OT-50

Marine Biofertilizer for marine meadows restoration

ULPGC Universidad de Las Palmas de Gran Canaria | Fundación Parque Científico Tecnológico | OTC Oficina de Transferencia de Conocimiento

TYPE OF R&D RESULT

New technology
New product
New service
New knowledge or skill

DEGREE OF COMMERCIAL MATURITY

Conceptual idea
Proof of concept (design)
Validated in a controlled environment
Validated in a real environment
Successfully implanted

PROTECTION

Non-applicable
Patent
Software
Know-how
Utility model

Patent title: BIOINOCULANT FOR THE PROMOTION OF GROWTH OF A MARINE PHANEROGAM
Application number: EP24382951
Application date: 04/09/2024
Status: pending
Country: Europa

Description of the solution. Problem solved

This innovative marine biofertilizer has been developed to improve the restoration of seagrass meadows. It facilitates their growth and strengthens their anchorage to the substrate.

The product is a cocktail of beneficial microorganisms applied directly alongside the root ball of cultivated seedlings, providing essential nutrients locally without contaminating the surrounding water. Its main goal is to increase the survival and vigor of key species such as Cymodocea nodosa and Posidonia oceanica, improving the efficiency of replanting projects.

No specific fertilizers for seagrasses are available on the market, so this solution fills a technological gap in coastal ecological restoration.

Functionality and Environmental Benefits:

- It accelerates the ecological restoration of degraded seagrass meadows.
- Increases the survival and growth rates of transplanted seagrasses.
- Prevents water contamination, as nutrients are released in a controlled manner in the root zone.
- Contributes to blue carbon capture, sediment stabilization, and enhancement of coastal biodiversity.
- Reduces the need for artificial materials (such as plastic fixing meshes) in restoration projects.

Commercial Application Areas

- Marine restoration projects funded by governments and environmental NGOs.
- Environmental engineering companies dedicated to the recovery of coastal ecosystems.
- Marine research and conservation institutions.
- The sustainable aquaculture sector, where substrate improvement is key to marine biomass production.

Market Opportunities

The global biofertilizer market is rapidly growing, with an estimated value of 9–10 billion USD by 2034. However, application in marine environments is an emerging niche with no direct competition, aligned with the United Nations Decade on Ecosystem Restoration and the European Biodiversity Strategy for 2030.

Innovation and competitive advantages

- Pioneering innovation in seagrass fertilization.
- A biodegradable product that is friendly to the marine ecosystem.
- It is compatible with conservation initiatives and global environmental policies.

AUTHOR
Phd Pilar García Jiménez, Phd
Rafael Robaina Romero, Phd
Marina Carrasco

CONTACT
Knowledge Transfer Office (KTO)
otc@fpct.ulpgc.es
928 45 99 43
https://otc.ulpgc.es/

Gobierno de Canarias
Consejería de Universidades, Ciencia e Innovación y Cultura
Agencia Canaria de Investigación, Innovación y Sociedad de la Información