Section 2. Call: Multi-topic 2019
Topic 2.3.1 Extending shelf-life of perishable Mediterranean food products by sustainable technologies and logistics and by optimized pest and microbial control
Type of action: RIA

Bio-protective cultures and bioactive extracts as sustainable combined strategies to improve the shelf-life of perishable Mediterranean food

Document Information

Document title:	**D2.3.** Prepared extracts for application in novel packaging and food models
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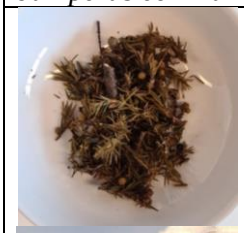
Project partners/consortium:
P1 – Cukurova University – CUNI (coordinator)
P2 – Alma Mater Studiorum Università di Bologna – UNIBO
P3 – Universita' Cattolica del Sacro Cuore – UCSC
P4 – C.L.A.I. ScA – CLAI
P5 – University of Split – UNIST (vice-coordinator)
P6 – Croatian Veterinary Institute, Regional Veterinary Institute Split – CROVET
P7 – Centaurus d.o.o. – CROSME
P8 – DOMCA SAU – DOMCA
P9 – University of Ljubljana – UNILJUB
P10 – University of Maribor (Faculty of Mechanical Engineering) – UNIMB

From Deliverables *D2.1. Report of bioactive component composition in brown algae and agro-food by-products* and *D2.2. Report on in vitro biological activities of algae and agro-food by-products and their correlation with bioactive component composition* the consortium decided that by-product samples blackberry leaves and juice by-products, juniperus samples and algae *Padina pavonica* and *Cistoseira compressa* collected from May and September 2021 will be further studied for application in novel packaging and food models (*Milestone 2.2. Consortium decision on which extracts/components will be used further application in novel packaging and food models*). Samples for next phase of the project were prepared as shown in Table 1.

Table 1. Prepared extracts for application in novel packaging and food models

<table>
<tr><td>Sample/Extract</td><td colspan="2">Application</td></tr>
<tr><td>Blackberry leaves</td><td>Work packages</td><td>Task</td></tr>
<tr><td> 
  </td><td>WP4</td><td>Task 4.1. Determination of antioxidant potential of bioactive extracts (individual and mixtures) in food model (UNIST)
Task 4.2. Development of thin films (PP and PE) as well as biodegradable PLA/starch/ antimicrobial/antioxidant nanocomposites (UNIMB)
Task 4.3. Determination of antimicrobial potential of bioactive extracts (individual and mixtures) in food models and their synergy with packaging methods</td></tr>
<tr><td colspan="3">Blackberry juice by-product</td></tr>
<tr><td>  </td><td>WP4</td><td>Task 4.1. Determination of antioxidant potential of bioactive extracts (individual and mixtures) in food model
Task 4.2. Development of thin films (PP and PE) as well as biodegradable PLA/starch/ antimicrobial/antioxidant nanocomposites
Task 4.3. Determination of antimicrobial potential of bioactive extracts (individual and mixtures) in food models and their synergy with packaging methods</td></tr>
<tr><td colspan="3">Juniperus communis by-product</td></tr>
<tr><td> 
  </td><td>WP4</td><td>Task 4.1. Determination of antioxidant potential of bioactive extracts (individual and mixtures) in food model
Task 4.2. Development of thin films (PP and PE) as well as biodegradable PLA/starch/ antimicrobial/antioxidant nanocomposites
Task 4.3. Determination of antimicrobial potential of bioactive extracts (individual and mixtures) in food models and their synergy with packaging methods</td></tr>
</table>

Juniperus oxycedrus needles		
	WP4	**Task 4.2.** Development of thin films (PP and PE) as well as biodegradable PLA/starch/ antimicrobial/antioxidant nanocomposites
Padina pavonica (PPAV9)		
	WP4	**Task 4.1**. Determination of antioxidant potential of bioactive extracts (individual and mixtures) in food model **Task 4.2.** Development of thin films (PP and PE) as well as biodegradable PLA/starch/ antimicrobial/antioxidant nanocomposites **Task 4.3.** Determination of antimicrobial potential of bioactive extracts (individual and mixtures) in food models and their synergy with packaging methods
Cystoseira compressa (CCOM6)		
	WP4	**Task 4.1**. Determination of antioxidant potential of bioactive extracts (individual and mixtures) in food model

The extracts that show the best effect in these experiments will be used in trials in WP5.