VII Postharvest Unlimited Congress

Abstract book

DAY 1 - 15 May	8.30 - 8.45	Opening		
	8.45- 9.15	Keynote Toine Timmermans		
	9.15 - 10.00	Keynote Ernst Woltering		
	10.00 - 10.30	Coffee & poster viewing		
	10.30 - 12.00	Plenary session: Thijs Defraeye, Rick van de Zedde, Bart Nicolai		
	12.00-13.30	Lunch & poster session 1		
		Podium	**Momentum 2-3**	**Momentum 1**
	13.30 - 15.00	PHU session 1a Invited: Pedreschi	PHU session 1b	PHO session 1 Invited: Çelikel
		Physiology 1	Postharvest Pathogens 1	
	15.00 - 15.45	Coffee & poster viewing		
	15.45 - 17.15	PHU session 2a Invited: Mishra	PHU session 2b	PHO session 2 Invited: Fanourakis
		Quality Measurements 1	Storage and technology 1	
DAY 2 - 16 May	9.00 - 10.15	PHU session 3a Invited Bovy	PHU session 3b	PHO session 3 Invited: Arens
		Preharvest conditions 1	Sensory & nutrition	
	10.15 - 11.00	Coffee & poster viewing		
	11.00 - 12.15	PHU session 4a Invited: Lukasse	PHU session 4b	PHO session 4
		Logistics and modelling	Pre-harvest treatments 1	
	12.15 - 14.00	Lunch & poster session 2 & business meeting Ornamentals (momentum 1)		
	14.00 - 15.30	PHU session 5a	PHU session 5b	PHO session 5 Invited: Verdonk
		Quality Measurements 2	Physiology 2	
	15.30 - 17.00	Excursion NPEC/Phenomea/Unifarm	Excursion NPEC/Phenomea/Unifarm	Excursion NPEC/Phenomea/Unifarm
	19.00 - 22.30	Conference dinner, WICC		
DAY 3 - 17 May	9.00 - 10.30	PHU session 6a Invited: Farneti	PHU session 6b	PHU session 6c
		Physiology 3	Preharvest conditions 2	Postharvest Pathogens 2
	10.30 - 11.00	Coffee & poster viewing		
	11.00 - 12.30	PHU session 7a	PHU session 7b	PHU session 7c
		Quality Measurements 3	Postharvest treatments 1	Chilling and disorders 1
	12.30 - 14.00	Lunch & poster session 3 & business meeting Unlimited (momentum 2-3)		
	14.00 - 15.00	PHU session 8a	PHU session 8b	PHU session 8c
		Chilling and disorders 2	Packaging and coating 1	Storage and technology 2
	15.00 - 15.30	Coffee & poster viewing		
	15.30 - 16.30	PHU session 9a	PHU session 9b	PHU session 9c
		Packaging and coating 2	Postharvest treatments 2	Storage and technology 3
	16.30 - 17.00	Closing ceremony		
	17.00 - 18.00	Farewell drinks, Restaurant Omnia		

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ISHS International Conference
14-18 May 2023 - Wageningen, NL

XII Postharvest Ornamentals
ISHS International Symposium
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Session: PHU9c-3

The effect of static and dynamic low oxygen regimes during postharvest storage on ‘Granny Smith’ apple is disclosed by transcriptome and metabolic surveys

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Abstract

Apple is subjected to long-term cold storage to preserve its quality features and to ensure a year-round availability on the market . The most common strategy employed to delay the ripening progression is based on the use of low temperature, that, interfering with the normal fruit physiology can trigger the development of serious chilling injury type of disorder, such as superficial scald . To prevent the onset of this physiopathy, one of the most effective technologies is controlling the storage atmosphere, by lowering down the concentration of oxygen. To monitor the possible consequences of low oxygen regimes an integrated survey was carried out profiling the transcriptome variation together with three categories of metabolites (phenolics, lipids and VOCs) in samples of 'Granny Smith' stored under static controlled atmosphere and under dynamic hypoxic conditions for 5 and 7 months, respectively. High concentration of chlorogenic acid and enhanced expression level of MdPAL and MdPPO were detected in samples affected by superficial scald. RNA-seq analysis revealed 8100 differentially expressed genes categorized in three main functional groups, highlighting the deep transcriptional reprogramming observed at the superficial scald onset in combination with the storage conditions. Moreover, DEG-network analysis allowed to identify a distinct number and type of transcriptomic hubs , depending on the storage time.