

# IV International Symposium on Postharvest Pathology

28 May – 3 June 2017

Skukuza, Kruger National Park, South Africa



[www.postharvest2017.co.za](http://www.postharvest2017.co.za)

## 4<sup>th</sup> INTERNATIONAL SYMPOSIUM ON POSTHARVEST PATHOLOGY

**DAY 1: SUNDAY, 28<sup>TH</sup> MAY 2017**

**16:00 - 18:00** REGISTRATION, SUNSET COCKTAILS, GREETINGS AND NETWORKING  
RESTAURANT DINNER

Department of Science and Technology (DST) / National  
Research Foundation (NRF) Centre of Excellence Food Security

Prof. Frans Swanepoel  
*Future Africa and Food Security*

**DAY 2: MONDAY, 29<sup>TH</sup> MAY 2017**

**07:30** Registration: Loading Presentations and Poster Mounting for Session 1 and 2

<b>08:00</b>	<b>Welcome &amp; Introduction to the Symposium</b>	Prof. Lise Korsten	<b>Convenor of the Symposium</b> Co-Director DST/NRF Centre of Excellence Food Security, University of Pretoria, South Africa
<b>08:10</b>	<b>A message from the ISHS</b>	Prof. Chris Watkins	<b>Chair of the International Society for Horticultural Science (ISHS) Commission Quality and Postharvest Horticulture.</b>
<b>08:20</b>	<b>A Message from the Chair of the ISPP Postharvest Pathology Committee</b>	Prof. Samir Droby	<b>Chair of the International Society for Plant Pathology (ISPP) , Postharvest Pathology Committee:</b> <b>Objectives of the Committee and targets for the ICPP in Boston 2018</b>

**THEME 1: ELUCIDATION OF HOST-PATHOGEN INTERACTIONS AND EPIDEMIOLOGY**

<b>SESSION CHAIR:</b>		<b>Prof. Antonio Ippolito</b>	<b>Previous Convener of the 3<sup>rd</sup> International Postharvest Pathology Symposium, Bari, Italy Session Chair</b>
<b>08:30</b>	<b>Invited Session Speaker 22</b>	<b>Prof. Dov Prusky</b>	Carbon regulation of environmental pH by secreted small molecule effectors modulates pathogenicity of fungi in ripening fruits
09:00	<b>Invited Oral Presentation 110</b>	<b>Dr Rosario Torres</b>	Exploring new pathways in the host response of apples and citrus fruit against <i>Penicillium</i> spp.
09:20	54	<b>Dr Yang Bi</b>	Biochemical and mitochondria proteomic evidences on sodium silicate regulates energy metabolism and ROS production during induced resistance of muskmelon
09:35	19	<b>Dr Noam Alkan</b>	Increased anthocyanin in mango fruit peel are associated with cold and pathogen resistance
09:50	<b>Poster session 1</b>	<b>Two Selected Posters</b>	<b>Four min Flash Presentations: Epidemiology</b>
	57	<b>Mr Pieter Louw</b>	Host-pathogen interaction of <i>Penicillium</i> spp. on stone fruit
	53	<b>Ms Elritha Venter</b>	A post-harvest disease survey on <i>Punica granatum</i> fruit in South Africa
10:00	<b>Session Discussion</b>	<b>Prof. Antonio Ippolito</b>	<b>Concluding remarks</b>
10:20	<b>REFRESHMENTS</b>	<b>NETWORKING</b>	
11:00	<b>Invited Session Speaker 100</b>	<b>Prof. Samir Droby</b>	Perspectives and challenges of microbial application for postharvest disease management
11:30	<b>Invited Oral Presentation 52</b>	<b>Prof. Gianfranco Romanazzi</b>	Induced resistance as a sustainable tool to control postharvest diseases of fruit and vegetables
11:50	63	<b>Dr Kerry Everett</b>	Infection timing for <i>Colletotrichum acutatum</i> and <i>Phomopsis</i> species causing postharvest rots of avocado in New Zealand
12:05	93	<b>Dr Ida Wilson</b>	The prevalence of <i>Botrytis cinerea</i> in plum and weed tissue: An investigation to elucidate pathogen ecology, for new decay control strategies
12:20	<b>Session Discussion</b>	<b>Prof. Antonio Ippolito</b>	<b>Concluding remarks</b>
12:30	<b>LUNCH</b>	<b>NETWORKING</b>	
13:20	<b>Poster Session 1</b>		<b>Host Pathogen Interactions</b>
<b>THEME 2: MOLECULAR STUDIES OF POSTHARVEST PATHOGENS</b>			
<b>SESSION CHAIR 13:55</b>		<b>Prof. Gabriele Berg</b>	Institute of Environmental Biotechnology, Graz University of Technology, Graz, Austria
14:00	<b>Invited Oral</b>	<b>Prof. Josep Usall</b>	Development and application of a combined methodology based on propidium monoazide

	<b>Presentation 62</b>		with real-time PCR to quantify viable conidia of <i>Monilinia fructicola</i> in stone fruit
14:20	99	<b>Dr Michael Wisniewski</b>	Identification of quantitative trait loci controlling resistance to <i>Penicillium expansum</i> in <i>Malus sieversii</i>
14:35	98	<b>Prof. Samir Droby</b>	Discovery and characterisation of NLP effector family genes in <i>Penicillium expansum</i> and <i>Penicillium digitatum</i>
14:50	76	<b>Dr Luis González-Candelas</b>	Obtention and characterization of a <i>Penicillium digitatum</i> non-ethylene producer knockout mutant
15:05	<b>Poster Session 2</b>	<b>Two Selected Posters</b>	<b>Four min Flash Presentations: Molecular studies in postharvest pathology</b>
	95	<b>Ms Patricia Carmichael</b>	Detection and quantification of <i>Botrytis cinerea</i> on table grapes at preharvest using ddPCR
	40	<b>Mr Charles Stevens</b>	Baseline sensitivity and molecular identification of <i>Galactomyces citri-aurantii</i>
15:15	<b>Discussions</b>	<b>Prof. Gabriele Berg</b>	<b>Concluding remarks</b>
15:25 15:35	<b>Prof. Antonio Ippolito Prof. Gabriele Berg</b>	<b>Summarising the highlights of the Day Key Take Home Message</b>	
<b>15:40</b>	<b>Remove all posters from Session 1</b>		
<b>16:15</b>	<b>Last vehicle departs @16:30!! GAME DRIVE &amp; African Meal in the BUSH!!</b>		
<b>DAY 3: TUESDAY, 30<sup>TH</sup> MAY 2017</b>			
<b>7h30</b>	<b>Loading Presentations and Poster Mounting for Session 3</b>		
<b>THEME 3: ALTERNATIVE POSTHARVEST DISEASE CONTROL TECHNOLOGIES</b>			
<b>SESSION CHAIR 07:55</b>		<b>Prof. Gianfranco Romanazzi</b>	Marche Polytechnic University, Italy
08:00	<b>Symposium Matters of the day Organisers</b>	<b>Prof. Cheryl Lennox</b>	Stellenbosch University, South Africa
08:10	<b>Invited Session Speaker 112</b>	<b>Prof. Dharini Sivakumar</b>	Use of elicitors as a postharvest tool to reduce decay during marketing
08:40	101	<b>Prof. Gabriele Berg</b>	The role of microbial volatiles in plant protection
09:10	89	<b>Prof. Davide Spadaro</b>	Essential oils to control postharvest diseases of apples and peaches: elucidation of the mechanism of action

09:25	32	<b>Dr Nikolaos Tzortzakis</b>	Postharvest grey mould development suppressed by <i>Origanum dictamnus</i> oil vapours in tomato, pepper and eggplant fruit
09:40	38	<b>Dr Malick Bill</b>	The effect of thyme oil vapours exposure on defence mechanisms for the control of anthracnose in avocados ( <i>Persea americana</i> Mill.)
09:55	<b>Session Discussion</b>	<b>Prof. Gianfranco Romanazzi</b>	<b>Concluding remarks</b>
10:20	<b>REFRESHMENTS</b>	<b>NETWORKING</b>	
10:50	108	<b>Prof. Haissam M. Jijakli</b>	Potential uses of lactoperoxidase against post-harvest diseases on fruits
11:05	50	<b>Dr Lluís Palou</b>	Curative activity against citrus postharvest green mold of composite hydroxypropyl methylcellulose-beeswax edible coatings with zeolites containing Ag-nanoparticles
11:20	37	<b>Ms Chinelo Obianom</b>	Effect of Chitosan-based natural product (chitoplant) on the major postharvest diseases and the defence related enzymes in avocado
11:35	15	<b>Dr Kirsty Bayliss</b>	Plasma activated water; an indirect method of cold plasma application for the control of <i>Colletotrichum</i> species associated with anthracnose of avocado
11:50	36	<b>Prof. Kim Clarke</b>	<i>Bacillus</i> lipopeptides for a novel postharvest disease control technology
12:05	82	<b>Dr Justyna Wieczynska</b>	Development of active packaging solutions with natural antimicrobial compounds for organic leafy greens
12:20	<b>Session Discussion</b>	<b>Prof. Gianfranco Romanazzi</b>	<b>Discussion and concluding remarks</b>
12:40	<b>LUNCH</b>	<b>NETWORKING</b>	
13:20	<b>Poster Session 2</b>		<b>Alternative disease control strategies</b>
<b>THEME 4: INNOVATION IN POSTHARVEST DISEASE CONTROL</b>			
<b>SESSION CHAIR 14:15</b>		<b>Dr Mduduzi Ngcobo</b>	Research Team Manager at the Agricultural Research Council, South Africa
14:20	<b>Invited Oral Presentation 64</b>	<b>Prof. Jose Luis Henriquez</b>	Effect of a postharvest treatment with natural fungicides on the epiphytic populations of <i>Geotrichum candidum</i> on nectarines
14:40	113	<b>Prof. Leonardo Schena</b>	Efficacy and mechanisms of action of a pomegranate peel extract in controlling postharvest citrus rots
14:55	81	<b>Prof. Antonio Ippolito</b>	Pre- and postharvest alternative approaches to control <i>Alternaria</i> brown spot of citrus
15:10	60	<b>Dr Teresa Lafuente</b>	Abscisic acid in the susceptibility of citrus fruit to <i>Penicillium digitatum</i> infection. Implication in the LED Blue light-induced reduction of postharvest decay
15:25	<b>REFRESHMENTS</b>	<b>NETWORKING</b>	

16:05	71	<b>Dr Neus Teixidó</b>	Novel film forming formulations for <i>Candida sake</i> CPA-1 to improve their biocontrol efficacy on grapes
16:20	104	<b>Dr Arno Erasmus</b>	Imazalil resistance management for sustainable citrus green mould control: limited options and alternatives
16:35	16	<b>Dr Yong-Ki Kim</b>	BioSpectra 100SC: A new biorational fungicide to control postharvest diseases of fruits
16:50	<b>Session Discussion</b>	<b>Dr Mduduzi Ngcobo</b>	<b>Concluding remarks</b>
17:00	<b>Prof. Gianfranco Romanazzi</b> <b>Dr. Mduduzi Ngcobo</b>	<b>Summarising the highlights of the day</b>	
		<b>Key Take Home Message</b>	
17:15	<b>Remove all posters session 2-3</b>	<b>Relax, bird watching or walk around the camp</b>	
<b>19:00</b>	<b>POTJIEKOS DINNER IN THE BOMA</b>		

### DAY 4: WEDNESDAY 31 MAY 2017

**7h30** Loading Presentations and Poster Mounting for Session 4

#### THEME 5: NEXT GENERATION TECHNOLOGIES FOR REAL-TIME SOLUTIONS

<b>SESSION CHAIR</b>		<b>Dr Michael Wisniewski</b>	West Virginia, USDA
<b>07:55</b>			
08:00	<b>Symposium issues for the day</b>	<b>Prof. Dharini Sivakumar</b>	Tshwane University of Technology, Pretoria, SA
08:10	<b>Invited Session Speaker</b> 21	<b>Dr Zhanquan Zhang</b>	The MADS-Box transcription factor Bcmads1 is involved in sclerotia production and pathogenicity of <i>Botrytis cinerea</i>
08:40	78	<b>Dr Andreas Bühlmann</b>	A metagenomic approach to assess <i>Neofabraea</i> infection and dynamics on stored apples
08:55	<b>Selected Posters Session 2</b>	<b>Two Posters</b>	<b>Four min Flash Presentations:</b> <b>Molecular studies in Postharvest pathology</b>
	79	<b>Dr Andreas Bühlmann</b>	Nanopore sequencing of the genome of a soil isolate of <i>Metschnikowia pulcherrima</i>
	24	<b>Ms Alicia Pretorius</b>	Evaluation of PCR-RFLP to distinguish between FGSC members occurring on South African maize
09:05	<b>Overview 119</b>	<b>Dr Michael Wisniewski</b>	Short overview of emerging trends in postharvest technology

09:20	<b>REFRESHMENTS</b>		<b>NETWORKING</b>
10:00	<b>Invited Oral Presentation 74</b>	<b>Dr Luis González-Candelas</b>	Role of proteases and iron metabolism on the virulence of <i>Penicillium digitatum</i>
10:20	2	<b>Mr Davide Sardella</b>	Optimizing protocols to assess the efficacy of nanoparticles as antifungal agents
10:35	18	<b>Dr Achour Amiri</b>	Prevalence and distribution of <i>Penicillium</i> sp. and <i>Botrytis cinerea</i> in apple packinghouses across Washington State and their sensitivity to the postharvest fungicide-pyrimethanil
10:50	<b>Dr Michael Wisniewski</b>		<b>Open Floor Discussion</b> regarding Novel Technologies
11:15	<b>Poster Session 4</b>		<b>Introducing posters Innovation in postharvest disease control strategies</b>
12:00	<b>LUNCH</b>		<b>NETWORKING</b>
<b>THEME 6: INDUSTRY PERSPECTIVE AND NEEDS</b>			
<b>SESSION CHAIR 12:55</b>		<b>Dr Johan Fourie</b>	Experico, Stellenbosch, South Africa
<b>13:00</b>	<b>Invited Session Speaker 94</b>	<b>Prof. Paul Fourie</b>	Optimisation of postharvest fungicide application in citrus packhouses: Low-tech but high impact
13:30	<b>Invited Oral Presentation 120</b>	<b>Dr Mduduzi Ngcobo</b>	Optimised packaging, cold chain management and containerisation using air modelling Title to confirm
13:50	59	<b>Dr Marcel Wenneker</b>	New and emerging postharvest diseases in pome fruit in the Netherlands
14:05	61	<b>Dr Luiz Argenta</b>	Postharvest losses of apples by fungal decay and physiological disorders in southern Brazil
14:20	80	<b>Mr Bastien Barral</b>	Diagnostic survey on the occurrence of pineapple fruitlet core rot in Réunion Island
14:35	97	<b>Dr Wilma du Plooy</b>	Complex and emerging challenges facing citrus postharvest pathology
14:50	<b>Selected Posters from Session 4</b>	<b>Two Posters</b>	<b>Four min Flash Presentations:</b> Innovation in postharvest disease control
	68	<b>Prof. Yongcai Li</b>	Exogenous polyamines improve disease resistance to black spot in apricot fruit
	105	<b>Dr Julia Meitz-Hopkins</b>	Postharvest fungicide sensitivity of South African <i>Botrytis cinerea</i> isolates causing grey mould on pears
15:00 15:10	<b>Dr Michael Wisniewski Dr Johan Fourie</b>	<b>Summarising highlights of the day Key Take Home Message</b>	
15:15	<b>Remove all posters Session 1 - 4</b>		

16:00	Late afternoon game drive	Own arrangements with UP Bus
18:00	"BRAAI" IN THE BOMA	
<b>DAY 5: THURSDAY, 1<sup>ST</sup> JUNE 2017</b>		
05:45 <b>Depart 06:00!!</b>	Early departure and Game viewing on way to Malelane Gate	
	FULL DAY FARM AND PACKHOUSE VISITS	
18:00	Back in the Kruger Park via Kruger Gate	
19:00	GALA DINNER	WINE SPONSORED by CITROSOL
<b>DAY 6: FRIDAY, 2ND JUNE 2017</b>		
<b>07:30</b>	Loading Presentations and Poster Mounting: Sessions 3 and 5	
<b>THEME 7: DISEASE CONTROL IN THE POSTHARVEST ENVIRONMENT</b>		
<b>SESSION CHAIR 07:55</b>	<b>Prof. Paul Fourie</b>	Stellenbosch University, South Africa
08:00	<b>Symposium day arrangements</b>	<b>Prof. Lise Korsten</b>
08:10	<b>Invited Session Speaker 114</b>	<b>Dr Joseph Smilanick</b> Effective use of disinfectants in a postharvest environment
08:40	<b>Invited Oral Presentation 83</b>	<b>Prof. Antonio Ippolito</b> Postharvest application of disinfecting agents for controlling fruit and vegetable diseases: a brief review
09:00	111	<b>Dr Mohammad Mahdi Jowkar</b> Effect of nano silver particle, aluminum sulfate and hydroxyquinoline citrate on vase solution microbial contamination and postharvest properties of <i>Alstroemeria</i> cv. 'Vanilla'
09:15	8	<b>Prof. Mehdi Hosseini Farahi</b> Effects of putrescine, acetic acid and hot water treatments on quality and shelf-life of apricot fruit
09:30	31	<b>Mr Juan Cristobal Arroyo</b> Evaluation of the efficacy of the bio-fungicide Timorex Gold in the control of anthracnose ( <i>Colletotrichum gloeosporioides</i> ) in avocados cv 'Hass', Cabildo, Valparaiso Region, Chile
09:45	39	<b>Mr Lindo Mamba</b> Citrus sour rot management by propiconazole drench application

10:00	<b>Selected Posters Session 3</b>	<b>Two Posters</b>	<b>Four min Flash Presentations: Alternative postharvest disease control technologies</b>
	48	<b>Ms Kathryn Fiedler</b>	Characterization and comparison of fungicide sensitivity of postharvest <i>Geotrichum candidum</i> isolates from the Eastern Shore of Virginia
	103	<b>Ms Catherine Savage</b>	Sanitisation of fungicide drench solution and effects on green mould and sour rot control
10:10	<b>Session Discussion</b>	<b>Prof. Paul Fourie</b>	Concluding Remarks
10:20	<b>Refreshments</b>		Networking
<b>THEME 8: THE MICROBIOME IN FOOD HEALTH AND DISEASE</b>			
<b>SESSION CHAIR</b>		<b>Prof. Samir Droby</b>	Volcani Institute, Israel
11:00	<b>Invited Session Speaker 92</b>	<b>Prof. Gabriele Berg</b>	From seeds to postharvest: The impact of the plant microbiomes on health
11:30	<b>Invited Oral Presentation 102</b>	<b>Dr Michael Wisniewski</b>	Fruits and Shoots! Exploring the microbiome of the apple
11:50	<b>Convenors selected Young Scientist 20</b>	<b>Dr Noam Alkan</b>	Postharvest microbiota dynamics of mango fruit stem-end in response to light, temperature and during storage
12:10	109	<b>Prof Prof. Haissam M. Jijakli</b>	Preliminary study of the interactions between the apple microbiota and <i>Pichia anomala</i> strain K, a biocontrol yeast against wound diseases of postharvest apples
12:25	<b>Discussion</b>	<b>Prof. Samir Droby</b>	<b>Microbiomes in the postharvest context</b>
13:00	<b>Lunch</b>	<b>Poster viewing Session 5</b>	
<b>THEME 9: POSTHARVEST FOOD SAFETY</b>			
<b>SESSION CHAIR</b>		<b>Dr Josep Usall</b>	IRTA, Lleida, Catalonia
14:00	121	<b>Prof. Lise Korsten</b>	Fresh produce safety in the postharvest perspective
14:15	122	<b>Dr Erika du Plessis</b>	Source tracking in the fresh produce supply chain
14:30	<b>Kecha Pucha</b>	<b>Poster Presentations Session 5</b>	<b>Food safety Flash Presentations:</b>
	55	<b>Dr Stacey Duvenage</b>	Assessment of foodborne pathogen presence in the peach supply chain
	85	<b>Mrs Charlene Coetzee</b>	Bacterial dynamics and the prevalence of foodborne pathogens associated with the avocado fruit, <i>Persea americana</i> Mill
	41	<b>Ms Tintswalo Baloyi</b>	Prevalance of foodborne pathogens on fresh produce from informal retailers in Tembisa, South Africa
	34	<b>Dr Antonios Chrysargyris</b>	Assessment of mint and pomegranate extracts/oils as antimicrobial agents to inhibit growth



			of <i>Escherichia coli</i> O157:H7 and <i>Listeria monocytogenes</i> on shredded carrots
14:50	Discussion	Dr Josep Usall	Brief Discussion and Concluding the Food Safety Session
15:05	Prof. Samir Droby	Summarising the highlights of the Symposium	
15:20	Prof. Antonio Ippolito	Key Take Home Message	Remove all Posters
15:25	<b>SYMPOSIUM CLOSING REMARKS</b>	Prof. Lise Korsten	Prize for the ISHS Best Paper Prize for the ISHS Best Poster
15:30	<b>BOARD MEETING</b>		Rest of attendants: Game Drive - Book with UP/ Park
<b>19:00</b>	<b>Dinner in the Restaurant</b>		Final sunset drinks at 18:00

**DAY 6: SATURDAY, 3RD JUNE 2017**

**DEPARTURE / OTHER OPTIONS**

**Departure Flights to the Cape for Postharvest Symposium tour**