

International Advances in Pesticide Application 2014

to be held at The Oxford Spires Hotel on 8-10 January 2014

PROVISIONAL PROGRAMME (BASIS points have been applied for)

WEDNESDAY 8 JANUARY 2014

08:00 CONFERENCE REGISTRATON

Session 1: Precision Farming

Session Organiser: BEN MAGRI (Syngenta, Cambridge, UK)

09:20 **Variable rate spraying: digital canopy measurement for air and liquid electronic control**
J LLORENS & A LANDERS (Cornell University, NYSAES, Geneva, NY, USA)

09:40 **Canopy Density Spraying in Orchards in the Netherlands**
JEAN-MARIE MICHELSEN, ARD NIEUWENHUIZEN, JAN VAN DE ZANDE,
HEIN STALLINGA, PLEUN VAN VELDE (Wageningen UR - Plant Research International
(WUR-PRI) – Wageningen, The Netherlands) & MARCEL WENNEKER (Applied Plant
Research (PPO-fruit), Wageningen, The Netherlands)

10:00 **Orchard growth modelling for Pesticide Adjustment to the Crop Environment (PACE)**
PETER WALKLATE (PJWRC, Houghton Regis, Bedfordshire) & JERRY CROSS (East
Malling Research, East Malling, Kent)

10:20 **Spray adjustments based on LWA concept in vineyard. Relationship between canopy and coverage for different application settings**
EMILIO GIL, MONTSERRAT GALLART, JORDI LLORENS, JORDI LLOP, TANIA BAYER
& CLAUDIA CARVALHO (Universitat Politècnica de Catalunya – DEAB, Esteve Terradas,
Castelldefels (Barcelona) - Spain)

10:40 COFFEE

Session 2: Spraying

Session Organiser: TOM ROBINSON (Syngenta, Cambridge, UK)

11:10 **Small unmanned aircraft application techniques and their impacts for chemicals control in Asian rice fields**
HE XIONGKUI, LIU YAJIA, SONG JIANLI, ZENG AIJUN & ZHANG JING (China
Agricultural University, Centre for Chemicals Application Technology (CCAT), College of
Science, Beijing, China)

11:30 **Mosquito control by electrostatic spray application**
G A MATTHEWS, W MORGAN, R BATEMAN (Imperial College at Silwood Park, Ascot,
Berkshire), J S CLAYTON & M SIDES (Micron Sprayers Ltd, Bromyard, Herefordshire)

11:50 **The Varidome precision band sprayer for row crops**
JOHN CLAYTON (Micron Sprayers Ltd, Bromyard, Herefordshire)

- 12:10 **Unmanned aerial platforms for spraying: Deployment and performance**
D KEN GILES & RYAN BILLING (University of California, Davis, California, USA)
- 12:30 **Performance of knapsack sprayers on uniformity of insecticide application and on control of *Aedes aegypti* (L.) (Diptera: Culicidae)**
MARCELO C FERREIRA & RENATA P CARDOZO (Department of Crop Protection, UNESP Jaboticabal SP, Brazil)
- 12:50 LUNCH

Session 3: Dust Emissions

Session Organiser: PAUL MILLER (Silsoe Spray Applications Unit, NIAB, Silsoe, UK)

- 14:00 **Characterisation of different pneumatic sowing machines**
DIETER FOQUÉ, DAVID NUYTTENS (Institute for Agricultural and Fisheries Research (ILVO) Merelbeke, Belgium), WOUTER DEVARREWAERE, PIETER VERBOVEN (KU Leuven, Department Biosystems, MeBioS, Leuven, Belgium)
- 14:20 **Physical and chemical characteristics of abraded seed coating particles**
DIETER FOQUÉ, DAVID NUYTTENS (Institute for Agricultural and Fisheries (ILVO) Research, Merelbeke, Belgium), WOUTER DEVARREWAERE & PIETER VERBOVEN (KU Leuven, Department Biosystems, MeBioS, Leuven, Belgium)
- 14:40 **Modelling dust distribution from static pneumatic sowing machines**
WOUTER DEVARREWAERE, PIETER VERBOVEN, BART NICOLAI (KU Leuven, Department Biosystems, MeBioS, Leuven, Belgium) DIETER FOQUÉ & DAVID NUYTTENS (Institute for Agricultural and Fisheries Research Merelbeke, Belgium),
- 15:00 **Assessing dust drift from dressed seeds by air sampling**
MARCELLO BIOCCA, ROBERTO FANIGLIULO, PIETRO GALLO, DANIELE POCHI (CRA-ING, Consiglio per la Ricerca e la sperimentazione in Agricoltura. Rome, ITALY), PATRIZIO PULCINI (CRA-PAV, Consiglio per la Ricerca e la sperimentazione in Agricoltura. Rome, ITALY) & CINZIA PERRINO (CNR-IIA, Institute of Atmospheric Pollution Research, Rome, ITALY)
- 15:20 **TEA**
- 15:50 **Bayer AirWasher® and SweepAir®: technological options for mitigation of dust emissions from vacuum based maize sowing equipment**
LUBOS VRBKA, REINHARD FRIESSLEBEN, ANDREW C CHAPPLE (Bayer CropScience AG, Monheim, Germany), KARL NEUBAUER (Bayer CropScience Austria GmbH, Vienna, Austria) & ALBERTO CANTONI (Bayer CropScience srl, Milano, Italy)
- 16:10 **A novel technical solution to minimize seed dust during the sowing process of maize using vacuum based equipment: principles and an estimate of efficiency**
ANDREW CHAPPLE, LUBOS VRBKA, REINHARD FRIESSLEBEN, HEINZ-FRIEDERICH SCHNIER, ALBERTO CANTONI (Bayer CropScience AG, Monheim, Germany) & ADRIAN C ARNOLD (ACIS R&D Ltd, Tavistock, UK)

Session 4 : Formulation

Session Organiser: DAVID STOCK (Syngenta, Jealott's Hill, Berks)

- 16:30 **Improving control of the cabbage root fly with entomopathogenic nematodes**
BERT BECK (Institute for Agricultural and Fisheries Research (ILVO), Merelbeke, Belgium), PIETER SPANOGHE (Ghent University, Ghent, Belgium), MAURICE MOENS (Institute for

Agricultural and Fisheries Research (ILVO), Merelbeke, Belgium; Ghent University, Ghent, Belgium), SABIEN POLLET, FEMKE TEMMERMAN (Inagro, Rumbeke, Belgium) & DAVID NUYTENS (Institute for Agricultural and Fisheries Research (ILVO), Merelbeke, Belgium)

- 16:50 **Influence of different adjuvants on spray quality in hollow cone nozzles**
MARIO TAMAGNONE, PAOLO BALSARI, PAOLO MARUCCO & PAOLO VAI
(DiSAFA Crop Protection Technology, Università di Torino, Grugliasco (TO), Italy)
- 17:10 **Problems and their solutions exist only in our minds: TOPPS-prowadis survey in EU countries to understand how to reduce losses of Plant Protection Product (PPP) to surface water**
M ROETTELE (Better Decisions, Kandern, Germany), P BALSARI (University of Turin, DiSAFA, Grugliasco, Italy), G DORUCHOWSKI (Research Institute of Horticulture - InHort, Skierniewice, Poland), P H PETERSEN (Danish Agricultural Advisory Service, Aarhus, Denmark), E GIL MOYA (University Politecnica Catalunya, Barcelona, Spain) & L KING (BayerCropScience, Lyon, France)
- 17:30 END OF SESSION
- 19:30 DINNER

THURSDAY 9 JANUARY 2014

- 08:40 *Invited speaker*
IPM and the integration of innovative application techniques in IPM
FRANCOISE LESCOURRET (INRA, UR1115 Plants and Cropping Systems in Horticulture, Avignon, France)
- Session 5: Occupational and Bystander/Resident Exposure*
Session Organiser: RICHARD GLASS (FERA, York)
- 09:20 **Worker re-entry exposure within the framework of the BROWSE project**
KIM DOAN NGOC, PIETER SPANOGHE (University of Gent, Gent, Belgium), ERIK VAN DEN BERG (Alterra, Wageningen, The Netherlands), AGATHI CHARISTOU (Benaki Phytopathological Institute, Athens, Greece), RICHARD GLASS, ANDY HART (The Food and Environment Research Agency (Fera), York, UK), LYNN FREWER (Newcastle University, Newcastle upon Tyne), RIANDA GERRITSEN-EBBEN (TNO, Zeist, The Netherlands), CLARE BUTLER-ELLIS (Silsoe Spray Applications Unit, NIAB, Wrest Park, Silsoe, Bedford) & ETTORE CAPRI (Università Cattolica del Sacro Cuore, Piacenza, Italy)
- 09:40 **The BROWSE operator exposure models for plant protection products**
RIANDA GERRITSEN-EBBEN, HENK GOEDE, SUZANNE SPAAN, THIES OOSTERWIJK (TNO, Zeist, The Netherlands), VICTORIA ROELOFS, MARC KENNEDY, HELEN OWEN, RICHARD GLASS, DAVID SCOTT, ANDY HART (The Food and Environment Research Agency, York) AGATHI CHARISTOU, KYRIAKI MACHERA (Benaki Phytopathological Institute, Athens, Greece), RINKE KLEIN-ENTINK, JODY SCHINKEL & CLARE BUTLER-ELLIS (Silsoe Spray Applications Unit, NIAB, Wrest Park, Silsoe, Bedfordshire)
- 10:00 **Bystander and resident exposure: an Industry perspective on regulation and the potential for risk mitigation**
PETER KNOWLES & NEIL MORGAN (Syngenta Ltd, Jealotts Hill, Bracknell, Berks, UK)

- 10:20 **COFFEE**
- 10:50 **Spray drift and bystander risk from fruit crop spraying**
JAN VAN DE ZANDE (Wageningen UR - Plant Research International (WUR-PRI) Wageningen, The Netherlands), CLARE BUTLER-ELLIS (Silsoe Spray Applications Unit, NIAB, Wrest Park, Silsoe, Bedfordshire), MARCEL WENNEKER (Applied Plant Research (WUR-PPO-fruit Wageningen UR, Zetten, The Netherlands), PETER J WALKLATE (PJWRC, Dunstable Bedfordshire) & MARC KENNEDY (The Food and Environment Research, Agency, York)
- 11:10 **Bystander and Resident exposure to spray drift from orchard applications: field measurements, including a comparison of spray drift collectors**
CLARE BUTLER ELLIS, ANDREW LANE, CHRISTINE O’SULLIVAN, RAFAEL ALANIS (Silsoe Spray Applications Unit, NIAB, Wrest Park, Silsoe, Beds), ADRIAN HARRIS (East Malling Research, Kent), HEIN STALLINGA & JAN VAN DE ZANDE (Wageningen UR - Plant Research International, Wageningen, The Netherlands)
- Session 6: On target deposition*
Session Organiser: JAN VAN DE ZANDE (Plant Research International (WUR-PRI), Wageningen, The Netherlands)
- 11:30 **Emission reduction in orchards by improved spray deposition and increased spray drift reduction of multiple row sprayers**
MARCEL WENNEKER (Applied Plant Research (PPO-fruit), Wageningen UR, Zetten, The Netherlands), JAN VAN DE ZANDE, HEIN STALLINGA, JEAN MARIE MICHIELSEN, PLEUN VAN VELDE & ARD NIEUWENHUIZEN (Plant Research International (WUR-PRI), Wageningen, The Netherlands)
- 11:50 **Accuracy of a multiple mineral tracer methodology for measuring spray deposition**
D FOQUÉ, D DEKEYSER, I ZWERTVAEGHER & D NUYTTENS (Institute for Agricultural and Fisheries Research (ILVO), Merelbeke, Belgium)
- 12:10 **Angled applications of foliar acting herbicides – influence of various factors under field conditions**
PETER KRYGER JENSEN (Aarhus University, Slagelse, Denmark)
- 12:30 LUNCH
- 13:30 **Spray retention assessment combining high-speed shadow imagery and fluorescence techniques**
MATHIEU MASSINON, FRÉDÉRIC LEBEAU (University of Liege (ULg), Gembloux Agro-Bio Tech (GxABT), Gembloux, Belgium) & HASSINA BOUKHALFA (University Mohamed Khidar, Biskra, Algeria)
- 13:50 **Plant canopy characteristics affect on spray deposition**
RICHARD DERKSEN, HEPING ZHU (USDA-ARS, Application Technology Research Unit, Wooster, OH, USA), H ERDAL OZKAN (Food, Agricultural, and Biological Engineering Department, Ohio State University, Columbus, USA) & PIERCE A PAUL (Plant Pathology Department, Ohio State University, Wooster, OH, USA)
- 14:10 **Use of rotary atomiser to optimize retention on barley leaves while reducing driftable droplets**
SOFIENE OULED TALEB SALAH, MATHIEU MASSINON, FRÉDÉRIC LEBEAU, BRUNO SCHIFFERS (Gembloux Agro-Bio Tech (University of Liege), Gembloux, Belgium) & HASSINA BOUKHALFA (University Mohamed Khidar, Biskra, Algeria)

Session 7: Spray Drift

Session Organiser: COLIN MOUNTFORD-SMITH (BASF, Cheadle Hulme, UK)

- 14:30 **Spray drift of drift reducing nozzle types spraying a bare soil surface with a boom sprayer**
JAN VAN DE ZANDE JEAN-MARIE MICHELSEN, HEIN STALLINGA & PLEUN VAN VELDE (Wageningen UR - Plant Research International (WUR-PRI), Wageningen, The Netherlands)
- 14:50 **Developing a generic model for spray drift in fruit crop spraying**
HENK JAN HOLTERMAN & JAN VAN DE ZANDE (Wageningen UR - Plant Research International, Wageningen, the Netherlands)
- 15:10 **TEA**
- 15:40 **Spray drift modelling using field-measured PDI laser techniques**
A J HEWITT (Lincoln Agritech Ltd, Lincoln University, Christchurch, New Zealand; The University of Queensland, Queensland, Australia; The University of Nebraska, Nebraska, USA) & R ROTEN (Lincoln Agritech Ltd, Lincoln University, Christchurch, New Zealand)
- 16:00 **How spray characteristics and orientation may influence spray drift in a wind tunnel**
JEAN-PAUL DOUZALS & MAGID AL HEIDARY (IRSTEA – UMR ITAP, Montpellier, France)
- 16:20 **Spray drift from aerial application**
ULISSES R ANTUNIASSI, ALISSON A B MOTTA, RODOLFO G CHECHETTO, FERNANDO K CARVALHO, EDIVALDO D VELINI & CAIO A CARBONARI (FCA/ Universidade Estadual Paulista (UNESP), Botucatu/SP, Brazil)
- 16:40 **Developments in modelling spray drift: model input data and air flows within the spray plume**
CLARE BUTLER ELLIS & CLIVE TUCK (Silsoe Spray Applications Unit, NIAB, Silsoe, UK)
- 17:00 **Comparison between drift test bench results and other drift assessment techniques**
D NUYTTENS, I ZWERTVAEGHER & D DEKEYSER (Institute for Agricultural and Fisheries Research (ILVO), Merelbeke, Belgium)

Session 8: Posters

- 17:30 **Session Organisers: (PHIL CARPENTER, BILL TAYLOR, BILL JONES PER GUMMER ANDERSON)**

Control of *Diaphorina citri* and selectivity to *Pentilia egena* by insecticides applied at ultra-low volume (ULV) on citrus orchards

MARCELO C FERREIRA & JOSÉ L SILVA (Universidade Estadual Paulista (UNESP), Jaboticabal SP, Brazil)

Pesticide application data to inform risk assessment of non-dietary cumulative exposure to plant protection products

RICHARD GLASS, DAVID GARTHWAITE (The Food and Environment Research Agency, York, UK), ANGELA SACCHI (Istituto di Chimica Agraria ed Ambientale of the Agriculture, (UCSC), Piacenza, Italy), PIETER SPANOGHE, KIM DOAN NGOC (Ghent University, Ghent, Belgium), KYRIAKI MACHERA, DIMITRA NIKOLOPOULOU, NIKI ARAPAKI (Benaki Phytopathological Institute, Athens, Greece),

RIANDA GERRITSEN-EBBEN, SUZANNE SPAAN (TNO, Zeist, The Netherlands), FRANCISCO EGEA GONZÁLEZ ((BITAL) Universidad de Almeria, Almeria, Spain) & STANISLAW STOBIECKI(IOR - Plant Protection Institute - Sosnicowice Branch, Poland)

Spray drift and spray distribution of end nozzles

HEIN STALLINGA, JAN VAN DE ZANDE, JEAN-MARIE MICHELSEN & PLEUN VAN VELDE (Wageningen UR - Plant Research International (WUR-PRI), Wageningen, The Netherlands)

Vector Control - Training

GRAHAM MATTHEWS (Imperial College at Silwood Park, Ascot, Berkshire)

Problems with determination of spraying characteristics (a review)

ZBIGNIEW CZACZYK (Poznań University of Life Sciences, Institute of Biosystems Engineering, Poznań, Poland) BRADLEY K FRITZ & WESLEY C HOFFMANN (USDA, TX, USA)

A novel device for the variable rate application of liquid fertilizer ‘Trident’

M BRADY, R S GODDARD & S KATELEY (Billericay Farm Services Ltd. Downham, Billericay, Essex)

Relationship among variables of sprays applied at reduced volumes in coffee plantation

SERGIO TADEU DECARO JUNIOR, MARCELO DA COSTA FERREIRA, OLINTO LASMAR, HENRIQUE BORGES NEVES CAMPOS (Universidade Estadual Paulista, Department of Fitossanidade, Jaboticabal, Sao Paulo State, Brazil)

Pesticide Dermal Transfer through Contact with Sprayed Hard Surfaces to Operators & Agricultural Workers

RICHARD GLASS (FERA, York, UK), ANGELOS TSAKIRAKIS, KONSTANTINOS KASIOTIS, PELAGIA ANASTASIADOU, AGATHI CHARISTOU, KYRIAKI MACHERA (BPI, Athens, Greece) & RIANDA GERRITSEN-EBBEN (TNO, Zeist, the Netherlands)

Effect of herbicides associated with adjuvants in surface tension and contact angle in leaves of *Ipomoea hederifolia*

RICARDO A CALORE, MARCELO C FERREIRA, NARA E L RODRIGUES & ALESSANDRA K OTUKA (São Paulo State University, Faculty of Agriculture and Veterinary Science, Jaboticabal–SP, Brazil)

Control of citrus black spots and juice quality after fungicide spraying in contrasting water volumes

GIORGE F G CARVALHO, MARCELO C FERREIRA & OLINTO LASMAR (São Paulo State University, Department of Phytosanitary, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, São Paulo, Brazil)

Mite control in orange fruit after spraying acaricides in mixture with leaf fertilizers

GIORGE F G CARVALHO, MARCELO C FERREIRA, JOSÉ RICARDO LORENÇON & JULIANA SAKOMURA (São Paulo State University, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, São Paulo, Brazil)

Droplet size of pneumatic spraying nozzles used for the control of coffee pests

OLINTO LASMAR, MARCELO C FERREIRA, SERGIO T DECARO JUNIOR & JOSÉ R LORENÇON (São Paulo State University, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, SP - Brazil)

Advanced technologies for pesticides application in date palm trees

ABRAHAM GAMLIEL, YEHUDIT RIVEN, BRACHA STEINER, (Laboratory for Pest Management Research, Institute of Agricultural Engineering, ARO, Volcani Center, Bet Dagan Israel) & SVETLANA DOBRININ (Ministry of Agriculture, Extension Service, Beer Sheeva, Israel)

Training system dependent optimization of air assistance and nozzle type for orchard spraying by CFD modeling

ASHENAFI T DUGA, THIJS DEFRAEYE, BART NICOLAI (University of Leuven, Department of Biosystems, Leuven, Belgium), DONALD DEKEYSER, DAVID NUYTTENS (Institute for Agricultural and Fisheries Research (ILVO) - Technology and Food Science Unit - Agricultural Engineering, Merelbeke, Belgium), DANNY BYLEMANS (Research Station for Fruit Growing (PCFruit), Department of Ecology, Sint-Truiden, Belgium) & PIETER VERBOVEN (University of Leuven, Department of Biosystems, Leuven, Belgium)

The Visualization Method Research of Nozzle Atomization and Droplet Deposition Process

XIONGKUI HE, JIANLI SONG WENJUN ZHANG, CHEN XIE, XIWA YANG (China Agricultural University, Centre for Chemical Application Technology (CCAT), College of Science, Beijing, China) & ANDREAS HERBST (Julius-Kühn-Institut, Institute for Chemical Application Technology of JKI, Braunschweig, Germany)

18:30 END OF POSTER SESSION

19:30 CONFERENCE DINNER

FRIDAY 10 JANUARY

Session 9: Fruit

Session Organiser: PAOLO BALSARI (University of Turin - DiSAFA Crop Protection Technology, Grugliasco (TO) – Italy)

- 09:00 **First assessment of hollow cone nozzles spray patterns and their effects on orchard sprayer distribution profile**
MARIO TAMAGNONE, PAOLO BALSARI, PAOLO MARUCCO & SIMONE SAVOIA (Università di Torino - DiSAFA Crop Protection Technology, Grugliasco (TO) – Italy)
- 09:20 **Development of a self propelled air assisted sprayer for transplants on raised-tables in nursery greenhouse**
ABRAHAM GAMLIEL, YEHUDIT RIVEN, BRACHA STEINER (Laboratory for Pest Management Research, Institute of Agricultural Engineering, ARO, Volcani Center, Bet Dagan, Israel) & EYAL KLEIN (Hishtil Nurseries, Nehalim, Israel)
- 09:40 **Modeling airflow around branches and leaves using fluid-structure interaction simulations**
ASHENAFI T DUGA, THIJS DEFRAEYE, BART NICOLAI & PIETER VERBOVEN (University of Leuven, Department of Biosystems, MeBioS, Leuven, Belgium)
- 10:00 **Efforts to reduce the pollution of soil and water from pesticide use in greenhouse crops**
KLARA LÖFKVIST (JTI – Swedish Institute of Agricultural and Environmental Engineering, Lund, Sweden) TORBJÖRN HANSSON (Grön Kompetens AB, Alnarp, Sweden) & SVEN AXEL SVENSSON (Private consultant, Simrishamn, Sweden)
- 10:20 **The droplet size distributions from different designs of hollow cone nozzle operating in an air flow**
PAUL MILLER, CLIVE TUCK, CLARE BUTLER ELLIS (Silsoe Spray Applications Unit, NIAB, Silsoe, Bedfordshire) and ANDREW CHAPPLE (Bayer CropScience AG, Monheim, Germany)
- 10:40 COFFEE

Session 10: Spray Physics

Session Organiser: SIMON COOPER (Harper Adams University, Newport, UK)

- 11:10 **Study and development of a test methodology to assess potential drift generated by air-assisted sprayers**
PAOLO BALSARI, PAOLO MARUCCO, CLAUDIO BOZZER, MARIO TAMAGNONE
(Università di Torino - DiSAFA Crop Protection Technology, Grugliasco (TO), Italy), EMILIO GIL MONTSERRAT GALLART & JORDI LLOP (Politechnic University of Catalonia – DEAB, Esteve Terradas, Castelldefels, Barcelona, Spain)
- 11:30 **Studies on drift potential from nozzles with angular spray fans**
ANDREAS HERBST & HANS-JOACHIM WEHMANN (Julius-Kühn-Institut – Federal Research Institute for Cultivated Plants, Institute for Application Techniques in Crop Protection, Braunschweig, Germany)
- 11:50 **Spray nozzle characterization using a backlighting high speed imaging technique**
SOFIJA VULGARAKIS MINOV (Institute for Agricultural and Fisheries Research (ILVO), Merelbeke, Belgium; AgroSup, Dijon, Dijon cedex, France), JURGEN VANGEYTE, DAVID NUYTENS (Institute for Agricultural and Fisheries Research (ILVO), Merelbeke, Belgium), FREDERIC COINTAULT (AgroSup, Dijon, Dijon cedex, France) & JAN G PIETERS (Department of Biosystems Engineering, Faculty of Bioscience Engineering, Ghent University, Belgium)
- 12:10 **Agricultural spray measurement by high-speed shadow imagery**
NICOLAS DECOCK, MATHIEU MASSINON & FRÉDÉRIC LEBEAU
(University of Liege, Gembloux Agro-Bio Tech (GxABT), Gembloux, Belgium)
- 12:30 **Correlation between drift and droplet spectra generated by flat fan nozzles**
ULISSES R ANTUNIASSI, ALISSON A B MOTTA, RODOLFO G CHECHETTO, FERNANDO K CARVALHO, MARCELLA G DE JESUS & ULISSES D GANDOLFO
(Department of Rural Engineering, College of Agricultural Sciences (FCA), UNESP, Botucatu, Brazil)
- 12:50 **Analysis of Nigrosin and BSF spot sprays with PDPA drop size measurements**
TIM GROOT, PLEUN VAN VELDE, HEIN STALLINGA & JAN VAN DE ZANDE
(Wageningen UR - Plant Research International (WUR-PRI), Wageningen, The Netherlands)
- 13:10 LUNCH
- 14:30 FINISH & DEPART

