

Programme

EAPR Post Harvest Section Meeting

29 June - 1st July 2016





Committee

Scientific Committee

• Adrian Cunnington

Head of Sutton Bridge Crop Research, AHDB Potatoes, UK

Ir. Kurt Demeulemeester

Head Arable Crop, INAGRO, Rumbeke-Beitem, Belgium

Dr. Norbert Haase

Director Max -Rubner Institute for Food Safety and Food Quality, Germany

Ir. Michel Martin

Head Storage Research, Institut Arvalis, Estree Mons, France

Prof. Dr. Nora Olsen

University of Idaho, USA

Dr. Mike Storey

Head of R&D - Potatoes, AHDB Potatoes, UK

Prof. Dr. Ing. Ernst Woltering

Food and Biobased Research, Wageningen University, Netherlands

Dr. Glyn Harper

Senior Scientist, AHDB Potatoes, UK

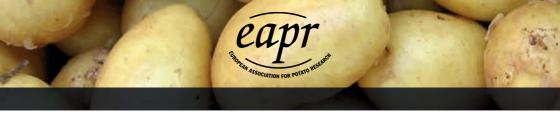
• Dr. Ir. Tjaart Hofman

Development Manager, Certis Europe B.V., Netherlands

Organizing Committee

- Glyn Harper
- Tjaart Hofman





Welcome to the EAPR Post Harvest Section Meeting 2016

Dear colleague, June 2016

We are very pleased to welcome you to Wageningen, the centre of Dutch excellence in healthy food, food production and living environment. The University of Wageningen was established in 1876 and is within the Ministry of Agriculture, whereas other universities are within the Ministry of Education. With 10,000 students, 20 % of whom are from other countries, Wageningen is a relatively small and highly specialized university. Thanks to its relationship with the Agricultural Ministry in The Netherlands, the triangle between Research, Education and Farming practice is strongly established to the benefit of Dutch agriculture and business. Wageningen is known as Food Valley and many multinationals have research units based in the vicinity of the campus and work in close collaboration with the University.

Wageningen has a special location at the borders of the Rhine, with hills shaped by glaciers, creating within very short distances a large variety of soil types and associated vegetation. Join the Wednesday evening visit to the Arboretum on the Wageningse Berg, (berg means "Mountain") for a special view of this landscape. Hotel De Wereld in Wageningen was the location for signing of surrender by the Germans to end the 2nd World War in Netherlands on May 5, 1945. The Hotel De Wereld has pictures of the city during its liberation 70 years ago which you can visit. May 5 is now the national holiday when the Dutch celebrate being a free country living in peace and the festivities in Wageningen on this day are particularly well known. The town of Wageningen is small and students make up a major part of its population giving it a great livelihood. 10 years ago the University re-located to a new campus just North of the city that we visit Thursday afternoon to give you a small flavour of the university life.

We are very pleased that this Section meeting on Post Harvest has attracted such great interest with over 100 participants! Our initial nervousness in attracting a sufficient number of participants to run this event has been forgotten. We hope you will get many interesting new ideas from interacting with other participants and listening and discussing the presentations. We wish you a week with lots of fun, creativity, and productive contacts with colleague researchers!

Please do not hesitate to call on us for any support you need during your stay.

Have a great time! Glyn Harper and Tjaart Hofman







Day 1: June 28

08.00 - 20.00 Evening Registration and welcome reception at Hotel

Day 2: June 29

08.00 - 09.00 Registration

09.00 Introduction, Glyn Harper and Tjaart Hofman

O9.15 Dick Hylkema, director of the NAO (Dutch Potato Association) "Current and Future challenges of potatoes post harvest"

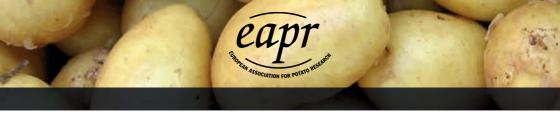
09.40 Tuber Health. Chair Glyn Harper

- Jan van der Wolf, Wageningen UR, P.O. Box 16, 6700 AA Wageningen, "A chain approach to control tuber soft rot"
- Allison Blackwell, APS Biocontrol Ltd., Prospect Business Centre, Dundee Technology Park, Dundee, DD2 1TY, UK. "The potential for bacteriophage to control post-harvest soft rot development"

10.20 Coffee

10.40 Physiology and Quality management session **1.** Chair Nora Olsen

- Sjaak Aben, Lamb Weston/ Meijer, "Storage techniques fitting the need of potatoes for processing worldwide"
- Sanjay Gupta, Department of Soil, Water and Climate, University of Minnesota, St. Paul, MN 55108, USA. "Predictive biomarkers for cold-induced sweetening resistance and improved long term storability of potatoes"
- **Ernst Woltering** and Renata Ariens, Wageningen University and Research Centre, Food and Biobased Research Bornse Weilanden 9, 6708 WG, Wageningen "Cold sweetening: Diagnostic genes for fry color prediction in potato batches"
- Yi Wang, Department of Plant, Soil, and Entomological Sciences, Kimberly Research and Extension Center, University of Idaho, Kimberly, Idaho, USA "Elite U.S. Potato germplasm with low acrylamide-forming potential during post harvest storage"



- **Nigel G. Halford,** Plant Biology and Crop Science Department, Rothamsted Research, Harpenden, Hertfordshire AL5 2JQ, United Kingdom "Producing low acrylamide risk potatoes: a public/private sector collaborative project focussed on genetics, agronomy and storage"
- Norbert Haase, Department of Safety and Quality of Cereals, Federal Research Institute of Nutrition and Food, Detmold, Germany "Potato Crisps Quality in Relation to Cell Wall Compounds"
- 12.30 Lunch
- 13.15 Poster session 1

13.45 Physiology and Quality management session 2. Chair Norbert Haase

- M. Carmen Alamar, Katherine Cools and Leon A. Terry, Plant Science Laboratory, Cranfield University, Bedfordshire, MK43 OAL, United Kingdom "Understanding potato dormancy using a mapping population"
- Michiel de Vries, Edwin van Nieuwenhuizen, Menno ter Maat and Pim Lindhout, Solynta,
 Dreijenlaan 2, 6703 HA Wageningen, The Netherlands "Inbred diploid potatoes retain genetic variation for dormancy"
- Margot Visse¹². Hervé Vanderschuren ² and Brice Dupuis¹, ¹Agroscope, Institute for Plant Production Sciences, Route de Duillier 50, CP 1012, 1260 Nyon, Switzerland. ²Plant Genetics Lab, Gembloux Agro-Bio Tech, University of Liège, 5030 Gembloux, Belgium "Description of a novel method to calculate the dormancy duration of the potato varieties"
- Marion J. Tout¹, Andrew Fleming¹, Mike Burrell, Glyn Harper² and Heather Walker¹. ¹Dept. of Animal and Plant Sciences, University of Sheffield, UK. ²Sutton Bridge Crop Storage Research, AHDB Potatoes, Sutton Bridge, UK. "The metabolism of potato dormancy break"
- Claudia Carvalho, Richard Colgan and Debbie Rees, Food & Markets Department, Natural Resources Institute, University of Greenwich, Chatham, ME4 4TB, UK. "Calcium regulation within dormant potato tuber buds"
- **15.15 Coffee** including demonstration by Bas Groeneweg, Perfotec.

15.45 Physiology and Quality management session 3. Chair Ernst Woltering

- **Nora Olsen,** Mary Jo Frazier and Sherilyn Peck, University of Idaho, Kimberly Research and Extension Center, Kimberly, Idaho, USA "Wound healing and early store management"
- **Dani Eshel**, Dept. of Postharvest Science, Volcani Center, P.O. Box 6, Bet-Dagan, 50250, Israel "Seed tuber storage: can we control stem number?"
- **Leo Lukasse** and Matthijs Montsma, Wageningen UR Food & Biobased Research, Wageningen, The Netherlands. *"Seed Potatoes in reefer containers"*



16.45 Store Management. Chair Adrian Cunnington

- Romke Wustman, WPC Wustman Potato Consultancy, The Netherlands "Storage is essential in food security"
- Adrian Cunnington¹, Steve Saunders¹, Jon Swain², Jim Allen² and Andrew Kneeshaw²,
 ¹AHDB, Sutton Bridge CSR, Sutton Bridge, Spalding, PE12 9YD, UK. ²FEC Services, Stoneleigh Park, Kenilworth, CV8 2LS, UK, "Air leakage testing of potato stores in Great Britain"
- Nik L.M. Grubben^{1,2}. and Karel J. Keesman², ¹ Omnivent Techniek B.V., PO Box 1232, 3890 BA Zeewolde, the Netherlands. ²Wageningen University, Biobased Chemistry and Technology, Wageningen, the Netherlands. "Modelling and climate control in potato storage facilities"
- Burkhard Wulf, Potato Research Station Dethlingen, Dethlingen 14, 29633 Munster,
 Germany, "Mechanical cooling: Effect of temperature differences at the evaporator on the storage quality of potatoes"
- Jeroen van Kappel, Mooij Agro, Stationsstraat 142, 5963 AC Hegelsom, The Netherlands.
 "Better air distribution using the Every-Air system results in reduced energy costs, higher quality potatoes and better distribution of CIPC"
- 18.00 Close of session
- **18.15 Departure by bus to Arboretum**19.00 return by walk from Arboretum to Hotel (2.5 km), or
 19.15 departure of bus to Hotel
- 19.30 Reception drinks and Poster session
- 20.00 Conference Dinner in Hof van Wageningen

Day 3: June 30

08.30 Sprout Suppression session 1. Chair Glyn Harper

- **Tjaart Hofman,** Certis Europe B.V., P.O. Box. 1180, 3600 BD Maarssen, The Netherlands "Changing storage practices with new potato sprout suppressants"
- Adrian Briddon¹. John Horrocks² Mike Sharp³, Steve Marshall⁴ and Steve Saunders¹. ¹AHDB Sutton Bridge Crop Storage Research, East Bank, Sutton Bridge, Spalding, Lincs. PE12 9YD, UK. ²PepsiCo, Beaumont Park, 4 Leycroft Road, Leicester, LE4 1ET, UK., ³Welvent Ltd, Whisby Way, Whisby Road, Lincoln, LN6 3LQ, UK., ⁴R. S. Cockerill Ltd, Stamford Bridge Rd, Dunnington, York, North Yorks, YO19 5AE, UK "A novel ventilation method for Chlorpropham application to box stored potatoes"



- **Kürt Demeulemeester¹**, Marc Goeminne² and Marie Demarcke³, ¹Inagro, department Arable Crops, Rumbeke-Beitem, Belgium. ²PCA Potato Research, Kruishoutem, Belgium¹, ³Flanders' FOOD, Brussels, Belgium "Sprout control with minimal residues in potatoes"
- A. Jina and Harry Duncan, DormFresh Limited, Perth, Scotland "Efficacy and future of 1,4-DMN in Europe"
- John A. Immaraju and Thomas E. Larsen, AMVAC Chemical Corporation, 4695 MacArthur Court, Suite 1200, Newport Beach, CA 92660, USA "Development and Commercial Launch of SmartBlock® (3-decen-2-one) in the USA. Israel and Canada"
- 10.00 Coffee and Poster session

10.30 Sprout suppression session 2. Chair Tjaart Hofman

- **Avi Nachmias,** The Center for potato research in hot climate Ltd. P.O.Box 515, Ofakim 8751401, Israel "Biox-M application in potato storage in Israel"
- Arif Sanli and Sabri Erbas, Süleyman Demirel University, Faculty of Agriculture, Field Crops
 Department, Isparta, Turkey "Foliar application of essential oil influences potato dormancy and
 tuber quality during storage"
- Richard Colgan¹, Debbie Rees¹, Glyn Harper², Adrian Briddon², Adrian Cunnington² and
 Graeme Stroud², ¹Natural Resources Institute, University of Greenwich, Medway Campus,
 Central Avenue, Chatham Maritime, Kent ME4 4TB, UK., ²Sutton Bridge Crop Storage
 Research, East Bank, Sutton Bridge, Spalding, Lincolnshire, PE12 9YD, UK "Strategies to
 improve the effectiveness of ethylene for control of sprouting and sugar metabolism in processing
 potatoes"
- Roberta Tosetti, Sofia Foukaraki, Katherine Cools and Leon A. Terry, Plant Science Laboratory, Cranfield University, Bedfordshire, MK43 OAL, UK "Alternatives to CIPC: A biochemical and physiological evaluation of ethylene and 1-MCP treatments"
- Glyn Harper, Adrian Briddon, Graeme Stroud and Adrian Cunnington, AHDB, Sutton Bridge
 Crop Storage Research, East Bank, Sutton Bridge, Spalding, Lincs. PE12 9YD, UK "Sprout
 control for processing varieties with ethylene alone or in combination with CIPC"
- Michel Martin President EAPR, ARVALIS Institut du végétal, Equipement et Conservation des Pommes de Terre,
 Chaussée Brunehaut, CS 30200 Estrees Mons,
 80208 Peronne Cedex, France, Highlights on upcoming collaborations and events
- **12.20 Wrap-up.** Glyn and Tjaart



12.30	Group	picture
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- **12.45 Depart** by bus to Campus Wageningen University
- **13.00 Lunch** in Restaurant of the future
- 13.45 Excursions
- **17.00 Return** by bus to Hof van Wageningen
- **18.45** Gather in lobby Hof van Wageningen (walk 600m)
- **19.00 Dinner** in restaurant Drinks & Bites, Markt 9, Wageningen

Poster list

- Adrian Briddon, AHDB Potatoes, UK, AHDB, Sutton Bridge Crop Storage Research, East Bank, Sutton Bridge, Spalding, Lincs. PE12 9YD, UK "Storage temperature and blackheart development during shelf life"
- Leisa Douglas¹, Gillian MacKinnon¹, Gordon Cook¹, Harry Duncan², Adrian Briddon³ and Steven Seamark³, ¹Scottish Universities Environmental Research Centre, Rankine Avenue, East Kilbride, G75 OQF, UK., ²School of Chemistry, Joseph Black Building, University of Glasgow, G12 8QQ, UK., ³AHDB Sutton Bridge Crop Storage Research, Lincolnshire, PE12 9YD, UK "The long-term persistence of CIPC in commercial potato stores"
- Glyn Harper¹, Bill Hayes², James Fothergill² and Bukola Daramola². ¹AHDB, Sutton Bridge
 Crop Storage Research, East Bank, Sutton Bridge, Spalding, Lincs. PE12 9YD, UK. ²National
 Centre for Food Manufacturing (NCFM), University of Lincoln, Minerva House. Holbeach,
 PE12 7PT, UK. "Volatile organic compounds released as a result of spoilage in potatoes"
- Glyn Harper, Lana Head and Graeme Stroud AHDB, Sutton Bridge Crop Storage Research, East Bank, Sutton Bridge, Spalding, Lincs. PE12 9YD, UK "Tuber respiration during storage"
- Pia Heltoft and Eldrid Lein Molteberg. NIBIO, Norwegian Institute of Bioeconomy Research,
 P.O. 115, NO-1431 Aas, Norway. "Potato quality during storage in cv. Asterix and Saturna:
 Effect of maturity level and ventilation strategies"
- Tjaart Hofman, Jacques Haverlant, Marie Spirlet, Christophe Corre Certis Europe B.V., P.O. Box. 1180, 3600 BD Maarssen, The Netherlands. "Imazalil; a cornerstone in seed potato disease control since more than 30 years. How about the future?"
- Mirjam Koch, Lena, Bergmann, Marcel Naumann and Elke Pawelzik. Department for Crop Sciences, working group Quality of Plant Products, University of Göttingen, Germany.
 "Impact of storage and variety on tuber shape and texture characteristics of potato tubers"
- **Steven Muir^{1,2},** Archie Gibson¹, Athina Tziboula-Clarke², John Grigor² and Ruth Falconer².



¹Agrico UK Ltd, Scotland. ²Abertay University, Dundee, Scotland. "Instrumental and cross-cultural cata/hedonic sensory evaluation of post-harvest potato cultivars."

- Arif Sanli¹, Hülya Özgönen², Tahsin Karadogan¹ and Basri Sanli¹. ¹ Süleyman Demirel University, Faculty of Agriculture, Field Crops Department, Turkey., ²Süleyman Demirel University, Faculty of Agriculture, Plant Protection Department, Turkey. "Foliar and seed application of essential oils influences Fusarium solani infection of potato tubers"
- Adrian Cunnington² and Adrian Briddon², Mike Storey¹, Alice Sin¹. Agriculture and Horticulture Development Board (AHDB), ¹Resource Management, Stoneleigh Park, Kenilworth, CV8 2TL UK & ²Sutton Bridge Crop Storage Research, Lincolnshire, PE12 9YD, UK "Adapting store management in the UK to achieve compliance with chlorpropham (CIPC) stewardship"
- Massimo Rutolo and James Covington. University of Warwick, Coventry, CV4 7AL, UK
 "Detection of Potato Storage Diseases by Gas Analysis"

Excursion Thursday

A choice must be made whether to join one of the following tours:

1. Restaurant of the future testing laboratory

A unique blend of research and practice aimed at something as common as eating and drinking. A one of a kind initiative of Wageningen UR, in cooperation with Sodexo, Noldus IT and Kampri Group. The Restaurant of the Future is not just a place to experiment with new food products, preparation methods and self-service systems, but also a facility allowing close observation of consumer eating and drinking behaviour.

2. University Library and Exhibition in Special collections from The Art of Plant Pathology. Special Collections of Wageningen UR Library holds, mainly printed, collections of rare and old books and journals, old and modern maps and atlases, nursery catalogues, garden and landscape

designs, agricultural machinery brochures, illustrations and images and (digital) aerial photographs. The current exhibition is fully related to printed material related to more than 125 years of plant pathology as part of activities at Wageningen University. In the University Library, approximately 30 kilometers of journals, books and other materials, are mainly located in stacks and quickly available on request.



Timetable Excursions on Thursday

	Restaurant of the future Ans Geerling	University Library and Exhibition in Special collections: The Art of Plant Pathology Liesbeth Missel	Food & Biobased Research Ernst Woltering Matthijs Montsma Leo Lukasse	Unifarm, Greenhouses Erik Toussaint Paul Struik
14.00-14.30	Group 1		Group 2 + 3	-
14.30-14.40	Relocate groups			
14.40-15.10	Group 2	(optional Group 2 depending on the interest)	Group 3+1	-
15.10-15.20	Relocate groups			
15.20-15.50		Group 3	Group 1+2	-
15.50-16.00	Bring all groups to Unifarm (Bornsesteeg 48)			
16.00-17.00				Group 1 + 2 + 3
17.00	Bus departure from Unifarm to bring the group back to Hof van Wageningen			



Day 4: July 1st

Optional excursion

8.00 Coaches leave from Wageningen
The trip may include a visit to box/bulk Dutch potato stores (Omnivent), the WUR-PPO
Westmaas storage research and field trial station and to Certis demonstration trials.

9.15 Mr. Peter Ippel, Nerzienweg 15, Werkendam New bulk stores build by Omnivent: holding capacities 1000 tonnes ware potatoes and 800 tonnes onions.

10.00 Departure

10.45 Mr. Schouwenaers, Zuiddijk 12 a, Langeweg 500 tonnes box store units for table potatoes, onions, cellery. CO2 extraction and drying installations.

11.30 Departure

12.00 PPO Westmaas. Sandwich lunch

12.30 Store visit. Potato storage trials using SmartBlock for sprout control. AMVAC and Certis

13.00 Field visit. Experimental farm PPO Westmaas

14.00 End of excursion

14.30 Rotterdam railway station, **or**

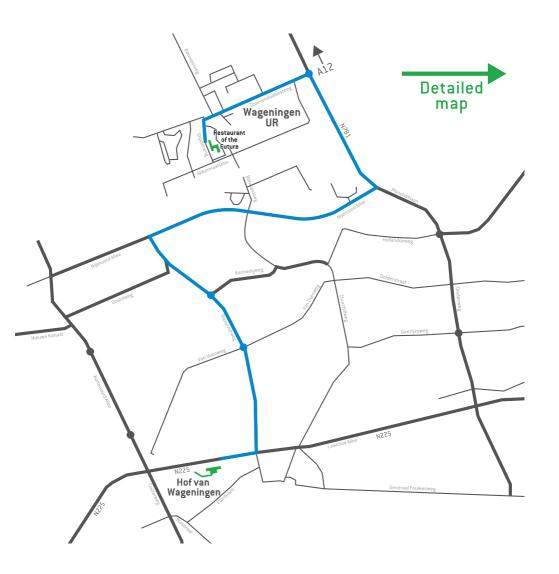
15.00 Schiphol Airport

Other arrangements can also be considered to facilitate onwards travel.





Ground plan







Participants list

First Name Last Name Insitute/Company Siaak Ahen LambWeston Meiier Ćarmen Cranfield University Alaman Jeroen Bakker leff Reever McCain Foods GB Ltd Alain Kreglinger Rerthet Tanvir Singh Bhatti Bhatti Agritech Alison Blackwell APS Biocontrol Lars Bodker Seges P/S Agro Food Bongers Aardappelen Koen Bongers AHDB Potatoes Adrian Briddon Heather Farmers Guardian/Potato Review Briggs Philip Britton Farmcare Trading Ltd Carvalho University of Greenwich Claudia James Clayton Restrain Paul Coleman Greenvale AP Richard Greenwich University Colgan Adrian Cunnington AHDB Potatoes Michiel De Vries Solvnta Sicko De Vries Wageningen University and Research Michel DeDecker Certis Europe B.V. Jaan Delleman Aardappelwereld/Potato World Kurt Demeulmeester **INAGRO** Wouter Devlies Aardappelhoeve BV Glasgow University Leisa Douglas Harry Duncan Dormfresh Brice Dupuis Agroscope NAO Nederlandse Aardappel Organisatie Maries Flemans Dani Eshel Volcani Center PPO Lelvstad - WUR loon Esselink Britta Füser Spiess-Urania **Emilie** Gauvrit Florette Jan-Fric Geersing Cebeco Agrochemie Marnix Gijlers Belchim Crop Protection Borghild Glorvigen Norwegian Agricultural Extension Service Gottschall NAO Nederlandse Aardappel Organisatie lan PerfoTec Bas Groeneweg Omnivent Nick Grubben Norbert Haase Max Ruber Institute Nigel Halford Rothamsted Harry Certis eUROPE Hansma Glvn Harper AHDB Potatoes Heltoft Norwegian Institute for Bioeconomy Research Pia Tiaart Hofman Certis Europe B.V. Alan Horgan Certis UK John Immaraju **AMVAC** Ajay Jina Dormfresh Cor Kempenaar Meiier Potato Tony Kievit **UPL** Europe Mariko Kihira Van Hall Larenstein Miriam Koch University of Gottingen Paul Kok Omnivent Kees Kristeliin HZPC. Sebastian Lafave Terre de France Max Largnier Interspack Wageningen University Storage research Leo Lukasse Johan Maelfevt Certis Europe B.V. Michel Martin Arvalis

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First Name Last Name Insitute/Company Country Vaclav Mayer Research Institute of Agricultural Engineering Czech Republic **AVIKO** Mathijs Meijer Netherlands Andreas Meijer Spiess-Urania Germany Mathiis Montsma Wageningen University Storage research Netherlands Steven Muir Agrico UK / Abertay University United Kingdom Avi Nachmias Center for potato research in hot climate Ltd Israel United Kingdom David Nelson Branston Paul O'Connor Restrain United Kingdom Nora Olsen University of Idaho USA Flke Pawelzik Georg August University Gottingen Germany Plistil Agroel, s. r. o. Czech Republic Tomasz Richard Polderdijk Meijer Potato Netherlands . Böhm Nordkartoffel Agrarproduktion Martin Rave Germany Rees United Kingdom Debbie Cranfield University Louise Rix Restrain United Kingdom Erika Roth HZPC Holland Netherlands University of Warwick Massimo Rutolo United Kingdom Sanli Suleyman Demirel University Arif Turkey Bari Sanli Suleyman Demirel University Turkey Guillaume Saubeau SASA United Kingdom Luit Scholtens Potatop Advice Holland Netherlands Leonard Shumbe University of Liege Belgium Roberta Tosetti Cranfield University United Kingdom Marion Tout University of Sheffield United Kingdom Josef Vacek Potato Research Institute, Havlickuv Brod, Ltd. Czech Republic Pim Van de Griend Certis Europe B.V. Netherlands Van den Oever Mooij Storage Technique Netherlands Hans Frank Van der Werff HZPC Netherlands Jan Van der Wolf Wageningen University Netherlands Jeroen van Kappel Mooij Storage Technique Netherlands Leo van Marion McCain Foods Netherlands Maarten van Mensvoort Intersnackgroup Netherlands Edwin Van Nieuwenhuizen Solvnta Netherlands Plant Genetics, Gembloux Agro-Bio Tech Herve Vanderschuren Belgium Daniel Veichar Research Institute of Agricultural Engineering Czech Republic Verhulst PerfoTec Netherlands Isabel Switzerland Margot Visse Agroscope John Walsh McCain North America Canada Wang University of Idaho Υi USA Dirk Weeder TopCrop Netherlands Frnst Woltering Wageningen University Storage research Netherlands Burkhard Potato Research Station Dethlingen Wulf Germany

Independent consultant

Pepsico Europe

Dept of Research and Development

Netherlands

Israel

Serbia

Wustman

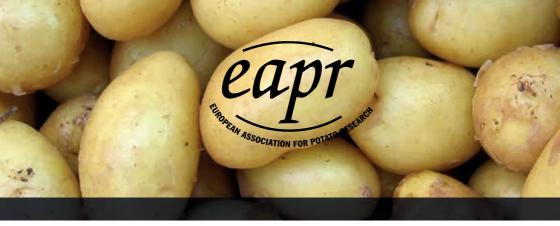
Zivkovic.

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Romke

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We thank our sponsors for supporting this EAPR Section meeting:











Conference Location

Hof van Wageningen, Centre of Wageningen Lawickse Allee 9 Wageningen, 6701 AN The Netherlands

