

APPLICATION OF PHYTOCOMPOUND-LOADED NANOEMULSIONS IN THE ACTIVE COATINGS AND FILMS FOR FOOD PACKAGING

Ana S. Salević, Danijel D. Milinčić, Steva Lević, Aleksandar Ž. Kostić, Mirjana B. Pešić, Viktor A. Nedović*

University of Belgrade, Faculty of Agriculture, Belgrade, Serbia

** Corresponding author: ana.salevic@agrif.bg.ac.rs*

ACTIVE PACKAGING MATERIALS

- Tendency to extended food shelf life and lower environmental footprint
- A novel, green approach to improve quality, safety and storability of food
- Could be developed employing active phytochemicals-loaded nanoemulsions and polymer as the continuous phase

PHYTOCOMPOUNDS

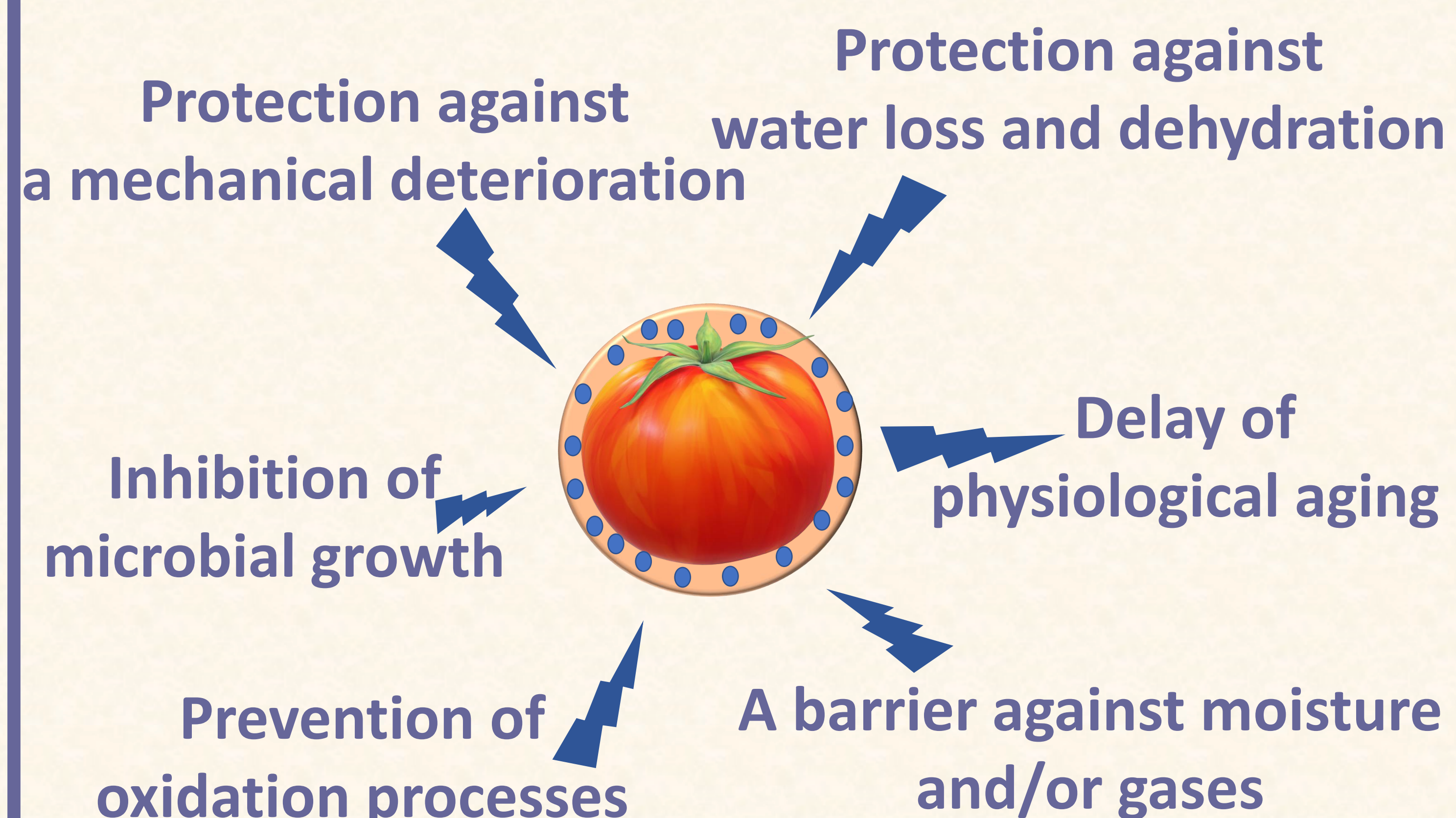
- Role: to impart functional properties
- A wide variety of antioxidants, antimicrobials, and nutraceuticals, such as essential oils, oil resins, extracts, phenolic compounds, monoterpenes, vitamins
- Loading of phytochemicals within nanoemulsions:
 - the decreased dosage needed for activity
 - uniform dispersion
 - improved solubility, stability, and functionality

ACTIVE PACKAGING MATERIALS CONTAINING PHYTOCOMPOUNDS-LOADED NANOEMULSIONS

COATINGS AND FILMS

- More suitable forms of nanoemulsions for use in solid foods and delivery of actives to the food surface
- Role of the polymeric matrix to ensure:
 - a structural support matrix
 - stability to nanoemulsions
 - protection of actives from degradation
 - prevention of interactions between actives and environment
 - controlled mass transport
 - low effects on organoleptic properties
- Focus on the use of biodegradable polymers

FUNCTION



Acknowledgment:

This work was financially supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia (Grant ID: 451-03-9/2021-14/200116).



UNIFood2021 Conference
24th-25th September 2021 University of Belgrade
2nd International UNIFood Conference

