

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			

VII Postharvest Unlimited

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



XII Postharvest Ornamentals

ISHS International Symposium
14-16 May 2023 - Wageningen, NL

Session: PHU9a-4

Effect of shellac coating on the properties of egg white protein (EWP) films for cherry tomato packaging

Victor Baquero Aznar, Avenida de Montañana 930, 50059 Zaragoza Zaragoza, Spain; vbaquero@cita-aragon.es (presenting author) Maria Luisa Salvador, Fac. de Veterinaria. C Miguel Servet, 177, 50013 Zaragoza, Spain; mlsalva@unizar.es (co-author) Jaime Gonzalez-Buesa, CITA Aragon. Avenida de Montañana 930, 50059 Zaragoza, Spain; jgonzalez@cita-aragon.es (co-author)

Abstract

Egg white protein (EWP) films have limited applications for the modified atmosphere packaging of fresh fruits and vegetables due to their poor water vapour barrier properties compared to commonly used petroleum-based polymers. There are some strategies to improve this drawback such as nanoparticles addition, layer intercalation, or coatings application. Shellac is a natural non-toxic polymer with good film-forming properties, biodegradability, and noted moisture resistance. For these reasons, in this study shellac was used as coating material for EWP films obtained by compression moulding and was applied in two thicknesses (24 and 40 μm) on one or both sides of the film. The objective was to improve the barrier properties of these films and bring them closer to those of bio-based commercial films such as polylactic acid (PLA), and to compare them with those of petroleum-based materials such as oriented polypropylene (OPP). At 23 °C, the oxygen transmission rate (OTR) of EWP films was lower than that of PLA and OPP films, while the water vapor transmission rate (WVTR) was significantly higher. Shellac coating reduced the WVTR of EWP films up to values close to those of PLA and did not change OTR at 50% relative humidity. The colour of coated EWP films differs from that of commercial films, especially in lightness and in yellowish tone, which decreased and increased, respectively, with the thickness and number of coating layers. Cherry tomatoes were kept for 20 days at 4 °C in bags made with these films to verify with real-product situations these improvements. The product experienced a similar weight loss in shellac-coated EWP packages compared with that of PLA, so in this regard it could be considered an alternative to this commercial film. However, further improvement needs to be addressed in order to make them comparable to water barrier properties of OPP.