



FIRST CIRCUL-A-BILITY CONFERENCE

Re-Thinking Packaging for *Circular* and *Sustainable* Food Supply Chains of the *Future*
26-29 September 2021

On-line

Organized by



UNIVERSITÀ
DI FOGGIA

Conveners

Giancarlo Colelli and Milena Corredig

Organizing Committee

Maria Luisa Amodio, Antonella Cammarelle, Giancarlo Colelli (University of Foggia), Annalisa Apicella (University of Salerno), Milena Corredig (Aarhus University), Philip B. V. Scholten (Bloom Biorenewables)

Scientific Committee

Alexander Bardenshtein, Antonio Martin, Begonya Marcos, Elena Arranz, Fatih Öz, Fatima Maria Poças, Frederic Debeaufort, Giancarlo Colelli, Grzegorz Ganczewski, Ibrahim Gulseren, Ilke Unalan, Loredana Incarnato, Maria Luisa Amodio, Marit Pettersen, Matthijs Dekker, Milena Corredig, Philip B. V. Scholten, Polymeros Chrysochou, Pramod Mahajan, Tim C. Claypole, Victoria Krauter, Yildirim Selcuk



RETHINKING

**PACKAGING FOR CIRCULAR AND SUSTAINABLE FOOD SUPPLY CHAINS OF
THE FUTURE**

www.circul-a-bility.org



European
Commission

Horizon 2020
European Union funding
for Research & Innovation



FIRST CIRCUL-A-BILITY CONFERENCE

Re-Thinking Packaging for *Circular* and *Sustainable* Food Supply Chains of the *Future*

26-29 September 2021

On-line

Organized by



UNIVERSITÀ
DI FOGGIA

CONTENTS

- Conference Program
- Poster Session Program
- Book of Abstracts
- List of Authors by Submission
- List of Participants
- How to use Zoom

Aknowledgements

First Circul-a-bility Conference conveners wish to thank Antonella Cammarelle and Annalisa Apicella for effectively running the Conference Secretariat, Signe Nørretranders for creating and keeping the website updated, Aysha Saleem for the Book of Abstracts, and the team of EcoAgriTech for the technical support on the Zoom platform.



RETHINKING

**PACKAGING FOR CIRCULAR AND SUSTAINABLE FOOD SUPPLY CHAINS OF
THE FUTURE**

www.circul-a-bility.org



European
Commission

Horizon 2020
European Union funding
for Research & Innovation



FIRST CIRCUL-A-BILITY CONFERENCE

Re-Thinking Packaging for *Circular* and *Sustainable* Food Supply Chains of the *Future*

26-29 September 2021

On-line

- 16:30 – 16:45 NeoPalea: bio-based material for packaging applications - [Leonardo Conti](#), Italy (054)
16:45 – 17:00 Investigation of stereocomplexed poly(lactide acid)/layered double hydroxides for high-performance mono-material packaging solutions – [Qi Chen](#), Denmark (128)

17:00 – 17:30 **Coffee break**

Session 2B (Chair: [Begonya Marcos-Muntal](#))

- 17:30 – 17:45 Use of gallic acid based oxygen scavenger to prevent the discoloration of processed meat products under industrial conditions - [Selcuk Yildirim](#), Switzerland (116)
17:45 – 18:00 Influence of an innovative, biodegradable multilayer active packaging on “pesto” sauce characteristics during storage – [Virginia Glicerina](#), Italy (097)
18:00 – 18:15 Bioactive complexes of chitosan and green coffee bean or artichoke extracts for food packaging applications - [Ramune Rutkaite](#), Lithuania (105)
18:15 – 18:30 Diffusion of thyme, cinnamon and oregano essential oils in different nanocellulose matrices – [Sara Casalini](#), Italy (059)

Tuesday, September 28th

Session 4 (Chair: [Elena Arranz](#))

- 09:00 – 09:30 **Keynote 4: "The challenge of NIAS migration from emerging food packaging materials" [Cristina Nerin](#) (University of Zaragoza, Spain)**
09:30 – 09:45 Deactivation kinetics of inoculated SARS-CoV-2 on a patented cardboard activated with natural antimicrobials - [Lorenzo Siroli](#), Italy (103)
09:45 – 10:00 Next generation screening methodologies for the advanced and comprehensive monitoring of intentionally and non-intentionally added substances in food contact materials - [Chrysoula Kanakaki](#), Greece (073)
10:00 – 10:15 Urinary levels of endocrine-disrupting chemicals, including triclosan and 4-nonylphenol in School-Aged Children of Southern Italy population with a Plastic-Free Lifestyle – [Francesco Sessa](#), Italy (086)
10:13 – 10:30 Microplastics releases by packaging, a new risk for consumers – [Eloise Pulvirenti](#), Italy (114)
10:30 – 10:45 Chemical testing of mechanically recycled polyethylene terephthalate – [Emmanouil D. Tsochatzis](#), Denmark (055)
10:45 – 11:00 Risk assessment in use of recycled polyethylene from post-consumer waste as food contact material - [Tanja Radusin](#), Norway (119)

11:00 – 11:30 **Coffee break**

Session 5 (Chair: [Victoria Krauter](#))

- 11:30 – 12:00 **Keynote 5: "Consumer Trends and Perceptions toward Sustainable Packaging Solutions" [Polymeros Chrysochou](#) (Aarhus University, Denmark)**
12:00 – 12:15 Science and media framing the future of plastics in a transition to the circular economy - [Ivanna Colijn](#), The Netherlands (102)
12:15 – 12:30 Analysis of sustainable packaging attributes in the confectionary sector - [Anna-Sophia Bauer](#), Austria (112)
12:30 – 12:45 Navigating sustainable packaging solutions for food waste minimization in downstream activities – [Carlos Martin-Rios](#), Switzerland (096)
12:45 – 13:00 Sustainability message outlook impacts consumer response toward sustainable packaging - [Polymeros Chrysochou](#), Denmark (084)
13:00 – 13:15 Twitter is garbage: what kind of packaging waste materials do people tweet about? Exploration of #zerowaste hashtag usage - [Greg Ganczewski](#), Poland (133)
13:15 – 13:30 Intention to purchase milk packaged by biodegradable packaging: evidence from Italian consumers – [Antonella Cammarelle](#), Italy (068)

13:30 – 14:30 **Lunch break**

14:30 – 15:00 **Poster session**



peroxide values and maintained more stable quality characteristics, in terms of colorimetric, microbiological and textural parameters when compared with the respective control samples, during storage. Obtained results highlighted the potentiality of the new active biodegradable material, to extend food products shelf-life and maintain high quality levels during storage.

097

INFLUENCE OF AN INNOVATIVE, BIODEGRADABLE MULTILAYER ACTIVE PACKAGING ON “PESTO” SAUCE CHARACTERISTICS DURING STORAGE

Glicerina V, Siroli L, Ticchi N, Capelli F, Accorsi R, Gherardi M, Fiorini M, Andrisano V, Colombo V, Manzini R, Lanciotti R, Romani S

University of Bologna, Italy

lorenzo.siroli2@unibo.it

Active packaging is one of the emerging technologies developed as an alternative to traditional one, to maintain and increase shelf life of foods. In this study an innovative, biodegradable multilayer active packaging, with excellent oxygen barrier properties, has been realized to extend the shelf life of “Genovese pesto” sauce. The use of biodegradable material for food packaging in fact, has been very limited because these polymers have generally poor barriers against external agents and weak mechanical properties. In this study, cold plasma treatment was employed to obtain the adhesion of two layers of polylactic acid (PLA) films, in place of synthetic adhesives, and also to immobilize ascorbic acid used as an oxygen scavenger active agent. Preliminary studies were performed on activated pouches filled with sunflower oil, used as a model system, to evaluate the performances of the new PLA packaging. Packed oil samples were stored in thermal abuse conditions at 35 °C, to accelerate oil oxidation phenomenon and analysed for peroxide value and colour during 64 days of storage. Subsequently, different samples of refrigerated “pesto”, have been packed in the new biodegradable active system, stored at 25 and 45°C and analyzed for peroxide value, water activity, textural parameters and microbiological loads at 0, 8, 14, 20, 27, 34 e 41 days. Both samples (sunflower oil stored at 35°C and pesto stored at 25°C) presented lower