomics". Dr. Bruce Reisch from Cornell University, USA, gave a thoughtful presentation on "Grapevine breeding – evolution or revolution?" Dr. Mario Pezzotti from Verona University, Italy, presented "Genotype by environment interactions in grapevine in the post-genomics era". Ian Dry from Australia's CSIRO discussed "The resistance strategies of grapevines to biotic stress". Dr. Serge Delrot from the University of Bordeaux, France, presented "Grape berry yield and composition: from the field to the gene". Dr. Maria Stella Grando from Fondazione Edmund Mach, Italy, discussed "Combining linkage and association mapping to dissect the genetic control of trait variation in grapevine". The last plenary presentation was given by Professor Gan-Yuan Zhong from USDA-ARS/Cornell University on "*Vitis* germplasm conservation, characterization, and development at the USDA-ARS in Geneva, NY". These plenary presentations revealed the overall progress and current trends in grapevine breeding and genetics, spanning from field phenotyping to genomics and everything in between.

The conference had two concurrent sessions, addressing seven general topic areas, including

"Grapevine breeding and new cultivar development", "Genetic resources and evolution", "Biotic and abiotic stress", "Yield and berry quality", "Vine growth and berry development", "Interactions between genotype and environment and climate", and "Omics and bioinformatics". With both oral and poster presentations, grapevine scientists reported the latest research findings in the broad area of grapevine breeding and genetics. Scientists also exchanged research ideas and projects, as they renewed friendships and established new ones. Delegates visited the breeding program at the Institute of Botany, Chinese Academy of Sciences, and two local wineries, one primarily using the locally bred cultivar and the other using the traditional cultivar. There were three post-conference tours. One group toured the Turpan area known for table and raisin grape production, and wineries in the far western region of China. The second group visited the rain-sheltered production in Nanjing, hosted by Professor Jianmin Tao from Nanjing Agricultural University. The third group toured the city of Xi'an and visited the Northwestern Agricultural and Forestry University which is host to the grapevine wild germplasm repository of China. This was the first time that this conference has been held in China (or Asia), and was the perfect opportunity to showcase to the global grape and wine research community the remarkable development that has taken place in China in both the grape and wine industry and in research.

During the conference, the International Grape Genome Program (IGGP) held its executive meeting to discuss the nomenclature of grape-

vine genes. Members explored how to proceed more efficiently with the community-wide genome annotation project, and how to integrate all data into a single, "one-stop shopping" portal. Dr. Anne Françoise (Chair), Adam-Blondon, Dr. Mario Pezzotti (Vice Chair), Dr. Max Cheng (Secretary), and other executive members attended the meeting.

The 12th conference will be held in France in 2018 and the Convener will be Dr. Serge Delrot, University of Bordeaux. For more information, please contact: Pr. Serge Delrot, Directeur de l'UMR Ecophysiologie et Génomique Fonctionnelle de la Vigne (<http://www.bordeaux-aquitaine.inra.fr/egfv/>), ISVV, 210 Chemin de Leysotte, CS 50008, 33882 Villenave d'Ornon, France, email: sdelrot@bordeaux.inra.fr

Shaohua Li and Zong-Ming (Max) Cheng

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Commission Plant Protection – Commission Plant Substrates and Soilless Culture

Eighth Int'l Symposium on Chemical and Non-Chemical Soil and Substrate Disinfestation (SD2014)

In the case of intensive cropping systems, disinfestation of soil and substrate remains crucial in order to combat soilborne plant pathogens, weeds and arthropod pests, and maintain productivity at high levels. The phase-out of methyl bromide, a widely used fumigant, since 2005 in industrialized countries has changed the approach to soilborne disease management. Researchers and governments invested much in terms of human and economic resources to help growers adapt to the loss of an important tool in disease management, while regulatory and consumer pressures continue to push toward further reduction in chemical inputs. In the meantime, new phytopathological problems have emerged, while old, minor problems have become more important. Developing and emerging countries will lose the use of methyl bromide in 2015, thus the results achieved in industrialized countries should be transferred to them, helping to continue their economic growth.

It is against this background that the 8th International Symposium on Chemical and Non-Chemical Soil and Substrate Disinfestation (SD2014) was held in Torino, Italy, from 13-17 July, 2014.

The symposium was organized by the Centre of Competence Agroinnova, University of Torino (Co-Conveners: M.L. Gullino and A. Garibaldi), under the auspices of the International Society for Horticultural Science (ISHS) and, for the first time, also under the aegis of the International Society of Plant Pathology (ISPP). The sym-

posium was financially co-supported by the Italian Ministry for the Environment, Land and Sea, the United Nations Industrial Development Organization (UNIDO), the University of Torino, the Torino Chamber of Commerce and the Foundation Cassa di Risparmio di Torino, as well as by private companies including SABIC, Certis Europe, AgriNewTech srl, Dow AgroSciences, Kuraray, and TRIS International.

One hundred and two science and industry delegates from 23 different countries attended the symposium (Australia, Austria, Brazil, Canada, China, Croatia, Egypt, France, Greece, India, Israel, Italy, Lebanon, Mexico, Morocco, The Netherlands, Poland, Romania, South Africa, Spain, Turkey, United Kingdom and USA). Thanks to UNIDO, several participants from developing countries were able to take part in the event.

The participants joined in a diverse and comprehensive scientific programme, including oral and poster presentations, a roundtable that was open to Italian extension services, and a technical excursion. The Proceedings of the symposium (*Acta Horticulturae* 1044), prepared in advance, was handed out to participants at the symposium.

The symposium was inaugurated by A. Garibaldi, President of Agroinnova, University of Torino. In his opening address he stressed the importance of managing soilborne pests and diseases in a way that accommodates the needs of the farmer, securing viable food production in the face of a growing world food demand,

and ensuring sustainable management of natural resources.

Welcome addresses were given by G. Bolatto (Secretary General, Chamber of Commerce of Torino, Italy), G. Ajani (Rector, University of Torino, Italy) and M.L. Gullino on behalf of ISHS and ISPP.

The scientific programme of the symposium consisted of nine thematic sessions including 46 oral presentations addressing the following topics: soil and substrate disinfestation in the Mediterranean Region; cultural practices; soilborne pathogens: detection and identification; organic amendments; anaerobic soil disinfestation; physical methods of soil disinfestation and solarisation; biological and integrated control; chemical soil and substrate disinfestation: new options and constraints; future challenges.

The poster session was reviewed and chaired by A. Gamliel, Agricultural Research Organization, Israel. Thirty-eight poster papers were presented showing results from very different fields of research related to soilborne pest and disease management.

The extensive scientific programme was complemented on Wednesday, July 16th, with a technical tour during which the delegates visited Agroinnova facilities, one nursery and two farms located in two typical agricultural production areas of Piedmont in the Cuneo and Torino Provinces, specialized in high quality production, mainly of pepper, tomato and salad crops grown under protection.

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Opening session. From left to right: M. Lodovica Gullino, Agroinnova, Italy; G. Ajani, University of Torino, Italy; G. Bolatto, Chamber of Commerce of Torino, Italy; A. Garibaldi, Agroinnova, Italy.



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Symposium Co-Conveners: Prof. Angelo Garibaldi (left) and Prof. M. Lodovica Gullino (right).





Delegates visiting the nursery "Ricca" in Carignano, Italy.



Delegates visiting facilities of Agroinnova, University of Torino, in Grugliasco, Italy.

In the evening a dinner was held at La Cascata Restaurant, Verduno.

A roundtable discussion that was open to Italian extension services, was organized as part of the symposium programme on Thursday, July 17th. This activity provided an opportunity to establish closer links between scientific research and technical innovation in horticultural production. During the closing session, delegates discussed the need for close cooperation among the international research community, extension services, growers, legislators and consumers regarding the important topic of soilborne pest and disease management. The cooperation between ISHS and ISPP was very much appre-

ciated, since it helped to bring more people to the symposium. Representatives from US (California), Greece and Turkey offered to host the 9th SD symposium in 2018, however, the final decision is still pending.

At the conclusion the Conveners expressed their thanks to all members of the Organising Committee and to all delegates for coming to the symposium and participating in its demanding program.

More information can be found on the website www.sd2014.org.

Paola Colla and Maria Lodovica Gullino

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Fifth Int'l Conference Postharvest Unlimited



The Fifth International Conference Postharvest Unlimited was held in Cyprus during the period 10-13 June 2014 and was considered by Dr. Peter Toivonen, ISHS representative, as the most successful conference carried out in this series. This is the first ISHS meeting to be held in Cyprus. Organization of this event was a joint initiative of the Cyprus University of Technology (CUT), Department of Agricultural

Sciences, Biotechnology & Food Science and the Mediterranean Agronomic Institute of Chania, Greece. It is worth noting that CUT is a newly established university in the Republic of Cyprus that welcomed its first students in September 2007 and has managed within a few short years to develop itself into a modern, pioneering and well recognized university, able to offer education and high level investigation in leading fields of research.

The conference was attended by 246 delegates and accompanying persons from 43 different countries. Delegates came from Italy (37), Greece (23), Spain (17), United Kingdom (15), United States (15), Israel (14), The Netherlands (9), Czech Republic (9), Germany (8), France (7)

and Brazil (6). The conference website (www.cut.ac.cy/postharvest) received ca. 10,000 unique visits from over 160 countries.

Developing new links and collaborations among participants, the conference managed to bring together researchers from diverse fields of study who share a common interest in postharvest science. The conference provided the opportunity for scientists, professionals and students to present their latest findings and discuss their current work related to basic and applied aspects of postharvest issues.

The main conference topics were system biology approaches and new insights in postharvest physiology and ripening of fruits and vegetables, innovations in postharvest technology,





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Conference delegates at Curium Theater.

fresh produce quality and supply chain management and effects of ripening and storage on nutritional and functional components in horticultural commodities. Exceptionally, this event was supported by two COST Actions: FA1104 'Sustainable production of high-quality cherries for the European market' and FA1106 'An integrated systems approach to determine the developmental mechanisms controlling fleshy fruit quality in tomato and grapevine'.

The conference scientific programme comprised 16 plenary talks, 68 oral presentations and 140 posters. The keynote speakers of the conference were: (1) John Labavitch, University of Davis, USA; (2) Bart Nicolai, University of

Leuven, Belgium; (3) Ian Ferguson, Plant & Food Research, New Zealand; (4) Mondher Bouzayen, University of Toulouse, France; (5) Pietro Tonutti, Sant' Anna School of Advanced Studies, Pisa, Italy; (6) Susan Lurie, Volcani Center, Israel; (7) Maria Isabel Gil, Food Science & Technology Department at CEBAS-CSIC, Spain; (8) Carlos Crisosto, University of Davis, USA; (9) Leon Terry, Cranfield University, United Kingdom; (10) Beth Mitcham, University of Davis, USA; (11) Peter Toivonen, Pacific Agri-Food Research Centre, Summerland, Canada; (12) Daniel Valero, University Miguel Hernández, Spain; (13) Ariel Vicente, University of La Plata, Argentina; (14) Serge Delrot, Institut des Sciences de la Vigne

et du Vin, Villenave d'Ornon, France; (15) Mario Pezzoti, University of Verona, Italy; and (16) Arnaud Boyv, University of Wageningen, The Netherlands.

Research highlights were:

- Emerging and novel postharvest technologies (e.g. dynamic controlled atmosphere, advanced control of respiration, energy saving storage systems),
- Advances in non-destructive determination of fruit quality and opportunities for application at commercial scale both preharvest (prediction of optimal harvest date) and postharvest (sorting lines),

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George Manganaris (left) and Panos Kalaitzis (right), Conference Conveners, during their welcome speeches.



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The ISHS business meeting was moderated by Peter Toivonen (left). Prof. Valero (right) and Dr. Gil (center) were nominated to organize the 6th International Conference Postharvest Unlimited in Madrid, Spain.





From left to right: Prof. Labavitch, Prof. Nicolai, Prof. Bouzayen and Dr. Ferguson during their keynote speeches.

- Water transport modelling in fruits and vegetables with the application of X-ray tomography offering new insights to improve postharvest storage,
- Major postharvest problems in minor undocumented crops, and their contribution to the overall understanding of postharvest problems,
- Strengths, weaknesses and opportunities in supply chain management of horticultural commodities,
- System biology approaches to unravel the molecular basis of ripening in model fruit crops,
- Strategies to enhance bioactive constituents in fruits and vegetables,
- Breeding programs meeting postharvest science,
- Aroma as a key factor determining fruit quality and the necessity for implementation of sensory analysis studies in postharvest research.

The social program of the conference included a welcome reception party, a gala dinner in the premises of the venue hotel, an excursion tour in Pafos and Lemesos, and a post-symposium tour to Nicosia, the capital of Cyprus. All details about the conference, including a descriptive set of photos from the scientific and social program of the conference, can be retrieved from the link www.cut.ac.cy/postharvest

The Conveners would like to thank Mondher Bouzayen (Chair of COST FA1106), Jose Quero (Chair of COST FA1104), James Mattheis, Peter Toivonen and the Cyprus Tourist Organization for their efforts in support of this event.

George Manganaris and Panayiotis Kalaitzis

Attending crowd in the main conference hall.



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New ISHS Members

ISHS is pleased to welcome the following new members:

NEW INDIVIDUAL MEMBERS:

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Japan: Dr. Tomoko Endo, Dr. Takashi Fujikawa, Dr. Shingo Goto, Ms. Miwa Hakoda, Hiroko Hamada, Junko Kaneyoshi, Shota Kawano, Mr. Yiran Li, Gang Ma, Dr. Hikaru Matsumoto, Mr. Haris Muhammad, Dr. Kazuhiro Nara, Dr. Fumie Nishikawa, Dr. Keisuke Nonaka, Dr. Satoshi Ohta, Ms. Keiko Sato, Ms. Mayumi Sato, Dr. Takehiko Shimada, Mr. Fumitaka Takishita, Dr. Takanari Tanabata, Prof. Dr. koji wada, Prof. Dr. Akira Wakana, Ms. Mihoe Yamada, Ms. Yuko Yanagimoto; **Kenya:** Ms. Beatrice Mugo, Mr. Francis Murumbi; **Korea (Republic of):** Assist. Prof. Sang Heon Han, Prof. Dr. Jae-Hoon Kim, Mr. JongWon Lee; **Malawi:** Ms. Georgina Kilner; **Malaysia:** Dr. Chieh Wean Choong, Dr. Pathmanathan Kumarasamy, Dr. Yasmeen Siddiqui, Dr. Boon Chin Tan; **Mexico:** Gustavo Acosta Santayo, Norman Aguilar Gallegos, Iran Alia Tejecal, Jannette Alonso Herrada, Nely Arellano Durán, Beatriz Guilher Arrieta Ramos, Catarina Avila Resendiz, J. Jorge Ayala Hernández, Rosendo Balois Morales, Eduardo Campos Rojas, Marisol Cásares Prado, Maria Teresa Colinas Leon, Elia Cruz Crespo, Consuelo de Jesús Cortez Penagos, Carlos Federico Demerutis Peña, Miguel David Dufco Hurtado, Maria Guadalupe Duran Paredes, Maria Antonia Flores Cordova, Juan José Galván Luna, García Granadas María Martina, Nestor Hernandez Carrillo, Carolina Hernandez Hernan, Alma Rosa Hernández Rojas, Adrian Elias Hernandez Villareal, Poot Canché Jutth Veronica, Carlos Raúl López Martínez, Miguel Angel Manzanilla Ramirez, Maria Teresa Martinez Damián, Pedro Humberto Martínez Rojo, Ylvi María Martínez Villegas, Edmundo Mateo Mercado Silva, Carmen Medina Mendoza, Victor Manuel Medina Urrutia, Arturo Muños Pérez, Ana Luisa Navarrete Valencia, Carlos Alberto Nunez

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In Memoriam

**PROF. DR. HAB. ANDRZEJ
WITOLD SADOWSKI
(14.02.1931 – 23.06.2014)**



Andrzej Witold Sadowski

Professor Andrzej Witold Sadowski was professor in the field of horticulture - pomology; Professor Emeritus of Pomology Department, Warsaw Agricultural University – SGGW (at present Warsaw University of Life Sciences – SGGW); Doctor *honoris causa* of Warsaw Agricultural University – SGGW; and Doctor *honoris causa* of St. Stephen University in Gödöllő, Hungary.

Andrzej Sadowski lived during the difficult times of the 20th century and his life required fortitude and decisive moral conduct to overcome its various difficulties. He was born on 14th February, 1931 in Warsaw. After graduating from secondary school in 1949, he started studies at the Horticultural Faculty of Warsaw Agricultural University – SGGW. He received an engineering degree in 1953 and a Master's degree in 1954. Already during his Master's studies he began work as an assistant in the Pomology Department of Warsaw Agricultural University – SGGW, which was undoubtedly a great honour for a student. After graduating he worked for two years as an agronomist on a State Agricultural Farm at Stara Wieś near Grójec. In 1956 he was sent to undertake doctorate studies at the Timiriaziew Agricultural Academy in Moscow from which he graduated in 1960. This was followed by a year at Rutgers University (USA) on a post-doctoral scholarship. After returning to Poland he once again joined the Pomology Department of Warsaw Agricultural University – SGGW, first as an assistant professor and then as an associate professor (1968) and full professor (1980). In 2001 he received the title of Doctor *honoris causa* granted by St. Stephen University in Gödöllő, Hungary and by Warsaw Agricultural University. During his time at Warsaw Agricultural University – SGGW he was a deputy dean of the Horticultural Faculty (1974/1975) and he held the office of dean of that faculty for two terms during the period

of 1978-84 as well as head of the Pomology Department from 1984 to 1997. From 1975 to 1978 he worked as a professor in the Colegio de Postgraduados in Chapingo, Mexico where he added Spanish to his multiple language proficiencies. His brilliant scientific career was possible due to his wide international contacts, exceptional abilities and painstaking diligence.

A highlight of the scientific work of Prof. Sadowski was a complex study of mineral fertilization of fruit bearing plants in connection with studies of the tree root system. He also studied the causes of physiological disorders of apples and evaluated the usefulness of various rootstocks and systems of intensive plantings of apple trees. After his retirement he was fascinated by an innovative approach to forming crowns of young 'Rubin' apple trees by nipping and thus stimulating shoots to branch, which resulted in higher crops. The achievements of his experimental work made Professor Sadowski an outstanding specialist in the field of fertilization and biochemical changes taking place at the root-soil contact, work which was recognized both in Poland and abroad. His research resulted in 135 original papers of which he was either lead author or co-author, 97 scientific reports, 6 textbooks and 130 papers on scientific themes for the general public. His research and published papers were highly innovative, often pioneering, and inspired many scientists. His papers and reports were published in prestigious journals and industry magazines both in Poland and abroad.

Throughout his career, Prof. Sadowski attracted many young scientists and doctoral students who, apart from collaborating on productive research, facilitated domestic and foreign contacts, obtained research grants, and participated in symposia and conferences at leading research centres and universities around the world. His graduate students included 8 that were granted doctoral degrees and nearly 80 that trained to the masters level, including 5 in the College Postgraduates in Chapingo (Mexico). He participated in numerous international congresses and conferences. He was an organizer or co-organizer of 5 international symposia and conferences at Warsaw Agricultural University – SGGW. Most recently he contributed importantly to the organization of the 13th EUCARPIA Symposium on Fruit Breeding and Genetics that took place in Warsaw in September, 2011.

In his scientific activities Prof. Sadowski promoted wide international cooperation, engaging partners from Germany, Belarus, Lithuania, Latvia, Estonia, Russia, Hungary and Canada. In the years 1994-2001 he was a coordinator of programs carried out together with the Belarussian Pomology Institute and the University of Horticulture and Food Industry in Budapest. For 9 years (1990-1998) he served

as Vice-Chair of the Pomology Section of the International Society for Horticultural Science and made key contributions to stimulate this Section and its International Working Groups.

The activities of Prof. Andrzej Sadowski as a researcher, academic teacher and organizer of scientific life at the University, tutor of young scientists and architect of modern pomology were widely recognized and appreciated. He received two awards from the Ministry of Higher Education and Technology and numerous prizes from the Rector of Warsaw Agricultural University – SGGW. He was honoured with the Gold Cross of Merit and Knight's Order of Polonia Restituta. He also received a Gold Badge for meritorious service to Warsaw Agricultural University – SGGW.

Professor Sadowski's interests were by no means limited to scientific activities. He was also capable of appreciating the beauty and diversity of nature, spending his holidays on the tourist routes of many countries. His passion was walking in the mountains, contact with nature, and finding beautiful sites among the rocky hillsides. Other passions were his pet monkey and the preparation of home-made fruit liqueurs, including raspberry, cherry, and nut liqueurs. Inspired by the treasures of nature he mastered to perfection methods for bringing out the whole bouquet of marvellous tastes and aromas from fruits.

On 23rd June, 2014 our world became poorer. It lost a man of great stature, friendly and unselfish and at the same time very intent on living and sharing the ethics of a scientist and academic teacher. He was a man of inexhaustible energy, always on the move, full of plans and ideas for new experiments, exploring the world, and maintaining friendships.

Traits so characteristic of Prof. Sadowski were his creativity, exceptional industriousness and the ability to associate facts that were seemingly not connected. With the death of Andrzej Sadowski the Polish scientific world and the community of Warsaw University of Life Sciences lost a personality with extraordinary virtues of both mind and character, a tutor of many generations of university students, and a man who astonished others with the originality of his observations. It was long ago observed by Goethe that "It is always said that life is short, however, if a man makes the best of it, he can achieve a lot." That was certainly true in the case of our dear friend and colleague, Professor Andrzej Sadowski.

Kazimierz Tomala, with contributions from Silviero Sansavini and Norman Looney



Calendar of ISHS Events

For updates and extra information go to www.ishs.org and check out the calendar of events. Alternatively use the "science" option from the website navigation menu for a comprehensive list of meetings for each Section, Commission or Working Group. To claim reduced registration for ISHS members your personal membership number is required when registering - ensure your ISHS membership is current before registering. When in doubt sign in to your membership account and check/renew your membership status first: www.actahort.org or www.ishs.org

YEAR 2014

- October 16-17, 2014, Rauscedo (Italy): **I International Symposium on Grapevine Roots**. Info: Dr. Diego Tomasi, Viale 28 Aprile 26, 31015 Conegliano(Treviso), Italy. Phone: (39)0438456733, E-mail: diego.tomasi@entecra.it E-mail symposium: root2014@entecra.it Web: <http://vit.entecra.it/grapevineroots2014/>
- November 11-14, 2014, Shimizu, Shizuoka (Japan): **III International Symposium on Citrus Biotechnology**. Info: Prof. Dr. Shigeto Tominaga, Faculty of Agriculture, Kagoshima University, Korimoto 1-21-24, Kagoshima-city 890-0065, Japan. Phone: (81)99-2858552, Fax: (81)99-2858552, E-mail: tominaga@agri.kagoshima-u.ac.jp or Dr. Tokuro Shimizu, NIFTS, MAFF, Kaju Kenkyu Sho, Shimizu Okitsu Naka Cho 485-6, 424-0292 Shizuoka, Japan. Phone: (81) 543 697108, Fax: (81) 543 692115, E-mail: tshimizu@affrc.go.jp E-mail symposium: contact@isc-japan.sakura.ne.jp Web: <http://iscb2014-japan.org/>
- December 8-11, 2014, Hochiminh City (Vietnam): **III Asia Pacific Symposium on Postharvest Research, Education and Extension: APS2014**. Info: Nguyen Duy Duc, SIAEP, 54 Tran Khanh Du, Tan Dinh Ward, District 1, Hochiminh City, Vietnam. Phone: (84-8) 38481151, Fax: (84-8) 38438842, E-mail: ducnguyenduy2003@yahoo.com E-mail symposium: aps2014.vietnam@gmail.com Web: <http://www.aps2014.vn/>

YEAR 2015

- March 16-18, 2015, Bogotá (Colombia): **International Symposium on Medicinal Plants and Natural Products**. Info: Dr. Jalal Ghaemghami, Great Partners, PO Box 320172, West Roxbury, MA 02132, United States of America. Phone: (1)3393686838, Fax: (1)3393686838, E-mail: jalal@phytoessence.org or Yann-Olivier Hay, Calle 235 #79-30 Casa 6, Conjunto Santillana Bogotá, Colombia. Phone: (57)1-8619400, E-mail: yann.olivier.hay@gmail.com E-mail symposium: information@phytoessence.org Web: <http://phytoessence.org/ISMPNP2015>
- NEW** ■ April 7-12, 2015, Kaohsiung County (Chinese Taipei): **International Symposium on GA3 Tropical Fruit (Guava, Wax Apple, Pineapple and Sugar Apple)**. Info: Dr. Chung-Ruey Yen, Nat'l Pingtung University, Science and Technology, Dept. of Plant Industry, Neipu, Ping Tung 91207, Chinese Taipei. Phone: (886)87740265, Fax: (886)87740392, E-mail: yencr@mail.npust.edu.tw
- April 19-24, 2015, San Remo (Italy): **VI International Symposium on Production and Establishment of Micropropagated Plants**. Info: Dr. Margherita Beruto, Regional Institute for Floriculture, IRF, Via Carducci 12, 18038 San Remo (Imperia), Italy. Phone: (39)0184535149, Fax: (39)0184542111, E-mail: beruto@regflor.it Web: <http://www.regflor.it/ISHS2015/>
- NEW** ■ April 20-24, 2015, Murcia (Spain): **III International Symposium on Organic Matter Management and Compost Use in Horticulture**. Info: Dr. Miguel A. Sánchez-Monedero, CEBAS-CSIC, Campus

- Universitario de Espinardo, 25, 30100 Murcia, Spain. Phone: (34) 968396364, Fax: (34)968396213, E-mail: monedero@cebas.csic.es Web: <http://www.compost-for-horticulture.org>
- April 21-24, 2015, Izmir (Turkey): **II International Workshop on Bacterial Diseases of Stone Fruits and Nuts**. Info: Prof. Dr. Hatice Özaktan, University of Ege, Faculty of Agric., Dept. Plant Protection, 35100 Bornova-Izmir, Turkey. Phone: (90)232 3884000, Fax: (90)232 3744848, E-mail: hatice.ozaktan@ege.edu.tr
- May 1-4, 2015, Shiraz (Iran): **III International Conference on Quality Management in Supply Chains of Ornamentals (QMSCO 2015)**. Info: Prof. Dr. Mohammad Mahdi Jowkar, Dept. of Agronomy and Plant Breeding, College of Agriculture, Islamic Azad University, Kermanshah, Iran. E-mail: mjowk@yahoo.co.uk Web: <http://www.qmsco2015.com/>
- May 18-22, 2015, Beijing (China): **V International Symposium on Ecologically Sound Fertilization Strategies for Field Vegetable Production**. Info: Prof. Dr. Silvana Nicola, University of Turin, Dept. of Agric., Forest and Food Sciences, Via Leonardo Da Vinci 44, 10095 Grugliasco (TO), Italy. Phone: (39)0116708773, Fax: (39)0112368773, E-mail: silvana.nicola@unito.it or Prof. Dr. Guoyuan Zou, Institute of Plant Nutrition and Resources, Beijing Academy of Agric. & Forestry Sci., No. 9, Middle Shuguanghuayuan Rd., Beijing, Haidian District, China. Phone: (86)1051503998, Fax: (86)1051503996, E-mail: zouguoyuan@baafs.net.cn
- May 21-25, 2015, Nigde (Turkey): **VII International Symposium on Edible Alliaceae**. Info: Ali Fuat Gokce, Nigde University, Faculty of Agric. Sci. and Technologies, Department of Agri. Genetic Engineering, 51240 Nigde, Turkey. Phone: (90)05365434241, E-mail: gokce01@yahoo.com E-mail symposium: isea2015turkey@yahoo.com Web: <http://sempozyum.nigde.edu.tr/isea2015/>
- NEW** ■ May 24-27, 2015, Hazyview (South Africa): **IV International Symposium on Guava and Other Myrtaceae**. Info: Ms. Karin Hannweg, ARC-ITSC, Private Bag X11208, Nelspruit Mpumalanga 1200, South Africa. Phone: (27)13752354, E-mail: karin@arc.agric.za or Maritha Schoeman, ARC-ITSC, Private Bag X11208, Nelspruit, 1200 Mpumalanga Nelspruit, South Africa. Phone: (27) 13 7537000, Fax: (27) 13 7523854, E-mail: maritha@arc.agric.za Web: <http://www.4thisgm.co.za/>
- May 31 - June 3, 2015, Alnarp (Sweden): **XVIII International Symposium on Horticultural Economics and Management**. Info: Dr. Lena Ekelund Axelson, Dept. of Work Science, Business Econ., Environmental Psychology, Box 88, S-230 53 Alnarp, Sweden. Phone: (46)40-415000, Fax: (46)40-415076, E-mail: lena.ekelund@slu.se Web: <http://www.slu.se/ishseconomicman2015>
- NEW** ■ June 2-5, 2015, Montpellier (France): **X International Symposium on Modelling in Fruit Research and Orchard Management**. Info: Dr. Evelyne Costes, INRA UMR DAP, 2, place Viala, 34060 Montpellier Cedex 1, France. Phone: (33)499612787, Fax: (33)499612616, E-mail: costes@supagro.inra.fr
- NEW** ■ June 8-12, 2015, Avignon (France): **International Symposium on Innovation in Integrated and Organic Horticulture (INNOHORT)**. Info: Stephane Bellon, INRA, Ecodevelopment Unit, SAD, Site Agroparc, Avignon Cedex 9, 84914, France. Phone: (33)432722583, E-mail: bellon@avignon.inra.fr or Dr. Nadia Bertin, INRA, Site Agroparc Domaine St Paul, Avignon 84914 Cedex 9, France. E-mail: nadia.bertin@avignon.inra.fr or Dr. Sylvaine Simon, INRA PACA AVIGNON, Domaine Saint Paul, Site Agroparc, 84914 Avignon Cedex 9, France. Phone: (33)432722560, Fax: (33)432722562, E-mail: sylvaine.simon@avignon.inra.fr or Prof. Dr. Laurent Urban, Campus Agroparc, 301 rue Baruch de Spinoza, BP 21 239, 84916 Avignon, France. Phone: (33)490842214, E-mail: laurent.urban@univ-avignon.fr

■ June 8-11, 2015, Lleida (Spain): **VIII International Symposium on Irrigation of Horticultural Crops**. Info: Dr. Jordi Marsal, IRTA, Centre udl-IRTA, Av. Rovira Roure 177, Lleida 25198, Spain. Phone: (34)973702639, Fax: (34)973238301, E-mail: jordi.marsal@irta.es

NEW

■ June 14-18, 2015, Bologna (Italy): **XIV Eucarpia Symposium on Fruit Breeding and Genetics**. Info: Dr. Stefano Tartarini, Dipartimento Scienze Agrarie, University of Bologna, Viale Fanin 46, 40127 Bologna, Italy. Phone: (39)0512096420, Fax: (39)0512096401, E-mail: stefano.tartarini@unibo.it E-mail symposium: convener@eucarpiafruit2015.org Web: <http://www.eucarpia-fruit2015.org>

■ June 21-24, 2015, Asheville, NC (United States of America): **XI International Rubus and Ribes Symposium**. Info: Dr. Gina Elizabeth Fernandez, North Carolina State University, 210 Kilgore Hall BOX 7609, Raleigh, NC 27695-7609, United States of America. Phone: (1)9195151188, Fax: (1)9195152505, E-mail: gina_fernandez@ncsu.edu or Dr. Penelope Perkins-Veazie, NC Research Campus, 600 Laureate Way, Suite 1329, Kannapolis, NC 28081, United States of America. E-mail: penelope_perkins@ncsu.edu E-mail symposium: rubusribes2015@newbeginningsmanagement.com Web: <http://www.rubusribes2015.com>

NEW

■ June 22-26, 2015, Cartagena (Murcia) (Spain): **V International Symposium on Cucurbits**. Info: Dr. Francisco Pérez-Alfocea, Dept. of Plant Nutrition, CEBAS-CSIC, PO Box 164, 30100 Murcia, Spain. Phone: (34)968396200, Fax: (34)968396213, E-mail: albocea@cebas.csic.es or Dr. M.L. Gómez-Guillamón, La Mayora Experimental Stat., Consejo Sup. de Invest.Cient., 29750 Algarrobo-Costa, Malaga, Spain. Phone: (34)952552656, Fax: (34)952552677, E-mail: guillamon@eelm.csic.es

■ June 28 - July 2, 2015, Melle (Belgium): **XXV Eucarpia Symposium on Ornamentals**. Info: Dr. Johan Van Huylenbroeck, ILVIO- Plant Unit, Applied genetics & breeding, Caritasstraat 21, 9090 Melle, Belgium. Phone: (32) 9-2722862, Fax: (32) 9-2722901, E-mail: johan.vanhuylenbroeck@ilvo.vlaanderen.be E-mail symposium: eucarpia-ornamentals@ilvo.vlaanderen.be Web: <http://www.eucarpiaornamentals2015.be/>

■ June 29 - July 3, 2015, Shenyang City (Liaoning Province) (China): **XVI International Symposium on Apricot Breeding and Culture**. Info: Dr. Weisheng Liu, Liaoning Inst. of Pomology, Xiongyue Town, Yingkou City Liaoning 115009, China. Phone: (86)417-7032822, Fax: (86)417-7842942, E-mail: weishengliu@yahoo.com.cn

NEW

■ July 5-8, 2015, Jupiter's Gold Coast, QLD (Australia): **ICESC2015: Hydroponics and Aquaponics at the Gold Coast**. Info: Mr. Graeme Smith, PO Box 789, Woodend Victoria 3442, Australia. Phone: (61)354272143, E-mail: graeme@graemesmithconsulting.com or Dr. Mike Nichols, 10 Newcastle St, Palmerston North 5510, New Zealand. Phone: (64)6-3576922, E-mail: m.nichols@inspire.net.nz Web: <http://www.icesc2015goldcoast.org/>

■ July 19-23, 2015, Evora (Portugal): **Greensys 2015 - International Symposium on New Technologies and Management for Greenhouses**. Info: Prof. Dr. Fátima Baptista, Universidade Evora, Dept.Eng.Rural - ICAAM, Nucleo da Mitra, Apartado 94, 7002-554 Évora, Portugal. Phone: (351)266760823, Fax: (351)266711189, E-mail: fb@uevora.pt or Prof. Dr. Jorge Ferro Meneses, Instituto Superior de Agronomia, Tapada da Ajuda, 1349-017 Lisboa, Portugal. Phone: (351)213602082, Fax: (351)213621575, E-mail: jmeneses@isa.utl.pt or Prof. Dr. Luís Silva, University of Evora - ICAAM, Dept.Eng.Rural - ICAAM, Nucleo da Mitra, Apartado 94, 7002-554 Evora, Portugal. Phone: (351)266760933, Fax: (351)266760911, E-mail: llsilva@uevora.pt Web: <http://www.greensys2015.uevora.pt>

NEW

■ July 26-29, 2015, Fredonia, NY (United States of America): **II International Workshop on Vineyard Mechanization and Grape and Wine Quality**. Info: Terence Bates, 6592 West Main

Road, Portland, NY 14769, United States of America. E-mail: trb7@cornell.edu or Dr. Nick Dokoozlian, E & J Gallo, P. O. Box 1130, Modesto, CA 95353, United States of America. Phone: (1)5596466587, Fax: (1)5596466593, E-mail: nick.dokoozlian@ejgallo.com

NEW

■ August 6-9, 2015, Kyoto (Japan): **II International Symposium on Pyrethrum**. Info: Prof. Kazuhiko Matsuda, Department of Applied Biological Chemistry, Faculty of Agriculture, Kinki University, 3327-204 Naka-machi, Nara 631-8505, Japan. Phone: (81)742-437153, Fax: (81)742-431445, E-mail: kmatsuda@nara.kindai.ac.jp

■ August 20-24, 2015, Perth (Australia): **VIII International Symposium on New Ornamental Crops and XII International Protea Research Symposium and XVII International Protea Association Conference**. Info: Dr. Robyn McConchie, The University of Sydney, Faculty of Agriculture Food and Natural Res, NSW 2006, Australia. Phone: (61) 2 8627 1045, E-mail: robyn.mcconchie@sydney.edu.au Web: <http://protea-new-ornamentals2015.org/>

NEW

■ August 31 - September 3, 2015, Napoli (Italy): **V International Symposium on Fig**. Info: Prof. Tiziano Caruso, Department of Agricultural & Forest Science, University of Palermo, Viale delle Scienze, Edificio 4 ingresso H , 90128 Palermo, Italy. Phone: (39) 09123861207, E-mail: tiziano.caruso@unipa.it or Dr. Boris Basile, Department of Agricultural Sciences, Università di Napoli Federico II, Via Università, 100, 80055 Portici NA, Italy. Phone: (39)081-2539387, Fax: (39)081-2539389, E-mail: boris.basile@unina.it E-mail symposium: figsymposium2015@soishs.org Web: <http://www.soishs.org/fig>

■ September 7-11, 2015, Vienna (Austria): **International Symposium on Growing Media, Composting and Substrate Analysis - SusGro2015**. Info: Dr. Andreas Baumgarten, Austrian Agency for Health and Food Safety, Institute for Soil Health and Plant Nutr., Spargelfeldstrasse 191, 1226 Wien, Austria. Phone: (43)50555 34100, Fax: (43)50555 34101, E-mail: andreas.baumgarten@ages.at E-mail symposium: susgro2015@ages.at Web: <http://www.susgro2015.ages.at>

■ September 8-12, 2015, Abuja (Nigeria): **II International Symposium on Mycotoxins in Nuts and Dried Fruits**. Info: Dr. Anthony Negedu, Raw Materials R&D Council, Food and Beverages Division, 17 Aguiyi Ironsi Street, Maitama, Abuja, Nigeria. Phone: (234)8055240599, E-mail: tonyneg2000@yahoo.com E-mail symposium: mycotoxinsymposium2015@rmdc.gov.ng

■ September 13-16, 2015, Davis, CA (United States of America): **III International Conference on Fresh-Cut Produce: Maintaining Quality and Safety**. Info: Dr. Marita I. Cantwell, University of California Davis, Department of Plant Sciences, Mann Laboratory, Davis, CA 95616-8746, United States of America. Phone: (1)5307527305, Fax: (1)5307524554, E-mail: micantwell@ucdavis.edu Web: <http://fresh-cut2015.ucdavis.edu>

■ September 13-16, 2015, Washington (United States of America): **II International Symposium on Mechanical Harvesting and Handling Systems of Fruits and Nuts**. Info: Dr. Matthew Whiting, Washington State University, IAREC, 24106 N. Bunn Road, Prosser, WA 99350, United States of America. E-mail: mdwhiting@wsu.edu

NEW

■ September 16-18, 2015, Belgrade (Serbia): **III Balkan Symposium on Fruit Growing**. Info: Prof. Dr. Dragan Milatovic, Faculty of Agriculture, Nemanjina 6, 11080 Beograd - Zemun, Serbia. Phone: (381)112615315, Fax: (381)112193659, E-mail: mdragan@agrif.bg.ac.rs E-mail symposium: 3bfsfg@agrif.bg.ac.rs Web: <http://3bfsfg.agrif.bg.ac.rs>

NEW

■ September 28 - October 2, 2015, Darwin, Northern Territory (Australia): **XI International Mango Symposium**. Info: Mr. Bob Williams, 3 Hayward Place, Durack, Darwin 0830, Australia. Phone: (61)8 89314013, E-mail: rcekwilliams3@bigpond.com or Dr. Lucy Tran-Nguyen, NTDFPIF, GPO Box 3000, Darwin Northern Territory 0801, Australia. Phone: (61)8 8999 2235, Fax: (61)8 8999 2312,



E-mail: lucy.tran-nguyen@nt.gov.au or Dr. Ian Bally, Agri-Science Queensland, Dept. of Agriculture Fisheries and Forestry, PO Box 1054, Mareeba QLD 4880, Australia. Phone: (61)740484644, Fax: (61)74093593, E-mail: ian.bally@daff.qld.gov.au E-mail symposium: mango2015symposium@conlog.com.au Web: <http://mango2015.com.au>

- September 28 - October 2, 2015, La Plata (Argentina): **IX International Symposium on Artichoke, Cardoon and their Wild Relatives.** Info: Stella Maris García, Campo Experimental J.F. Villarino, C.C. 14, Zavalla S 2125 ZAA, Argentina. Phone: (54)341-4970080, Fax: (54)341-4970080, E-mail: sgarcia@unr.edu.ar or Vanina Pamela Cravero, Campo Experimental J.F. Villarino, C.C. 14, Zavalla S 2125 ZAA, Argentina. Phone: (54)341-4970080/85, Fax: (54)341-4970080/85, E-mail: vcravero@unr.edu.ar Web: <http://www.alcachofa2015.com/>

- NEW** ■ October 11-14, 2015, Wageningen (Netherlands): **V International Symposium on Applications of Modelling as an Innovative Technology in the Horticultural Supply Chain - Model-IT 2015.** Info: Rob Schouten, Horticultural Production Chains, Wageningen University, Droevendaalsesteeg 1, 6708 Pd Wageningen, Netherlands. E-mail: rob.schouten@wur.nl or Prof. Dr. Leo F. M. Marcelis, Wageningen University, Horticulture & Product Physiology, Droevendaalsesteeg 1, 6708 PB Wageningen, Netherlands. Phone: (31)317485675, E-mail: leo.marcelis@wur.nl

- NEW** ■ October 18-22, 2015, Port-au-Prince (Haiti): **International Symposium on Valorisation, Preservation and Processing of Tropical Fruits and Vegetables.** Info: Dr. Marie Thérèse Charles, 430 Boulevard Gouin, Saint-Jean-sur-Richelieu QC J3B 3E6, Canada. Phone: (1)450-346-4494, Fax: (1)450-346-7740, E-mail: marietherese.charles@agr.gc.ca

- November 19-22, 2015, Manila (Philippines): **I International Symposium on Moringa.** Info: Dr. Manuel C. Palada, Central Philippine University, College of Agriculture, Res & Env Sciences, Lopez Jaena St, Jaro, Iloilo City, Philippines. Phone: (63)33331795, Fax: (63)333203685, E-mail: mpalada@gmail.com or Dr. Andreas Ebert, AVRDC - The World Vegetable Center, 60 Yi-Min Liao, Shanhua, 74151 Tainan, Chinese Taipei. Phone: (886)65837801, Fax: (886)65830009, E-mail: ebert.andreas6@gmail.com Web: <http://ism2015.moringaling.net/>

- NEW** ■ December 7-9, 2015, Ubon Ratchathani (Thailand): **I International Symposium on Quality Management of Organic Horticultural Produce.** Info: Dr. Wiraya Krongyut, 2, Faculty of Agriculture, Ubon Ratchathani Rajabhat University, Nai Muang 34000, Thailand. Phone: (66) 45-352-000, Fax: (66)45-352-088, E-mail: wirayakrongyut@gmail.com

YEAR 2016

- January 11-17, 2016, Giza (Egypt): **IX International Symposium on In Vitro Culture and Horticultural Breeding.** Info: Adel A. Abul-Soad, Horticulture Research Institute, 9 Cairo University St., 12619 Giza, Egypt. E-mail: adelaboelsoad@gmail.com E-mail symposium: 9ivchbegypt16@gmail.com

- NEW** ■ April 10-14, 2016, Orlando, FL (United States of America): **XI International Vaccinium Symposium.** Info: James Olmstead, University of Florida, 2211 Fifield Hall, Gainesville, FL 32611, United States of America. E-mail: jwolmstead@ufl.edu

- NEW** ■ April 11-14, 2016, Izmir (Turkey): **III International Symposium on Organic Greenhouse Horticulture.** Info: Prof. Dr. Yüksel Tüzel, Ege University, Agriculture Faculty, Department of Horticulture, 35100 Bornova Izmir, Turkey. Phone: (90)2323880110, Fax: (90)2323881865, E-mail: yuksel.tuzel@ege.edu.tr

- May 1-1, 2016, Antalya (Turkey): **III International Symposium on Biotechnology of Fruit Species.** Info: Prof. Dr. Ahmet Naci

Onus, Department of Horticulture, Faculty of Agriculture, Akdeniz University, 07059 Antalya, Turkey. Phone: (90) 242-3102441, Fax: (90) 242- 2274564, E-mail: onus@akdeniz.edu.tr

- NEW** ■ May 22-26, 2016, East Lansing, MI (United States of America): **VIII International Symposium on Light in Horticulture.** Info: Prof. Erik Runkle, 1066 Bogue Street, Room A288, Michigan State University, East Lansing, MI 48824, United States of America. Phone: (1)517.355.5191 x350, Fax: (1)517.353.0890, E-mail: runkleer@msu.edu or Prof. Roberto G. Lopez, Purdue University, 625 Agriculture Mall Drive, West Lafayette, Indiana, USA 47907, United States of America. Phone: (1) 765 4963425, Fax: (1) 765 4940391, E-mail: rglopez@purdue.edu Web: <http://www.lightsym16.com>

- June 28 - July 1, 2016, Kunming (China): **XII International Symposium on Flower Bulbs and Herbaceous Perennials.** Info: Prof. Ding Mu, No.12 Zhongguancunnandajie, Haidian District, Beijing city, 100081, China. Phone: (86)10-82105944, Fax: (86)10-62174123, E-mail: muding2011@126.com

- NEW** ■ August 2-5, 2016, Minneapolis, MN (United States of America): **III International Symposium on Woody Ornamentals of the Temperate Zone.** Info: Dr. Stan C. Hokanson, Univ. of Minnesota, Dept. Of Horticulture, Breeding&Genetics, Woody Landscape Plnts., 258 Alderman Hall, 1970 Folwell Ave., St. Paul, MN 55108, United States of America. Phone: (1)6126241203, Fax: (1)6126244941, E-mail: hokan017@umn.edu

- August 7-12, 2016, Lagos (Nigeria): **III All Africa Horticultural Congress.** Info: Prof. Dr. Isaac Ore Aiyelaagbe, Department of Horticulture, University of Agriculture, PMB 2240 Abeokuta, Ogun State, Nigeria. Phone: (234)8033815606, Fax: (234)39243045, E-mail: ola_olu57@yahoo.com

- NEW** ■ September 19-22, 2016, Chania, Crete (Greece): **III International Symposium on Horticulture in Europe - SHE2016.** Info: Dr. Panagiotis Kalaitzis, Mediterranean Agronomic Inst. Of Chania, 85, Macedonia Str. P.O. Box 85, 73100 Chania, Greece. E-mail: panagiot@maich.gr or Prof. George Assist. Manganaris, Anexartisias 33, P.O. Box 50329, 3603 Lemesos, Cyprus. Phone: (357)25002307, Fax: (357)25002804, E-mail: george.manganaris@cut.ac.cy

- September 19-22, 2016, Avignon (France): **HortiModel2016: Models for Plant Growth, Environmental Control and Farm Management in Protected Cultivation.** Info: Dr. Nadia Bertin, INRA, Site Agroparc Domaine St Paul, Avignon 84914 Cedex 9, France. E-mail: nadia.bertin@avignon.inra.fr

- September 26-28, 2016, Kafr El-Sheikh (Egypt): **VI International Symposium on Tropical and Subtropical Fruits.** Info: Dr. Ali R. El-Shereif, Horticulture Department, Faculty of Agriculture, Kafrelsheikh University, 33516 Kafr El-Sheikh, Egypt. Phone: (20)473254315, Fax: (20)479102930, E-mail: aelshereif@agr.kfs.edu.eg

- September 26-30, 2016, Atakum, Samsun (Turkey): **VI International Chestnut Symposium.** Info: Prof. Dr. Umit Serdar, Ondokuz Mayıs University, Faculty of Agriculture, Horticultural Department, 55139 Samsun, Turkey. Phone: (90)3623121919, Fax: (90)3624576034, E-mail: userdar@omu.edu.tr

- October 4-8, 2016, Sanliurfa (Turkey): **VIII International Symposium on Mineral Nutrition of Fruit Crops.** Info: Prof. Dr. Bekir Erol Ak, University of Harran, Faculty of Agriculture, 63200 Sanliurfa, Turkey. Phone: (90)4143183698, Fax: (90)4143183682, E-mail: beak@harran.edu.tr

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