

Interreg

Italy – Croatia

BIOBASED



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“Development support of blue biorefinery in the Adriatic Sea”

BIOBASED Project

(Interreg Italy-Croatia 2021-2027)

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www.italy-croatia.eu



“Development support of blue biorefinery in the Adriatic Sea”



The **BIOBASED** project focuses on the sustainable use of underexploited marine resources to boost the blue economy in the Adriatic area, aligning with EU strategies. The project aims to bridge knowledge gaps in this sector by establishing an R&D scheme to strengthen Italy-Croatia's blue economy, through the transfer of the know-how from researches to producers and by involving SMEs in pilot sites to market bio-based products and services.



P1 - Sustainable growth in the blue economy

SO 1.2 Developing skills for smart specialisation, industrial transition and entrepreneurship

PROJECT PARTNERS



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**CNR
IRBIM**
ISTITUTO PER LE
RISORSE BIOLOGICHE
E LE BIOTECNOLOGIE
MARINE



Associazione Mediterranea Acquacoltori



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**Centar za
poduzetništvo**
Dubrovačko-neretvanske županije



PROJECT DURATION
01.04.2024 - 30.09.2026



ERDF
€ 1.008.196,73

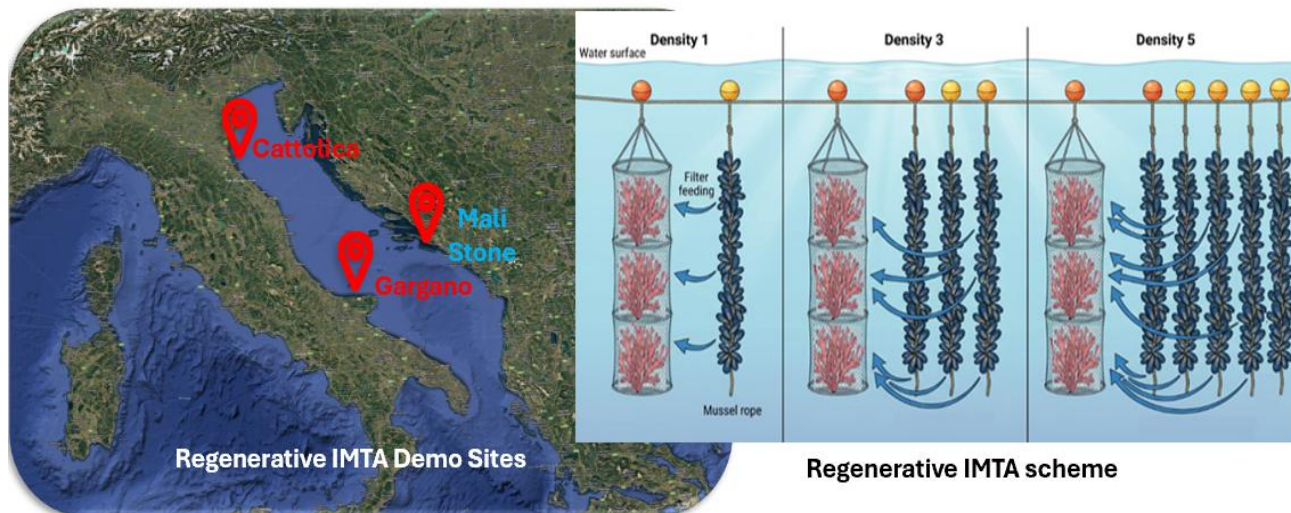


TOTAL BUDGET
€ 1.260.245,92

KEY OBJECTIVES OF THE PROJECT

Testing the production of seaweeds in **Regenerative IMTA systems** in selected pilot sites in the Adriatic Sea.

Increase **SMEs collaboration** practices and supporting their innovation in the **Blue Economy domain**.

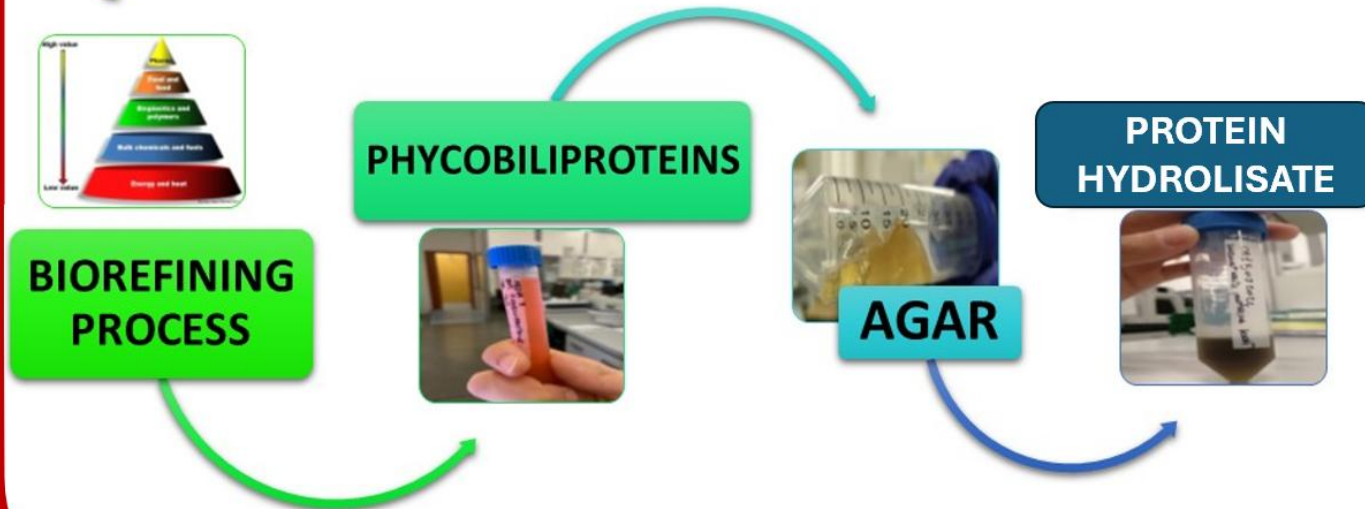


Regenerative IMTA

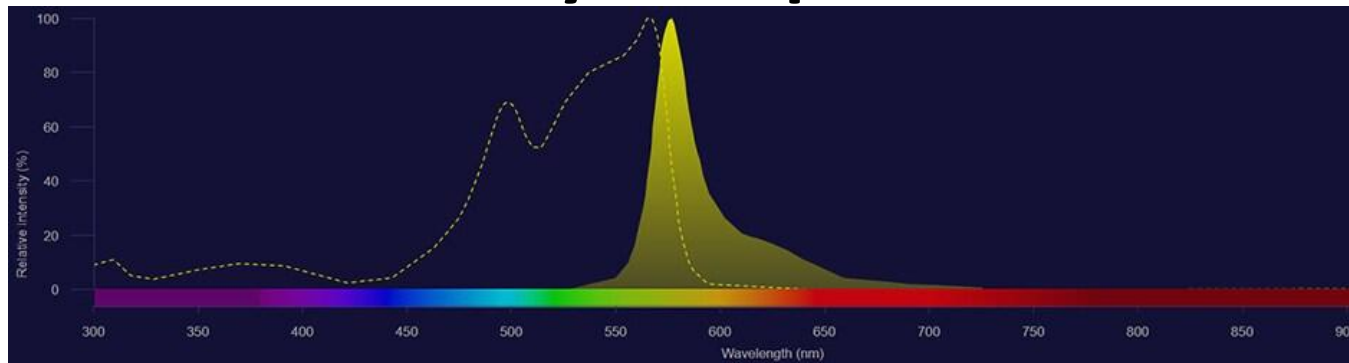


Gracilaria gracilis
(red seaweed)

Seaweed Biorefinery (based on Green Chemistry process)



Phycobiliproteins



52412 ▶ Sigma-Aldrich.

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R-Phycoerythrin

BioReagent, passes test for gel electrophoresis

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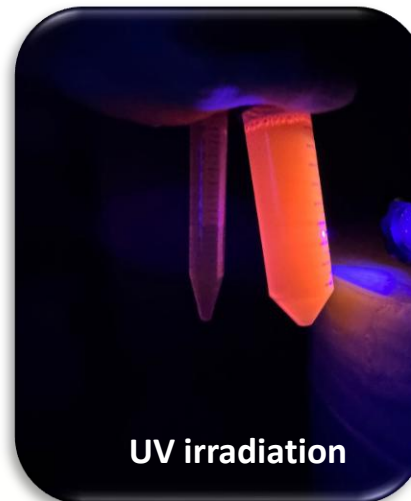
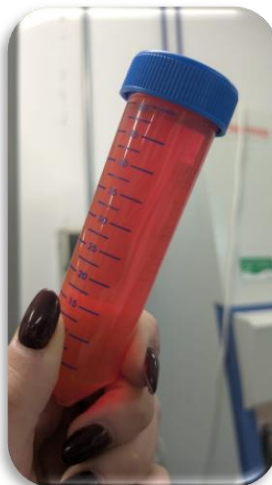
Synonym(s): R-PE, phycobiliprotein

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Select a Size

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Pack Size	SKU	Availability	Price
1 mg	52412-1MG-F	✓ Available to ship TODAY from Schnelldorf Distribution	€229.00



MW Extracted Agar (solid/water 1:40 w/w)



	ASH	VS	C	H	N
	% dw	% dw	% dw	% dw	% dw
Agar	2.47	98.90	40.22	7.18	0.30
Residue	12.50	77.70	39.40	6.79	3.26

Carbohydrate

% dw

Glucuronic

2.32 %

Galacturonic

2.78 dw

Glucose

3.11

Galactose

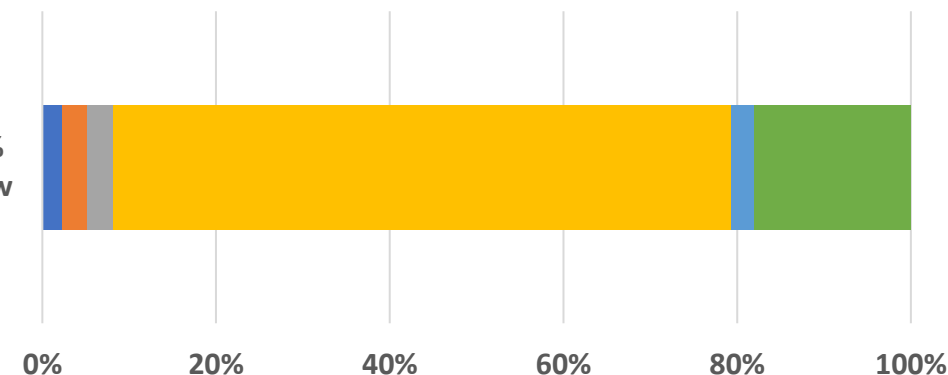
71.09

Rhamnose

2.69

Arabinose

18.01



Yield= 28.3 %dw

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Synergies with other EU Projects



Sustainable Blue
Economy Partnership

SeaWeave (2025-2028):
*Novel functional textiles from red
and brown seaweed*



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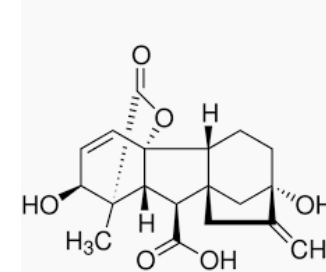


PYRATES
smart fabrics

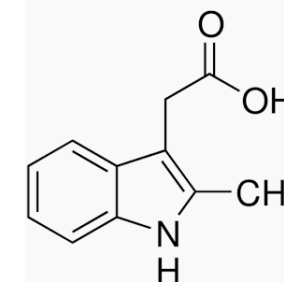
Protein content and Aminoacidic profile

AA	Gracilaria S 1	Gracilaria S 2	Gracilaria S 3	Gracilaria S 4
	%dw	%dw	%dw	%dw
L-Phenilalanine	0.29	0.25	0.28	0.64
L-Leucine	0.22	0.18	0.22	0.38
L-Isoleucine	0.33	0.27	0.32	0.51
L-Methionine	0.17	0.18	0.21	0.12
L-Tyrosine	0.11	0.09	0.13	0.10
L_Valine	0.53	0.58	0.64	0.84
L-Proline	0.27	0.20	0.23	0.43
L-Alanine	0.55	0.37	0.37	0.55
L-Threonine	0.11	0.14	0.09	0.20
L-Glycine	0.21	0.37	0.36	0.50
L-Serine	0.27	0.17	0.19	0.29
L-Glutamic acid	0.87	0.83	0.66	0.28
L-Aspartic acid	0.13	0.05	0.06	0.28
L- Histidine	0.01	0.01	0.01	0.01
L-Arginine	0.23	0.16	0.21	0.82
L-Lysine	0.07	0.11	0.15	0.11
L-Cystine	0.51	0.00	0.52	0.00
Protein content	20.42	22.53	27.73	21.85

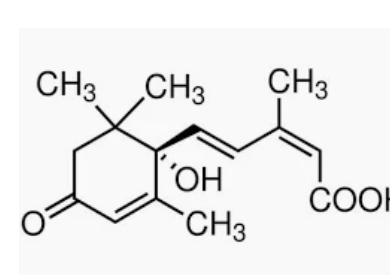
PGR	µg/g
Gibberellic acid	4.62 ± 0.11
3-Indoleacetic acid	2.31 ± 0.04
Absciscic Acid	3.53 ± 0.09
3-Indole butyric acid	2.71 ± 0.05



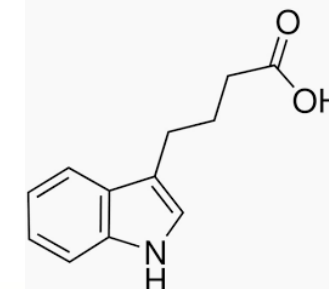
Gibberellic acid



3-Indoleacetic acid



Absciscic Acid

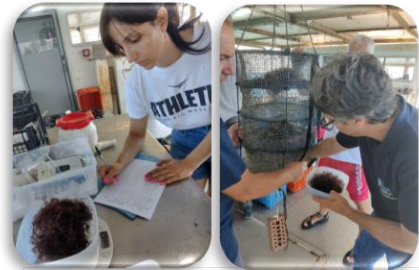


3-Indole butyric acid

RESULTS

Seaweed productivity in Regenerative IMTA

Seaweed Potential production (Nord Gargano – Italy)



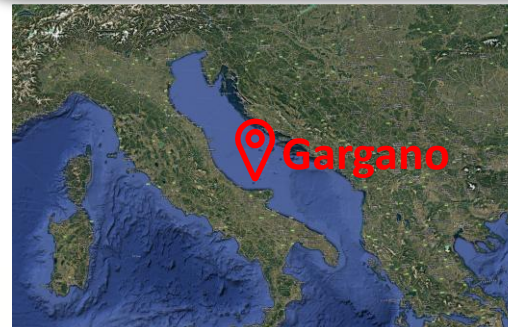
			Small Mesh 2.5mm	Large Mesh 9 mm	Small Mesh 2.5mm	Large Mesh 9 mm
			Biomass production per lantern (g ww)	Biomass production per lantern (g ww)	Biomass Productivity (g ww m ⁻¹ longline)	Biomass Productivity (g ww m ⁻¹ longline)
Mussel	Density 1	Summer	1418.30	1745.13	1013.07	1246.52
		Autumn	928.83	508.45	663.45	363.18
	Density 3	Summer	1697.30	1580.62	606.18	564.51
		Autumn	1003.29	778.87	358.32	278.17
	density 5	Summer	1697.30	1580.62	404.12	376.34
		Autumn	1003.29	778.87	238.88	185.45

			Small Mesh 2.5mm	Large Mesh 9 mm	Small Mesh 2.5mm	Large Mesh 9 mm
			Biomass production per lantern (g ww)	Biomass production per lantern (g ww)	Biomass Productivity (g ww m ⁻¹ longline)	Biomass Productivity (g ww m ⁻¹ longline)
Oyster	Density 1	Summer	401.85	707.41	200.93	353.71
		Autumn	223.75	46.24	111.88	23.12
	Density 3	Summer	604.26	617.03	86.32	88.15
		Autumn	81.42	762.61	11.63	108.94
	density 5	Summer	561.80	525.70	56.18	52.57
		Autumn	81.65	83.89	8.17	8.39



Mussels Plant

- Number of Longlines: 16
- Longline Length: 2 km



KPIs

(Summer and Autumn 2025)

- ❖ Total Seaweed production:
61.12 tons ww (≈ 11 tons dw)
- ❖ **1.1 tons** of Proteins
- ❖ **6.6 tons** of Carbohydrates
- ❖ **55 Kg** of R-phycoerythrin
- ❖ **3.63 tons** of Blue Carbon Uptake

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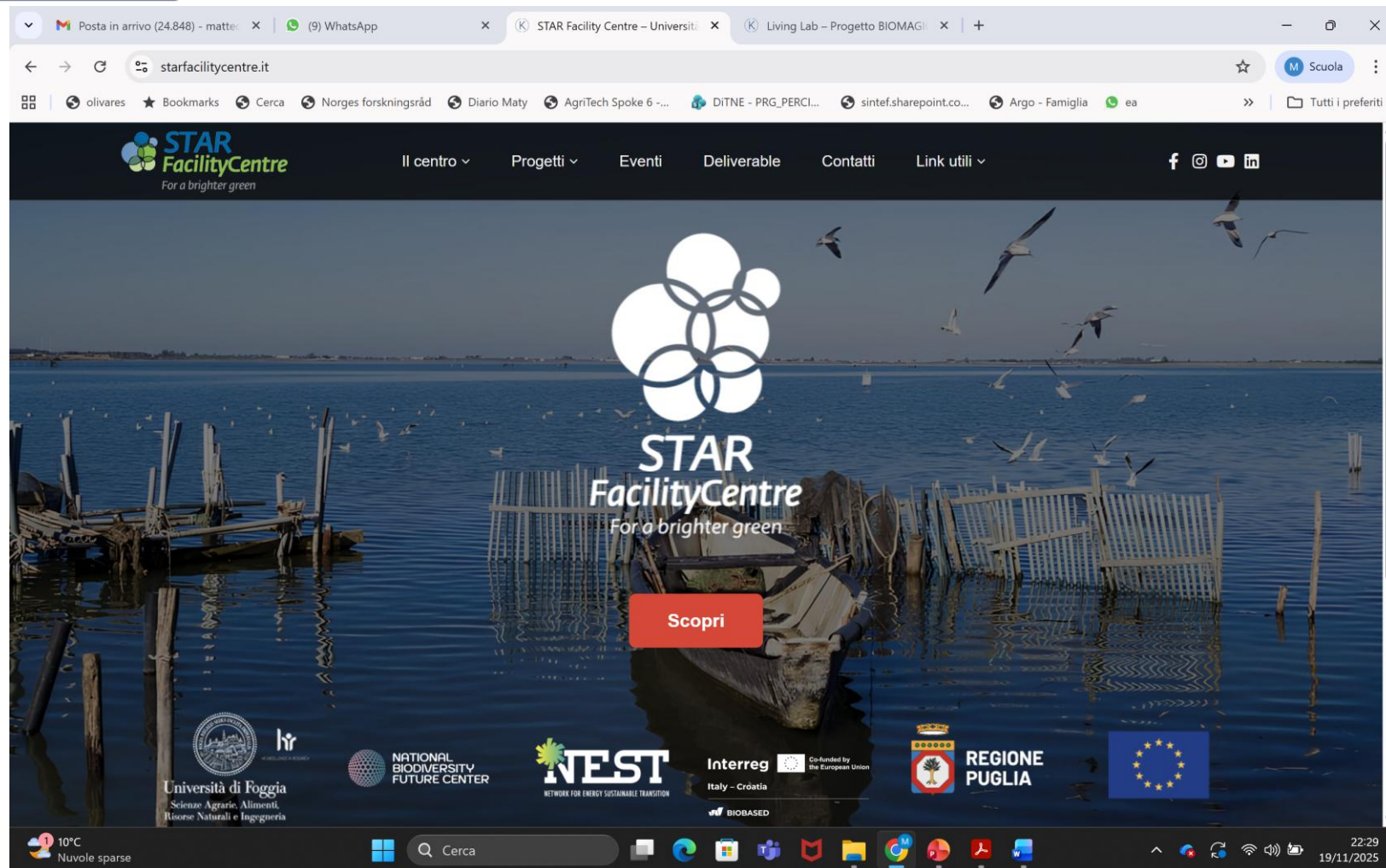
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UNIVERSITY OF FOGGIA (ITALY)

Matteo Francavilla, PhD

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15th International Seaweed Conference EU

Seagrass

16 - 18 JUNE 2026
GOTHENBURG, SWEDEN



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**Thank you
for
your attention**

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<https://starfacilitycentre.it/>