CTN

BLUE GROWTH

ACUICULTURA

INFORME DE VIGILANCIA TECNOLÓGICA

2017

info REGIÓN DE MURCIA

Este informe ha sido elaborado por la la Asociación Empresarial de Investigación Centro Tecnológico Naval y del Mar gracias al Convenio suscrito con el Instituto de Fomento de la Región de Murcia con el apoyo del fondo FEDER.

Más info: www.ctnaval.com

REGIÓN DE MURCIA

Unión Europea
Fondo Europeo
de Desarrollo Regional
"Una manera de hacer Europa"

Índice

Índice de tablas

Índice de imágenes

1. Introducción

Este informe, elaborado por el equipo del Centro Tecnológico Naval y del Mar, describe la situación actual e introduce las tendencias futuras de la estrategia del Crecimiento Azul en el ámbito de la acuicultura. Su finalidad es ofrecer al tejido empresarial una mejora en el conocimiento del entorno, que permita detectar tendencias y desarrollar estrategias adecuadas basadas en niveles superiores de certidumbre a través de la captación y divulgación de información y conocimiento de importancia estratégica en los ámbitos social, tecnológico y económico, que incidan en la detección de nuevas oportunidades de desarrollo regional.

Para la realización de este informe se han aplicado técnicas de Vigilancia Tecnológica, una herramienta al servicio de las empresas y organizaciones que permite detectar oportunidades y amenazas aportándoles ventajas competitivas y fundamentos para la toma de decisiones estratégicas mediante la selección y análisis de información de diversos tipos (científica, tecnológica, comercial, de mercado, social…).

Para ello se parte de una introducción metodológica sobre las técnicas y fases de la Vigilancia Tecnológica que se han aplicado para el desarrollo del informe. A continuación se introduce el Crecimiento Azul como estrategia europea y el papel de la acuicultura en el marco de dicha estrategia, con el fin de dibujar un cuadro de referencia para la contextualización de los contenidos temáticos del informe. Seguidamente se realiza un análisis del estado de la técnica, que incluye un estudio de los grupos, infraestructuras, patentes y proyectos de investigación existentes en la actualidad tanto a nivel nacional como europeo. Este análisis se completa con una visión de las oportunidades de financiación de I+D, legislación y normativa que afectan al sector.
A partir del estudio anterior se identifican las conclusiones sobre tendencias de la acuicultura en el marco de la estrategia europea de Crecimiento Azul.

2. Metodología

La vigilancia tecnológica se entiende como una "forma organizada, selectiva y permanente de captar información del exterior sobre tecnología, analizarla y convertirla en conocimiento para tomar decisiones con menor riesgo y poder anticiparse a los cambios". (AENOR, 2011) Su finalidad última es generar ventajas competitivas para la empresa ya que le proporciona datos para:

Imagen 1. Finalidad de la Vigilancia Tecnológica

Para el desarrollo de la Vigilancia Tecnológica el primer paso el plantear los aspectos básicos (Degoul, 1992):
¿Cuál es el objeto de la vigilancia? ¿Qué debemos vigilar? ¿Qué información buscar? ¿Dónde localizarla?.

Cuando el objetivo de la VT está claramente delimitado, se procede a planificar la estrategia de búsqueda. Para el despliegue de esta fase conviene tener en cuenta que la información puede presentarse de dos formas: estructurada y no estructurada. La primera es propia de las bases de datos, conjuntos de datos homogéneos, ordenados de una forma determinada, que se presenta en forma legible por ordenador (Escorsa, 2001). Su unidad es el registro –o ficha de un artículo científico o una patente- que presenta la información ordenada en campos: autor, título, fecha de publicación, titular de la patente, inventores, etc. En cambio, la información no estructurada se presenta en textos sin un formato determinado (noticias de periódicos, sitios web, blogs, correos electrónicos) cuyo tratamiento requerirá de nuevas herramientas capaces de "leer" y analizar estos textos. Estas herramientas son útiles también para analizar la información de textos completos de artículos científicos o de patentes. Hoy se considera que el texto es la mayor fuente

de información y conocimiento para las empresas. (Escorsa, Pere, Pilar Lázaro Martínez, Círculo de Innovación en Biotecnología, 2007).

Tras la selección de las palabras clave se automatiza la búsqueda en función de las diferentes tipologías de fuentes a utilizar, se lanza la misma y se filtran los resultados en términos de pertinencia, fiabilidad, relevancia, calidad y capacidad de contraste (AENOR, 2011).

Una vez comprobada la calidad de la información, los métodos de análisis han de garantizar su valor para la explotación de los mismos (F. Palop, 1995). El objetivo del análisis es transformar la información en bruto recogida en un producto con alto valor añadido. A partir de aquí, la aportación de los expertos es crítica para crear información avanzada, para generar conocimiento. Pasamos de una masa ingente de información en distintos formatos y lugares a una etapa en la que se captura la información más relevante, se organiza, indexa, almacena, filtra y, finalmente, con la opinión del experto que aporta en este punto del proceso un máximo valor añadido (CETISME, 2003).

A continuación, se incluye un esquema con las distintas fases de la metodología empleada durante la generación de este informe.

Imagen 2. Fases de la Vigilancia Tecnológica

3. Estrategia europea de Crecimiento Azul

Blue Growth es la estrategia de la Unión Europea para apoyar la economía azul a largo plazo. Se trata de una iniciativa enfocada a aprovechar el potencial inexplotado que ofrecen los océanos, mares y costas de Europa para el crecimiento económico y la creación de empleo. Partiendo de la premisa de que los mares y los océanos son motores de la economía europea y un polo de innovación y crecimiento, tiene en cuenta tres factores adicionales (Europea, 2012):

- Los avances tecnológicos aplicados a operaciones en aguas profundas, inviables hasta hace pocos años.
- La explotación sostenible de los recursos del océano como alternativa a los recursos finitos en tierra y agua dulce.
- La idoneidad del transporte marítimo frente al terrestre en relación al ahorro energético y la reducción de emisiones de gases de efecto invernadero.

Este conjunto de consideraciones hace que la contribución de la estrategia Blue Growth a la consecución de los objetivos de la Estrategia Europa 2020 se considere clave para un crecimiento inteligente, sostenible e integrador.

3.1 Componentes de la Estrategia

Medidas específicas de la Política Marítima Integrada:

a. Conocimiento marino para mejorar el acceso a la información sobre el mar;
b. Ordenación del espacio marítimo para garantizar una gestión eficaz y sostenible de las actividades en el mar:
c. Vigilancia marítima integrada para que las autoridades tengan una mejor apreciación de lo que pasa en el mar.

Estrategias de cuenca marítima que garanticen la combinación de medidas más adecuada con el fin de fomentar el crecimiento sostenible para tener en cuenta factores climáticos, oceanográficos, económicos, culturales y sociales de carácter local:

a. Mar Adriático y Mar Jónico
b. Océano Ártico
c. Océano Atlántico
d. Mar Báltico

e. Mar Negro
f. Mar Mediterráneo
g. Mar del Norte

Actividades específicas:

a. Acuicultura
b. Turismo costero
c. Biotecnología marina
d. Energía oceánica
e. Explotación minera de los fondos marinos

(Europea, Crecimiento Azul, s.f.)

3.2 Área temática de Acuicultura

En Europa, la acuicultura representa aproximadamente el 20% de la producción de pescado y da empleo directo a unas 85.000 personas. El sector se compone principalmente de pymes o microempresas en zonas costeras y rurales. La acuicultura de la UE es conocida por su alta calidad, su sostenibilidad y su normativa sobre protección de los consumidores. (Europea, Acuicultura, s.f.)

La producción global de la UE se ha mantenido más o menos constante desde 2000, mientras que la producción mundial ha aumentado casi un 7%.

La Comisión quiere impulsar el sector acuícola con la reforma de la Política Pesquera Común y en 2013 publicó unas orientaciones estratégicas que presentan prioridades comunes y objetivos generales a escala de la UE. Previa consulta con todas las partes interesadas, se determinaron cuatro ámbitos prioritarios:

- reducción de las cargas administrativas
- mejora del acceso al espacio y al agua
- aumento de la competitividad
- aprovechamiento de las ventajas competitivas debido a los altos niveles de calidad, sanitarios y medioambientales.

De acuerdo con esas orientaciones, la Comisión y los países de la UE colaboran para contribuir al incremento de la producción y la competitividad del sector. Se ha pedido a los países de la UE que elaboren planes plurianuales para promover la acuicultura. Además de contribuir a localizar los puntos de congestión, la Comisión facilita la cooperación, la coordinación y el intercambio de buenas prácticas entre los países de la UE.

4. Oferta tecnológica.

4.1 Grupos de investigación.

En el siguiente mapa se identifican los primeros grupos de investigación en el ranking de producción de literatura científica en el campo de la acuicultura a nivel europeo.

Imagen 3. Ranking de producción de literatura científica

4.2 Infraestructuras de I+D

A continuación se incluyen dos mapas[1] de infraestructuras de I+D.

4.2.1. A nivel europeo

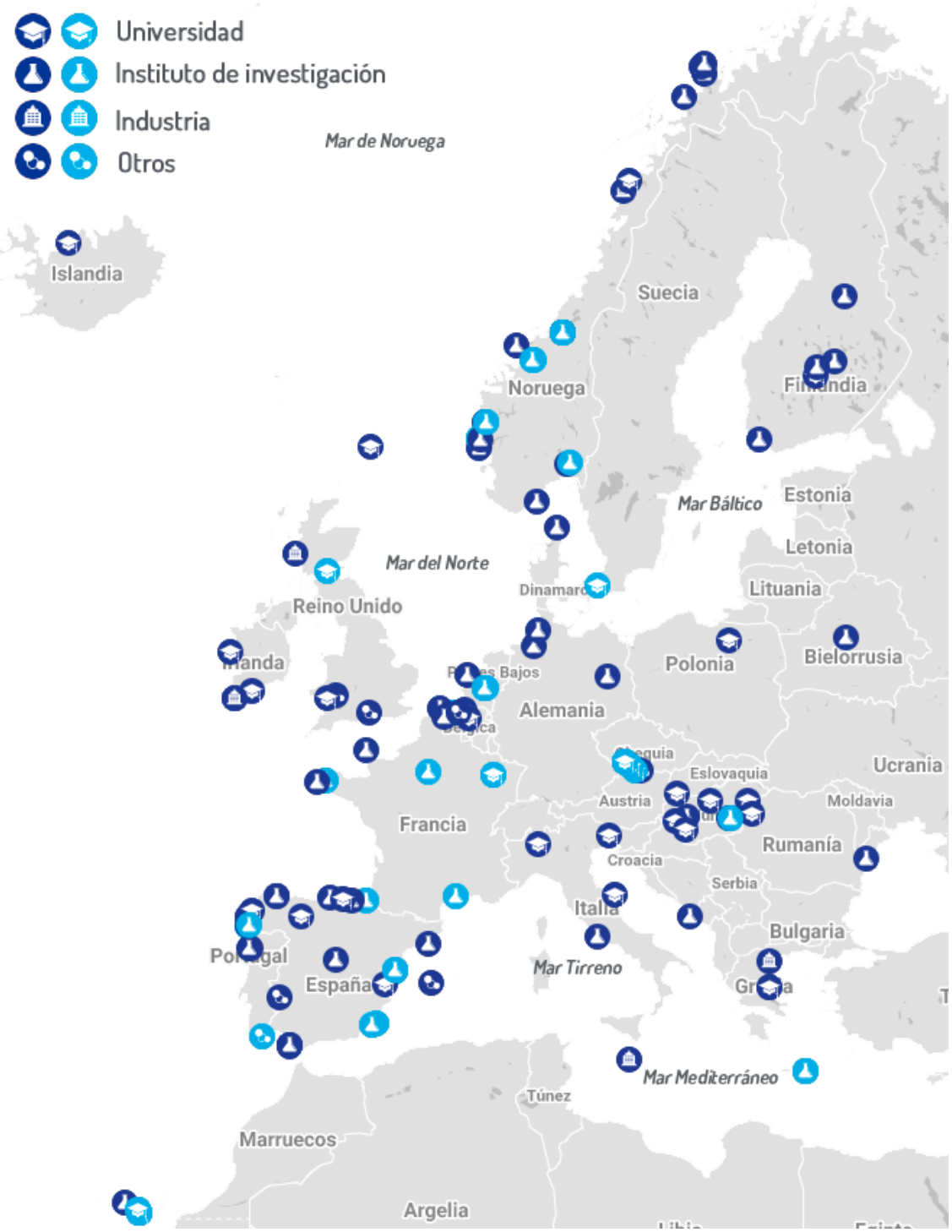


Imagen 4. Mapa europeo de infraestructuras de I+D

[1] Fuente **AQUAEXCEL**[2020]

4.2.2. A nivel nacional

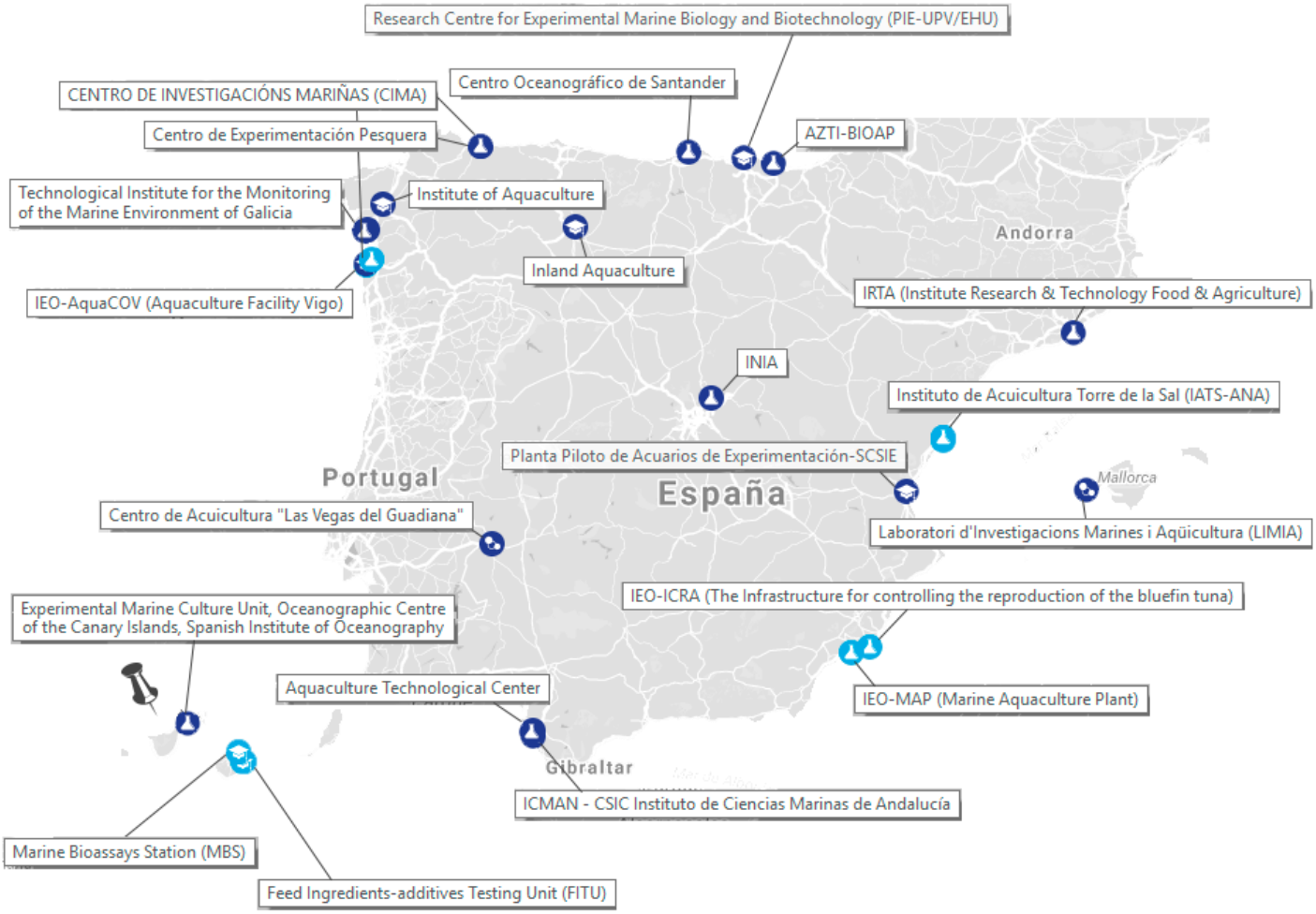


Imagen 5. Mapa de infraestructuras de I+D en España

4.2.2.1 Otros organismos y entidades de interés a nivel nacional

- **JACUMAR**: Junta Nacional Asesora de Cultivos Marinos, dependiente del Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente.
  Web:http://www.mapama.gob.es/es/pesca/temas/acuicultura/junta-asesora-de-cultivos-marinos/
- **OESA**: Observatorio español de acuicultura. Integrado en la Fundación Biodiversidad, depende del Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente. Web: http://www.observatorio-acuicultura.es/
- **REGP**: Red Española de Grupos de Pesca. Constituida bajo el impulso de la Secretaría General de Pesca, está integrada por las CCAA de Andalucía, Asturias, Canarias, Cantabria, Cataluña y

Galicia, así como por los Grupos de Pesca. Web: http://regp.tragsatec.es/

- **APROMAR:** Asociación Empresarial
- **PTEPA:** Plataforma Tecnológica Española de la Pesca y la Acuicultura. Web: http://www.ptepa.org/
- **PT Marítima**: Plataforma Tecnológica del Sector Marítimo Español. Web: http://www.ptmaritima.org/
- **PT-PROTECMA**: Plataforma Tecnológica para la Protección de la Costa y del Medio Marino. Web: http://ptprotecma.es/
- de Acuicultura de España.. Web: http://www.apromar.es/
- **FEADSA**: Federación Española de Agrupaciones de Defensa Sanitaria de Acuicultura. Web: http://www.feadsa.es/
- **ANATÚN**: Asociación Nacional de Acuicultura del Atún Rojo.
- **AECAC:** Asociación de Ciprinicultores y ye Acuicultura Continental de Aguas Templadas.
- **ESACUA**: Asociación Nacional de Acuicultura Continental. Web: https://espesca.com/
- **OPP:** Organización de Productores Piscicultores. Web: http://oppiscicultores.org/
- **AQUAPISCIS:** Organización Interprofesional de la Acuicultura Continental Española. Web: http://aquapiscis.net/

4.3 Patentes

4.3.1. Europeas

A continuación se incluye una selección de patentes publicadas en 2017 directamente relacionadas con la acuicultura obtenido de la Oficina Europea de Patentes. El siguiente llistado incluye el título y el número de publicación. Puede consultarse información adicional en el Anexo I.

Title	Publication number
Floats for aquaculture and manufacturi ng method thereof	KR101745819 (B1)
OFFSHORE AQUACULTURE INSTALLATION	SG10201703134Y (A)
Feed supplement material for use in aquaculture feed	AU2015359335 (A1)
Aquaculture faeces collector apparatus	AU2017100597 (A4)
METHOD; SYSTEM; AND HARVESTING APPARATUS FOR AQUACULTURE TRENCH MAINTENANCE AND HARVESTING	WO2017105660 (A1)
SWIRL-FLOW GAS-LIQUID MIXING DEVICE FOR AQUACULTURE	WO2017094647 (A1)
Recirculating Aquaculture System and Treatment Method for Aquatic Species	US2017150701 (A1)
Aquaculture basket clip and line protector	AU2017203088 (A1)
WATER TREATMENT METHOD FOR USE IN AQUACULTURE SYSTEM	TWI572566 (B)
LIGHTING SYSTEM AND CONTROL FOR AQUACULTURE	US2017135325 (A1)
RETICULATED ANCHORING SYSTEM FOR AQUACULTURE	WO2017075727 (A1)
SHELTER ASSEMBLY STRUCTURE FOR ABALONE AQUACULTURE	WO2017069334 (A1)
AQUACULTURE CONTAINMENT PEN	HK1219619 (A1)

Title	Publication number
Automatic water quality analysis in aquaculture farming using color image processing techniques for manual test kit and remote monitoring system thereof	KR101712377 (B1); KR20170022712 (A)
Dead fish monitoring device and monitoring method applied to aquaculture	CN106550223 (A)
Microorganism water purifying agent used for aquaculture water; and preparation method thereof	CN106542651 (A)
Flow guide part for regulating water environment in aquaculture fry transportation	CN106538451 (A)
Flexible gravity structure floating violent typhoon resistant aquaculture cage	CN106538442 (A)
Lotus root, loach and mud eel stereo aquaculture method	CN106538424 (A)
Mixed disinfecting agent for aquaculture	CN106538592 (A)
Saline and alkaline land aquaculture system	CN206043133 (U)
Modernization healthy aquaculture yang chang's structural configuration	CN206043059 (U)
Aquaculture pond's blowdown equipment	CN206043144 (U)
Intelligence aquaculture execution systems	CN206057854 (U)
Aquaculture oxygen volume of dissolving, salinity, even monitoring devices of temperature degree	CN206057903 (U)
Nano-silver sterilizing and detoxifying agent for aquaculture	CN106538612 (A)
Nano-silver anti-stress agent for aquaculture	CN106538616 (A)
Nano-silver water-purification insecticide for aquaculture	CN106538642 (A)
Aquaculture pond	CN206043139 (U)
Anti -Typhoon aquaculture net case can sink	CN206043124 (U)
Aquaculture environment perceptual arrangement	CN206043138 (U)
Aquaculture biological purifying agent	CN106542642 (A)
Deep sea aquaculture net cage	CN106508766 (A)
Novel aquatic animal industrial aquaculture device	CN106508782 (A)
Multi-layer waterweed planting device special for lobster aquaculture	CN106508660 (A)
Method for producing insect-resistant antibacterial amino acid fertilizer by organism hazardous to marine aquaculture	CN106518394 (A)
Ecological rice and turtle symbiotic aquaculture system	CN106508542 (A)
Solar water lifting and returning device between adjacent aquaculture ponds	CN106508780 (A)
Special algae culture fertilizer used for aquaculture	CN106509479 (A)
Grass carp high density aquaculture water automatic control and management system and control method thereof	CN106527545 (A)
Intelligent circulating aquaculture system	CN106508773 (A)
Industrial aquaculture aeration flow driving system based on wind/solar hybrid generation and control method of system	CN106508778 (A)
Feed for pond turtle aquaculture and preparation method of feed	CN106490315 (A)

Title	Publication number
Special fish feed for promoting reproduction of carp of aquaculture in old courses of Yellow River	CN106490303 (A)
Special fish feed for promoting growth of pelteobagrus fulvidraco of aquaculture in old courses of Yellow River	CN106490302 (A)
Automatic feeding system for factorized aquaculture	CN106489811 (A)
Method for indoor recirculating aquaculture of crayfish	CN106508762 (A)
Tail water treatment and circulation system of shrimp aquaculture pond	CN106495397 (A)
Method and device for removing nitrate in aquaculture seawater through heterotrophism and autotrophy series connection denitrification	CN106495323 (A)
Aquaculture feed	CN106490399 (A)
Special aquaculture system	CN106489809 (A)
Razor clam batch-cleaning drum for aquaculture	CN106490122 (A)
Razor clam automatic salt adding device for aquaculture	CN106489802 (A)
Razor clam automatic catching device for aquaculture	CN106489855 (A)
Aquaculture feed	CN106490400 (A)
Automatic clean recirculating aquaculture pond of industrialization	CN206024898 (U)
Clean recirculating aquaculture pond of industrialization	CN206024895 (U)
Cray recirculating aquaculture system	CN206024876 (U)
Little lobster aquaculture big -arch shelter	CN206024894 (U)
Industrialization aquaculture pond	CN206024897 (U)
Portable aquaculture case	CN206024908 (U)
Track type recirculating aquaculture system	CN206024915 (U)
A fodder feeding device for aquaculture	CN206024887 (U)
Aquaculture case with filtration system	CN206024909 (U)
Gas circulation recirculating aquaculture device	CN206024914 (U)
Water quality improvement agent for aquaculture and preparation method thereof	CN106517453 (A)
Sinonovacula constricta washing and shell brushing robot for aquaculture	CN106509053 (A)
ACCRETION PROMOTION MATERIAL OF EGG AND LARVA OF SHELLFISH AS WELL AS SEEDLING COLLECTION METHOD AND AQUACULTURE METHOD OF SHELLFISH USING THE SAME	JP2017046593 (A)
Semisubmersible aquaculture net cage	CN106472381 (A)
Razor clam automatically capturing machine used in aquaculture	CN106472442 (A)
Aquaculture pond	CN106472392 (A)
Aquaculture feed solution formula and preparation method of aquaculture feed solution	CN106478270 (A)
Prawn aquaculture pond	CN106472390 (A)
Auxiliary aquaculture feed for crucian carps	CN106472823 (A)
Calcium replenishing agent for aquaculture	CN106472873 (A)

Title	Publication number
Watercourse aquaculture trough sewage acquisition and discharge system	CN106472378 (A)
A frame for use in subtidal aquaculture	AU2015218469 (A1)
A oxygen content detection device for aquaculture	CN206020410 (U)
Quality of water environmental detection set for aquaculture	CN206020409 (U)
Sea cucumber aquaculture net cage	CN206005566 (U)
A COMPOSITION AND/OR COMBINATION FOR AQUACULTURE	WO2017044832 (A1)
Water purifying agent for aquaculture and preparation method thereof	CN106477692 (A)
Cleaning device for mixing machine of water purifying agent for aquaculture	CN106424045 (A)
Conical mixer for producing aquaculture bio-fertilizer	CN106422907 (A)
Automatic mixing device for producing water quality improver for aquaculture	CN106422895 (A)
Water temperature monitoring system and method of aquaculture industry	CN106444537 (A)
Treating agent for aquaculture sewage	CN106430628 (A)
Aquaculture water purifying agent	CN106467324 (A)
Integrated sewage purifying system for aquaculture and purifying method	CN106430836 (A)
Method for promoting construction of aquaculture bioflocculation process	CN106430626 (A)
Underwater habitat observation device for aquaculture system	CN106454268 (A)
Shrimp crab, automatic box with a net formula aquaculture production equipment of shellfish aquatic products	CN205993380 (U)
Multi -parameter aquaculture device	CN205993399 (U)
Appearance is observed and controled to quality of water that aquaculture used	CN206002526 (U)
MIXOTROPHIC METHOD OF AQUACULTURE	SG10201610527U (A)
AQUACULTURE SYSTEM AND METHOD	SG11201700747T (A)
Method for purifying marine aquaculture wastewater by adopting bacterium with nitrification function	CN106434420 (A)
Lactobacillus zeae LZ3 and application thereof in aquaculture	CN106434405 (A)
Aquaculture water body sterilization degradation particles and preparation method thereof	CN106417281 (A)
Split aquaculture water quality detection method	CN106441445 (A)
Automatic feed casting device and method for deepwater aquaculture net cage	CN106417140 (A)
Tiny suspended matter removal device and tiny suspended matter removal method for freshwater aquaculture system	CN106430710 (A)
Aquaculture and crop planting combined ecological cycle agriculture technology	CN106417112 (A)
Prawn liver-protecting and growth-promoting agent for aquaculture	CN106421459 (A)
Nano silver sterilizing, detoxifying and immunity enhancing agent used for aquaculture	CN106430471 (A)

Title	Publication number
Automatic feeding device for aquaculture	CN106417139 (A)
Ocean aquaculture device using net type fish cage	KR101701400 (B1)
Novel aquaculture on -line monitoring device	CN205992147 (U)
Marine product aquaculture device and marine product aquaculture method	CN106455526 (A)
Multi-angle stirring rod for producing substrate improving agent for aquaculture	CN106390823 (A)
Freshwater aquaculture pond	CN205962381 (U)
Freshwater aquaculture feeding device	CN205962362 (U)
Aquaculture device	CN205962379 (U)
Aquaculture wastewater innocent treatment device	CN205974176 (U)
Aquaculture wastewater filtering device	CN205965268 (U)
Sedimentation tank for aquaculture wastewater treatment that can regulate and control	CN205965141 (U)
Magnetization recirculating aquaculture device	CN205962372 (U)
Can be along with extra large aquaculture net that encloses of fluctuation in stage heave	CN205962358 (U)
Buoy for aquaculture	CN205962346 (U)
Ozone water treatment device for aquaculture pond	CN106396076 (A)
Oxygen supply device used for aquaculture	CN106386644 (A)
Rana grylio high-yield aquaculture method capable of stabilizing grain income and increasing fishery income	CN106386675 (A)
Aquaculture water treatment device	CN106390551 (A)
Industrialized aquaculture water circulation processing system	CN106386647 (A)
Special aquaculture method for ecological freshwater shrimps	CN106386604 (A)
Agricultural interconnection marine aquaculture method and system	CN106408427 (A)
Siniperca chuatsi domestication aquaculture method for allowing Siniperca chuatsi to eat compound feed	CN106386585 (A)
CONTAINMENT PENS FOR FINFISH AQUACULTURE	US2017042128 (A1)
Aquaculture method and apparatus for marine organisms using cultivating cages	KR20170009407 (A)
Aquaculture fodder supplies system of throwing	CN205946909 (U)
A put fish groove for aquaculture	CN205946922 (U)
Fodder feeding device for aquaculture	CN205946904 (U)
A animal doctor of robot for aquaculture	CN205946871 (U)
Recirculating aquaculture system's waste deposit device	CN205948466 (U)
Aquaculture pond	CN205946912 (U)
Aquaculture pond	CN205946913 (U)
A fish monitoring device that dies for aquaculture	CN205958008 (U)
Environmental protection aquaculture pond with sewage treatment function	CN205953759 (U)

Title	Publication number
Ecological restoration agent for aquaculture water area and preparation method thereof	CN106380004 (A)
Aquaculture automatic control system based on photovoltaic power generation	CN205942376 (U)
Batch production recirculating water aquaculture processing system	CN205933512 (U)
Aquaculture is with quality of water collection system who has wireless transmission function	CN205922493 (U)
AQUATIC LIFE AQUACULTURE TANK	JP6100845 (B2); JP2017023118 (A)
Intelligence aquaculture pond based on big data analysis	CN205922507 (U)
Three -dimensional oxygenation system suitable for biological aquaculture mode of wadding group	CN205922528 (U)
Beasts and birds aquaculture management and data acquisition device of tracing to source	CN205922455 (U)
Aquaculture environment intelligence monitoring device	CN205942463 (U)
Novel aquaculture Chinese herbal medicine composite probiotics preparation and preparation method thereof	CN106377569 (A)
Ultrasonic wave flow sensor for aquaculture	CN106382963 (A)
Aquaculture intelligence monitoring system	CN106383498 (A)
Breeding method for fishing re-circulating aquaculture system	CN106359241 (A)
Method for improving environments of fishery aquaculture lakes	CN106358660 (A)
Disease resistant nutrient solution for aquaculture	CN106360126 (A)
Method for improving base material of saline-alkali soil by utilizing aquaculture sludge	CN106358487 (A)
Oxygen-feeding device applied to aquaculture field	CN106359242 (A)
Compound microorganism preparation capable of degrading aquaculture pollution and preparation method thereof	CN106365325 (A)
Tylorrhynchus heterochaetus semi-artificial seedling culture mudflat aquaculture method	CN106359208 (A)
Special rapid batching device for aquaculture feed	CN106360779 (A)
Underwater video monitoring device for industrialized indoor aquaculture pool	CN106375730 (A)
Bubble oxygenation type dirt collecting system for bottom layer water body of aquaculture pond and dirt collecting method of system	CN106365280 (A)
Fish pond feeding machine for aquaculture	CN106359248 (A)
Chinese herbal preparation for preventing and treating common diseases generated in industrialized aquaculture of penaeus vannamei	CN106361834 (A)
Chinese herbal medicine preparation for preventing and treating skin fester diseases of pseudosciaena crocea in industrial aquaculture	CN106361810 (A)
Intelligent aquaculture system and method based on LABVIEW remote monitoring and control technology	CN106371485 (A)
Method for treating bicarbonate saline-alkali water into water for aquaculture	CN106365360 (A)

Title	Publication number
Recirculating aquaculture system with large annular aquaculture pond as core	CN106359239 (A)
MODULAR SUBMERSIBLE AQUACULTURE RAFT	US2017027136 (A1)
PHYSICO-CHEMICAL PROCESS FOR REMOVAL OF NITROGEN SPECIES FROM RECIRCULATED AQUACULTURE SYSTEMS	US2017029299 (A1)
Automatic change birds poultry aquaculture biogas collection apparatus	CN205917145 (U)
Energy -efficient flocculation clean system that subsides suitable for seal closed circulation recirculating aquaculture	CN205917055 (U)
Modernization aquaculture waste collection processing apparatus	CN205917133 (U)
Aquaculture wastewater purification treatment method and device	CN106348543 (A)
Preparation for removing wild fishes in freshwater aquaculture pond	CN106342725 (A)
Water quality modifying agent for aquaculture	CN106335995 (A)
Biological compound system and method for treating low-temperature high-nutritive-salt waste aquaculture seawater	CN106336015 (A)
Special aquaculture cleaning agent	CN106335994 (A)
Method for efficient alternate aquaculture of macrobrachium rosenbergii and lobsters	CN106332819 (A)
Aquaculture monitoring system based on multiple users	CN106338971 (A)
Loach aquaculture water nutrition additive and preparation method thereof	CN106333135 (A)
Aquaculture PH value intelligent network monitoring data system	CN106338535 (A)
In-water operation fish pond desilting device in saline-alkali soil brackish aquaculture	CN106337460 (A)
Water-change-free and high-density aquaculture method of litopenaeus vannamei	CN106332823 (A)
Intelligent aquaculture system and method	CN106325190 (A)
Novel adhesion medium for fishing light complementation sea cucumber aquaculture pond	CN106305529 (A)
Moss ecological control agent for aquaculture and application thereof	CN106315869 (A)
Buoy type aquaculture water quality monitoring system	CN205910172 (U)
PH sensor for aquaculture	CN205910147 (U)
Saline and alkaline land aquaculture system	CN205902656 (U)
Lightning protection aquaculture water quality monitoring device	CN205910178 (U)
Sensor connecting device for aquaculture	CN205902648 (U)
Be used for aquaculture water quality testing compensation arrangement	CN205910113 (U)
Aquaculture is with dissolving oxygen sensor probe	CN205910122 (U)
Aquaculture pond	CN205902658 (U)
Aquaculture water turbidity detector	CN205910129 (U)
Aquaculture water quality testing sample water filter equipment	CN205903671 (U)
Aquaculture water quality monitoring device that contains constant voltage power supply	CN205910177 (U)

Title	Publication number
Utilize circulating water to carry out aquaculture's facility	CN205902659 (U)
Energy -conserving formula ocean aquaculture device	CN205902653 (U)
Full closed circulation recirculating aquaculture device of aquatic licofelone fodder	CN205902665 (U)
Comprehensive treatment method of aquaculture sewage	CN106315975 (A)
Multi -functional aquaculture experimental system	CN205884402 (U)
Warm clean water circle device of high -efficient energy -conserving water -saving aquaculture environmental protection of intelligence	CN205884398 (U)
Aquaculture wastewater treatment device	CN205893016 (U)
A RELEASABLY SUBMERSIBLE FLOAT ASSEMBLY AND ITS USE IN AQUACULTURE	US2017013809 (A1)
A intelligent solar heating machine for agriculture aquaculture	CN205897565 (U)
SEEDLING AQUACULTURE WATER OF SHELL-FISH SUCH AS SHRIMP, CRAB AND GIANT CLAM, AQUACULTURE METHOD OF SEEDLING USING THE SAME	JP6056949 (B1); JP2017060459 (A)
Aquaculture dissolved oxygen intelligent network monitoring data system	CN106324067 (A)
Swing-type positive pressure aerating apparatus for aquaculture	CN106305581 (A)
Eel aquaculture feed	CN106306369 (A)
Green and healthy pond aquaculture method	CN106305510 (A)
Health-care medicament for aquaculture water and preparation method thereof	CN106310053 (A)
Ecological engineering arranging method for offshore fish type aquaculture ledge pond	CN106305571 (A)
Aquaculture method capable of improving saponin content of sea cucumbers	CN106305506 (A)
Water quality cleaning agent for aquaculture	CN106315860 (A)
Aquaculture monitoring and user remote control method	CN106325181 (A)
Monitoring system for aquaculture	CN106325121 (A)
Method for controlling dissolved oxygen in aquaculture monitoring system and system	CN106325315 (A)
Monitoring data calibration method and monitoring data calibration system of aquaculture monitoring system	CN106325144 (A)
Fault monitoring method and system for aquaculture monitoring system	CN106325316 (A)
Biological filter for aquaculture wastewater	CN106277288 (A)
Nano-silver pond sediment improving agent for aquaculture	CN106277240 (A)
Boats and ships thrust unit for aquaculture	CN205872415 (U)
Aquaculture's novel pond of growing seedlings	CN205865656 (U)
Batch production recirculating water aquaculture south america white shrimp system	CN205865653 (U)
Can arrange snorkeling formula aquaculture net case of silt automatically	CN205865616 (U)
Predacious fish pond recirculating aquaculture system	CN205865650 (U)

Title	Publication number
A device for aquaculture reduction hardness of water	CN205874085 (U)
Integrative pond recirculating aquaculture system of fishing light	CN205865639 (U)
Aquaculture robot of unmanned operation of intelligence	CN205865626 (U)
Aquaculture environmental monitoring system	CN205877879 (U)
Aquaculture method	CN106259107 (A)
Ecological circulating aquaculture and planting method	CN106260575 (A)
Aquaculture nutrition sustained release agent and preparation method thereof	CN106278769 (A)
Judgement method of behaviors of pond cultured freshwater fish on aquaculture aspect	CN106259095 (A)
Respiration type aquaculture pond system and operation method	CN106259140 (A)
Raceway type sealed aquaculture system of high-density and aquaculture method	CN106259137 (A)
Ecological aquaculture method for river crabs	CN106259079 (A)
Freshwater fish ecological aquaculture feed	CN106260744 (A)
Method for evaluating water quality of water for closed water freshwater aquaculture	CN106290276 (A)
Toxicity preventive aquaculture method for penaeus japonicus	CN106259110 (A)
Fish recirculating water aquaculture water treatment pool	CN205848378 (U)
Aquaculture disinfectant composition with sustained-release function and light-sensitive molecule systems of natural plant extract	CN106277239 (A)
Aquaculture quality of water automatic monitoring system	CN205861115 (U)
Aquaculture is with machine of feeding	CN205848366 (U)
ASPARTYL-DIPEPTIDES FOR AQUACULTURE	WO2017068149 (A1)
A METHOD FOR AUTOMATIC SEA LICE MONITORING IN SALMON AQUACULTURE	WO2017068127 (A1)
FLOATING AND SUBMERSIBLE CLOSED-CONTAINED AQUACULTURE FARMING, AND METHOD OF REARING FISH	WO2017026899 (A1)
AQUACULTURE INSTALLATION AND FARMING METHOD	EP3171691 (A1)

Tabla 1. Listado resumido de patentes europeas

4.3.2. Españolas

La siguiente tabla recoge una selección de patentes sobre acuicultura obtenido de la base de datos de la Oficina Española de Patentes y Marcas. El listado ofrece información sobre el título, nº de publicación y solicitante. Puede consultarse información ampliada sobre cada una de las patentes que figuran en esta tabla en el Anexo II.

Título	Nº Publicación	Solicitante
Procedimiento para preparar piensos para acuicultura.		INSTITUTO ESPAÑOL DE OCEANOGRAFIA
Plato de amarre de jaulas flotantes para acuicultura	ES1054441 U (16.07.2003)	QUINTAS Y QUINTAS ESPAÑA, S.L.
Estructura de flotacion para remolque de jaulas para acuicultura marina.	ES1053920 U (01.06.2003)	QUINTAS Y QUINTAS ESPAÑA, S.L.
Composiciones y metodos a utilizar en acuicultura	ES2182963 T3 (16.03.2003)	OMS INVESTMENTS, INC.
Batea para acuicultura.	ES1043507 U (01.01.2000)	MARINA EXPERIMENTAL SOCIEDAD LIMITADA
Dispositivo de energia radiante para el acondicionamiento microclimatico de medio ambientes aislados diseñados para la acuicultura, hidrocultura y el cultivo domestico	ES2128540 T3 (16.05.1999)	ROMEO, GIULIO
Utilizacion del alga isochrysis galbana en acuicultura y para obtencion de acidos grasos poliinsaturados	ES2088366 A1 (01.08.1996)	UNIVERSIDAD DE ALMERIA
Plataforma de acuicultura.	ES2087829 A1 (16.07.1996)	B R HOLDINGS LIMITED
Instalacion autonoma para acuicultura	ES2000961 A6 (01.04.1988)	DEL CAMPO RUIZ DE ALMODOVAR, CESAR
Union de los modulos que componen la estructura de las balsas flotantes empleadas en acuicultura	ES0293011 U (16.12.1986)	TORRES PEREZ,MARTA DE
Jaula flotante para acuicultura	ES0283245 U (01.08.1985)	DIAZ BARCENA,ALFONSO
Palillo para cuerdas de cría de mejillones y acuicultura.	ES1076027 U (30.01.2012)	J.J. CHICOLINO, S.L.
Compostador de subproductos animales no destinados al consumo humano (sandach) procedentes de la acuicultura		UNIVERSIDAD DE CÁDIZ
Red acuicultura con alambres de acero revestido con banda metálica.	ES2372905 T3 (27.01.2012)	NV BEKAERT SA
Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura	ES1074399 U (26.04.2011)	INSTITUTO ESPAÑOL DE OCEANOGRAFIA
Sistema de amarre para acuicultura en el mar.	ES2361668 T3 (21.06.2011)	SUBFLEX LTD

Título	Nº Publicación	Solicitante
Sistema recolector de residuos para bateas y jaulas de acuicultura	ES2323031 A1 (03.07.2009)	ISOCEAN, S.L.
Pienso y procedimiento de alimentacion para peces de piel rosado-rojiza procedentes de la acuicultura, para obtener en los mismos una coloracion y apariencia externa semejante a dichos organismos cuando son obtenidos directamente del mar mediante pesca extractiva.	ES2304835 A1 (16.10.2008)	UNIVERSIDAD DE LAS PALMAS DE GRAN CANARIA
Batea oceanica para acuicultura	ES1070567 U (30.09.2009)	ISOCEAN, S.L
Batea de acuicultura marina para el cultivo del mejillon	ES1063449 U (16.10.2006)	AQUINAVAL, S.L.
Equipo electronico multifuncional y programable para uso en acuicultura.	ES2313812 A1 (01.03.2009)	UNIVERSIDAD POLITECNICA DE CARTAGENA
Dispositivo de analisis morfometrico de imagenes para desarrollar estrategias de alimentacion en acuicultura.	ES2289940 A1 (01.02.2008)	CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)
Estructura flotante para acuicultura y otros usos.	ES1066093 U (16.12.2007)	ALVARIA, S.L.
Estructura flotante marina para acuicultura.	ES2268927 A1 (16.03.2007)	RONAUTICA, S.A.
Dispositivo de analisis morfometrico de imagenes para desarrollar estrategias de alimentacion en acuicultura		CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)
Metodo de acuicultura.	ES2286622 T3 (01.12.2007)	RIBES, ANDRE
Tubos flotadores para la construccion de estructuras articuladas para acuicultura marina	ES1065238 U (16.07.2007)	DOCTOR LOPEZ DE PABLOS,JOSE MARCIAL
Aparato para la acuicultura de peces en mar abierto.	ES2272494 T3 (01.05.2007)	KLEIN, SHLOMO
Piridotienotriazinas sustituidas de formula general i como antiprotozoarios para acuicultura y procedimiento de preparacion.	ES2234439 A1 (16.06.2005)	UNIVERSIDADE DE SANTIAGO DE COMPOSTELA
Piridotienopirimidinas sustituidas de formula general i como antiprotozoarios para acuicultura y procedimiento de preparacion.	ES2234438 A1 (16.06.2005)	UNIVERSIDADE DE SANTIAGO DE COMPOSTELA
Acuicultura de gusanos marinos.	ES2254850 T3 (16.06.2006)	SEABAIT LIMITED
Piridopirimidinas sustituidas de formula general i como antiprotozoarios para acuicultura y procedimiento de preparacion.	ES2232317 A1 (16.05.2005)	UNIVERSIDADE DE SANTIAGO DE COMPOSTELA
Embarcacion de asistencia a granjas de acuicultura marina.	ES1059889 U (16.06.2005)	AQUINAVAL, S.L.
Nuevos antibioticos activos frente al vibrio anguillarum y sus aplicaciones en cultivos de peces, crustaceos, moluscos y otras actividades de acuicultura.	ES2204294 A1 (16.04.2004)	UNIVERSIDADE DE SANTIAGO DE COMPOSTELA

Título	Nº Publicación	Solicitante
Acuicultura de gusanos marinos.	ES2216161 T3 (16.10.2004)	SEABAIT LIMITED
Naftiridinas con estructura general i como antiprotozoarios para acuicultura y procedimiento de preparacion.	ES2208093 A1 (01.06.2004)	UNIVERSIDADE DE SANTIAGO DE COMPOSTELA

Tabla 2. Listado resumido de patentes españolas

4.4 Proyectos de I+D

A continuación se incluye un listado resumido de proyectos de la temática de acuicultura vinculada al crecimiento azul y con financiación europea, clasificado por programas. En el Anexo III puede consultarse información ampliada sobre los proyectos de dicho listado.

4.4.1. FP7 Environment.

- **DEVOTES.** DEVelopment Of innovative Tools for understanding marine biodiversity and assessing good Environmental Status.
  http://www.euromarinenetwork.eu/

- **EUROMARINE**. Integration of European marine research networks of excellence – Euromarine.
  http://www.euromarinenetwork.eu/

- **NeXOS.** Next generation, Cost-effective, Compact, Multifunctional Web Enabled Ocean Sensor Systems Empowering Marine, Maritime and Fisheries Management.
  http://www.nexosproject.eu/

- **PERSEUS.** Policy-oriented marine Environmental Research in the Southern EUropean Seas.
  http://www.perseus-net.eu

- **EURO-BASIN.** European Union Basin-scale Analysis, Synthesis and Integration.
  http://www.euro-basin.eu

4.4.2. FP7 KBBE - Cooperación: Alimentación, agricultura y biotecnología

- **AQUAMED.** The future of research on aquaculture in the Mediterranean region.
  http://www.aquamedproject.net/

- **COFASP.** Strengthening cooperation in European research on sustainable exploitation of marine resources in the seafood chains-ERANET.
  http://www.cofasp.eu/

- **MARINEBIOTECH.** CSA (Coordinating) in Marine Biotechnology.
  http://www.marinebiotech.eu/

- **MG4U.** Marine Genomics for Users.
  http://www.mg4u.eu/

- **VECTORS.** Vectors of Change in Oceans and Seas Marine Life, Impact on Economic Sectors
  http://www.marine-vectors.eu/

4.4.3. Otras convocatorias de FP7.

- **ECOAQUA**. Research and Technology to enhance excellence in Aquaculture development under an Ecosystem approach.
  http://ecoaqua.ulpgc.es/

- **EMBRC.** European Marine Biological Resource Centre preparatory phase.
  http://www.embrc.eu/

- **MERMAID.** Innovative Multi-purpose off-shore platforms: planning, Design and operation.
  http://www.vliz.be/projects/mermaidproject/

- **OPEC.** OPerational ECology: Ecosystem forecast products to enhance marine GMES applications.
  http://marine-opec.eu/

- **REMCAP.** Resource Efficient Maritime Capacity.
  http://www.remcap.eu/

- **SFS.** Sea For Society. http://seaforsociety.eu/np4/home.html

- **CACHE.** CAlcium in a CHanging Environment. http://cordis.europa.eu/project/rcn/109120_en.html

4.4.4. H2020 Societal Challenges

- **CERES**. Climate change and European aquatic RESources. https://ceresproject.eu/

- **MARIBE**. Marine Investment for the Blue Economy. https://maribe.eu/

- **OCEANFISH**. Open Ocean Fish farms. http://cordis.europa.eu/project/rcn/198394_en.html

- **PrimeFish**. Developing Innovative Market Orientated Prediction Toolbox to Strengthen the Economic Sustainability and Competitiveness of European Seafood on Local and Global markets. http://www.primefish.eu/

- **TAPAS**. Tools for Assessment and Planning of Aquaculture Sustainability. http://tapas-h2020.eu/

4.4.5. H2020-EU.2.3.1. - Mainstreaming SME support

- **Accordion Bioreactor**. An innovative high capacity Accordion bioreactor technology for high performance and low cost microalgae production. http://cordis.europa.eu/project/rcn/207132_en.html

- **BLUE IODINE**. Boost BLUE economy trough market uptake an innovative seaweed bioextract for IODINE fortification. http://cordis.europa.eu/project/rcn/196245_en.html

- **BlueAquality**. Blue Aquality. http://cordis.europa.eu/project/rcn/207950_en.html

- **BMX-11**. Providing Antifouling Additives for Marine Paints Inspired by Nature and Engineered for Industries.
  http://cordis.europa.eu/project/rcn/211134_en.html

- **CryoPlankton**. A replacement of the sub-optimal live feeds used at hatcheries today with a new cryopreserved live diet for the improved and efficient production of juveniles in marine aquaculture.
  http://cordis.europa.eu/project/rcn/194751_en.html

- **CryoPlankton2**. Cryopreservation of marine planktonic crustacean nauplii for innovative and cost-effective live feed diet in fish juvenile aquaculture.
  http://cordis.europa.eu/project/rcn/200101_en.html

- **ENTOMICSBLUEGROWTH**. Investigating the commercial feasibility of a novel biological enhancement technology for creating a sustainable, high value, insect-derived protein supplement for the EU aquaculture market.
  http://cordis.europa.eu/project/rcn/210438_en.html

- **Fishtimator**. Continual Acoustic Based Multifunctional Cage Mounted Fish estimator Deigned To Reduce Feed Waste, Fish Mortality, and Predator and Fish Escape Control.
  http://cordis.europa.eu/project/rcn/198011_en.html

- **ICE2LAST**. Innovative stunning technology based on a natural anesthetizing agent in ice to improve animal welfare and extend shelf-life of farmed fish.
  http://cordis.europa.eu/project/rcn/205129_en.html

- **IFASA**. Insects For a Sustainable Aquaculture.
  http://cordis.europa.eu/project/rcn/207144_en.html

- **MYSIS**. A novel weaning diet to optimize performance of farmed shrimp larvae.
  http://cordis.europa.eu/project/rcn/208030_en.html

- **NEMAQUA**. Nematodes as the world first pathogen free, ready-to-use and sustainable live feed for larval aquaculture industry.
  http://cordis.europa.eu/project/rcn/198856_en.html

- **NEPTUN**. Novel closed-cage system for high-value marine aquaculture.
  http://cordis.europa.eu/project/rcn/204299_en.html

- **Qlice**. Environmentally-friendly system to combat sea lice in salmon farms.
  http://cordis.europa.eu/project/rcn/205275_en.html

- **SAKLAS**. Feasibility of Salmon and Kingfish Land-Based Aquaculture Systems, Phase 1.
  http://cordis.europa.eu/project/rcn/205096_en.html

- **SELAM**. Large-scale piloting and market maturation of a novel process for sustainable European lobster aqua- and mariculture.
  http://cordis.europa.eu/project/rcn/199205_en.html

- **smartFEEsh**. Smart FEEding Systems for Hatcheries: Automatic central feeding system of live food and microdiets for farmed fingerlings.
  http://cordis.europa.eu/project/rcn/208016_en.html

- **SubCage**. Submersible Tension Leg Fish Cage for Mariculture in Unsheltered and Offshore Areas
  http://cordis.europa.eu/project/rcn/199502_en.html

4.4.6. Otras convocatorias de H2020 y EMFF

- **ALGAE4A-B**. Development of Microalgae-based novel high added-value products for the Cosmetic and Aquaculture industry.
  http://cordis.europa.eu/project/rcn/200152_en.html

- **BlueBRIDGE**. Building Research environments for fostering Innovation, Decision making, Governance and Education to support Blue growth.
  http://www.bluebridge-vres.eu/

- **Entrefish**. Sustainable entrepreneurship for stronger skills and new employment in fishery's and aquaculture's SMEs.
- https://ec.europa.eu/easme/en/emff-projects

- **FAIMMAC**. Fishery and aquaculture integrated management model along the Adriatic coasts.
  https://ec.europa.eu/easme/en/emff-projects

- **INvertebrateIT**. Disruptive and forward-looking opportunities for competitive and sustainable aquaculture.
  https://ec.europa.eu/easme/en/emff-projects

- **MarTERA**. Maritime and Marine Technologies for a New ERA. https://www.martera.eu/start

- **PerformFISH**. Consumer driven Production: Integrating Innovative Approaches for Competitive and Sustainable Performance across the Mediterranean Aquaculture Value Chain. http://www.performfish.eu/

5. Oportunidades para la financiación de actividades de I+D en acuicultura.

5.1 Europa

Programas de I+D para la acuicultura.

EMFF

DGmare

DGRTD

2017 SEPTIEMBRE

CONVOCATORIA

LIFE

CONVOCA

Comisión Europea mediante el programa LIFE.

LINK

http://ec.europa.eu/environment/life/

CONVOCATORIA

Eurostars

CONVOCA

Programa co-financiado por la UE y los Estados participantes.

LINK

https://www.eurostars-eureka.eu/

2017 SEPTIEMBRE A NOVIEMBRE

CONVOCATORIA

SMEInst-08-2016-2017 phase 1 Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth.

CONVOCA

Comisión Europea mediante el Instrumento PYME de H2020.

LINK

http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/smeinst-08-2016-2017.html

2017 OCTUBRE

CONVOCATORIA

SMEInst-08-2016-2017 phase 2 Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth

CONVOCA

Comisión Europea mediante el Instrumento PYME de H2020.

LINK

http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/smeinst-08-2016-2017.html

2017 OCTUBRE

CONVOCATORIA

ENPI CBCMED

CONVOCA

Programa financiado por la Unión Europea.

LINK

http://www.enpicbcmed.eu/enicbcmed-2014-2020

2018 PRIMERA MITAD

CONVOCATORIA

Interreg Med

CONVOCA

Programa financiado por el Fondo Europeo de Desarrollo Regional.

LINK

https://interreg-med.eu/

2017 SEPTIEMBRE A NOVIEMBRE

CONVOCATORIA

Interreg Europe

CONVOCA

Programa financiado por el Fondo Europeo de Desarrollo Regional.

LINK

https://www.interregeurope.eu/

2019 FEBRERO

CONVOCATORIA

CE-BG-07-2019 Multi-purpose and multi-use of the marine space, offshore and near-shore: pilot demonstrators

CONVOCA

Comisión Europea mediante H2020.

ESTADO

Borrador

2019 FEBRERO 2019-2020

CONVOCATORIA

LC-BG-11-2019 Coordination of marine and maritime research and innovation activities in the Black Sea

CONVOCA

Comisión Europea mediante H2020.

ESTADO

Borrador

2019 FEBRERO 2019-2020

CONVOCATORIA

DT-BG-09-2018-2019-2020 The Future of the Oceans Flagship Initiative

CONVOCA

Comisión Europea mediante H2020.

ESTADO

Borrador

5.2 España

En España la financiación de las actividades de investigación científica y desarrollo relacionadas con la acuicultura corre a cargo de entidades estatales, autonómicas, comunitarias y empresariales. Las diferentes entidades financiadoras de investigación científica y desarrollo tales como:

- Comisión Interministerial de Ciencia y Tecnología (CICYT).
- Centro para el Desarrollo Tecnológico Industrial (CDTI).
- Consejerías de las Comunidades Autónomas (CCAA).
- Secretaría General de Pesca (SGP).

La Secretaría General de Pesca, a través de las Ayudas a los Planes Nacionales de Acuicultura financia proyectos de carácter innovador de interés a nivel nacional, enfocados al refuerzo de la competitividad del sector a través del desarrollo de conocimientos técnicos, científicos u organizativos en las explotaciones acuícolas (FAO, 2017).

A fecha de publicación de este informe las convocatorias de ayudas abiertas a nivel nacional son las siguientes:

- Convocatoria de concesión de ayudas, en régimen de concurrencia competitiva, para el desarrollo de actividades de colaboración y representación en el ámbito de la biodiversidad, el cambio climático y el desarrollo sostenible 2017.
  Fundación Biodiversidad
  Plazo: 30/07/2017

- Convocatoria de concesión de ayudas de la Fundación Biodiversidad, en régimen de concurrencia no competitiva, para la cofinanciación de proyectos apoyados por el programa LIFE en el ámbito de la biodiversidad 2017.
  Fundación Biodiversidad
  Plazo: 16/10/2017

- Premio "Jacumar" de investigación en acuicultura. BOE nº 170, de 18 de julio de 2017.
  Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente.
  Plazo: 19/09/2017

- Orden de 5 de junio de 2017 por la que se establece la convocatoria para la concesion de ayudas compensatorias a determinada flota pesquera que faena en aguas adyacentes al Peñon de Gibraltar.
  Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente.
  Plazo: 20 días hábiles al siguiente a su publicación

6. Legislación y normativa.

- Resolución de 8 de marzo de 2017, de la Secretaría General de Pesca, por la que se publica el listado de denominaciones comerciales de especies pesqueras y de acuicultura admitidas en España.
- Reglamento de Ejecución (UE) 2016/1141 de la Comisión, de 13 de julio de 2016, por el que se adopta una lista de especies exóticas invasoras preocupantes para la Unión de conformidad con el Reglamento (UE) nº 1143/2014 del Parlamento Europeo y del Consejo.
- Real Decreto 542/2016, de 25 de noviembre, sobre normas de sanidad y protección animal durante el transporte.
- Orden AAA/957/2016, de 9 de junio, por la que se aprueban las bases reguladoras de las ayudas a la investigación en los Planes Nacionales de Acuicultura.
- Reglamento de Ejecución (UE) 2016/673 de la Comisión, de 29 de abril de 2016, que modifica el Reglamento (CE) nº 889/2008, por el que se establecen disposiciones de aplicación del Reglamento (CE) nº 834/2007 del Consejo sobre producción y etiquetado de los productos ecológicos, con respecto a la producción ecológica, su etiquetado y su control.
- Resolución de 28 de marzo de 2016, de la Secretaría General de Pesca, por la que se publica el listado de denominaciones comerciales de especies pesqueras y de acuicultura admitidas en España.
- REGLAMENTO (UE) 2016/429 DEL PARLAMENTO EUROPEO Y DEL CONSEJO de 9 de marzo de 2016 relativo a las enfermedades transmisibles de los animales y por el que se modifican o derogan algunos actos en materia de sanidad animal.
- Ley 3/2015, de 29 de diciembre, de medidas en materia de gestión integrada de calidad ambiental, de aguas, tributaria y de sanidad animal.
- DECISIÓN DE EJECUCIÓN (UE) 2015/1554 DE LA COMISIÓN de 11 de septiembre de 2015 por la que se establecen disposiciones de aplicación de la Directiva 2006/88/CE en lo que respecta a los requisitos de vigilancia y los métodos de diagnóstico.
- Resolución de 26 de febrero de 2015, de la Secretaría General de Pesca, por la que se publica el listado de denominaciones comerciales de especies pesqueras y de acuicultura admitidas en España.
- Ley 14/2014, de 26 de diciembre, de Armonización y Simplificación en materia de Protección del Territorio y de los Recursos Naturales.

- Reglamento (UE) nº 1143/2014 del Parlamento Europeo y del Consejo, de 22 de octubre de 2014, sobre la prevención y la gestión de la introducción y propagación de especies exóticas invasoras.
- DIRECTIVA 2014/89/UE DEL PARLAMENTO EUROPEO Y DEL CONSEJO de 23 de julio de 2014 por la que se establece un marco para la ordenación del espacio marítimo.
- Real Decreto 526/2014, de 20 de junio, por el que se establece la lista de las enfermedades de los animales de declaración obligatoria y se regula su notificación.
- Real Decreto 578/2014, de 4 de julio, por el que se dictan disposiciones para la aplicación en España de la normativa de la Unión Europea relativa a la alimentación de animales de producción con determinados piensos de origen animal.
- Dictamen del Comité Económico y Social Europeo sobre la Comunicación de la Comisión el Parlamento Europeo, al Consejo, al Comité Económico y Social Europeo y al Comité de las Regiones — Directrices estratégicas para el desarrollo sostenible de la acuicultura de la UE.
- Real Decreto 37/2014, de 24 de enero, por el que se regulan aspectos relativos a la protección de los animales en el momento de la matanza.
- "Reglamento de Ejecución (UE) nº 1364/2013 de la Comisión, de 17 de diciembre de 2013, que modifica el Reglamento (CE) nº 889/2008, por el que se establecen disposiciones de aplicación del Reglamento (CE) nº 834/2007 del Consejo en lo que atañe a la utilización de juveniles de la acuicultura no ecológica y de material de reproducción de moluscos bivalvos no ecológicos en la acuicultura ecológica. "
- Ley 21/2013, de 9 de diciembre, de evaluación ambiental.
- Reglamento de Ejecución (UE) nº 1030/2013 de la Comisión, de 24 de octubre de 2013, que modifica el Reglamento (CE) nº 889/2008, por el que se establecen disposiciones de aplicación del Reglamento (CE) nº 834/2007 del Consejo sobre producción y etiquetado de los productos ecológicos, con respecto a la producción ecológica, su etiquetado y su control.
- Real Decreto 815/2013, de 18 de octubre, por el que se aprueba el Reglamento de emisiones industriales y de desarrollo de la Ley 16/2002, de 1 de julio, de prevención y control integrados de la contaminación.

7. Conclusiones.

Los principales obstáculos a los que se enfrentan las empresas españolas de acuicultura, según el informe de la Acuicultura en España 2016 (Apromar, 2016), están relacionados con la falta de coordinación o implicación de las diversas administraciones públicas, la falta de ordenación espacial, la excesiva regulación administrativa, la desigualdad político-administrativa entre comunidades autónomas o las restricciones y complejidades de la legislación europea en materia de sanidad.

En términos de competitividad, teniendo en cuenta que la Unión europea importa más de la mitad de los productos acuáticos de países en vías de desarrollo, las empresas españolas se enfrentan a un nivel muy por encima de exigencia ambiental, de sanidad, o social.

El etiquetado de cara al consumidor final es otro de los factores que influye en la desigualdad de oportunidades. La falta de información en el etiquetado juega a favor de los productos de terceros países, ya que pueden ofrecer precios inferiores debido al menor nivel de exigencia requerido a sus productos.

Frente a estas dificultades, no obstante, conviene recordar que España consta de casi 8 000 Km de costa con una orografía y un clima muy diversos que proporcionan las características físico-químicas y ambientales necesarias para el desarrollo de la acuicultura marina; y que la producción de peces marinos durante los últimos años viene experimentando un crecimiento importante. Este crecimiento se debe fundamentalmente a la dorada Sparus aurata, a la lubina Dicentrarchus labrax y al rodaballo Psetta maxima (FAO, 2017).

[2]Por otra parte, en un contexto supranacional, la **Unión Europea** es el octavo productor mundial en términos de volumen (su producción supone el 1,53% del total, detrás de países como China (60,75%), o la suma de Indonesia, India, Vietnam, Filipinas, Bangladesh o Corea del Sur, que aportan el 25,78% del volumen total mundial) y España se encuentra entre los 5 productores principales europeos, con Francia, Reino Unido, Italia y Grecia.

Así mismo, el promedio de consumo de pescado por año en la UE es de 23,1 kgs por persona, de los que un 24% proviene de la acuicultura. Los productos de acuicultura que se consumen en Europa provienen en un 43% de producción propia, mientras que importamos el 57% restante.

[2] Datos extraídos de la Dirección Europea de Asuntos Marítimos y Pesca

Nueve *de cada diez mejillones consumidos en la UE son productos acuícolas*.

Europa produce 1,25 millones de toneladas cada año, de las cuales:

- El 50 % son **moluscos y crustáceos.**
- El 27% corresponde a **pescado marino.**
- El 23% restante es **pescado de agua dulce.**

Las especies más producidas en la Unión Europea son: Mejillón, trucha, salmón, ostra, carpa, besugo y lubina.

Para finalizar, una previsión alentadora de la Comisión Europea anuncia que la acuicultura sostenible es necesaria porque la pesca por sí sola no satisfará la creciente demanda mundial y la acuicultura, además, puede ayudar a reducir la presión sobre las poblaciones de peces silvestres.

8. Bibliografía

AENOR. (2011). Gestión de la I+D+i: Sistema de vigilancia tecnológica e inteligencia competitiva. *UNE 166000 EX, UNE 166001 EX, UNE 166002 EX*. Madrid: AENOR.

Apromar. (2016). *La acuicultura en España*. Observatorio Español de Acuicultura (Oesa).

CETISME, P. (2003). *Inteligencia Económica y Tecnológica. Guía para principiantes y profesionales*. Comunidades Europeas.

Degoul, P. (1992). *Le pouvoir de l'information avancée face au règne de la complexité*. Annales de Mines.

Escorsa, P. R. (2001). *De la vigilancia tecnológica a la inteligencia competitiva*. Pearson Educación.

Escorsa, Pere, Pilar Lázaro Martínez, Círculo de Innovación en Biotecnología. (2007). Intec: la inteligencia competitiva, factor clave para la toma de decisiones estratégicas en las organizaciones. *Colección mi+d*. Fundación Madri+d para el Conocimiento.

Europea, C. (2012). *COMUNICACIÓN DE LA COMISIÓN AL PARLAMENTO EUROPEO, AL CONSEJO, AL COMITÉ ECONÓMICO Y SOCIAL EUROPEO Y AL COMITÉ DE LAS REGIONES - Crecimiento azul Oportunidades para un crecimiento marino y marítimo sostenible*. Obtenido de http://eur-lex.europa.eu/legal-content/ES/TXT/?uri=CELEX%3A52012DC0494&from=EN&lang3=choose&lang2=choose&lang1=ES

Europea, C. (s.f.). *Acuicultura*. Obtenido de https://ec.europa.eu/fisheries/cfp/aquaculture_es

Europea, C. (s.f.). *Crecimiento Azul*. Obtenido de https://ec.europa.eu/maritimeaffairs/policy/blue_growth_es

F. Palop, J. V. (Febrero de 1995). Vigilancia Tecnológica e Inteligencia Competitiva. *Estudios Cotec, nº 15*. Cotec.

FAO. (12 de Mayo de 2017). *FAO 2005-2017. National Aquaculture Sector Overview. Visión general del sector acuícola nacional - España*. (FAO, Ed.) Obtenido de http://www.fao.org/fishery/countrysector/naso_spain/es

9. Anexo I. Patentes europeas

Title		
Publication number	**Applicant(s)**	**International classification**
Floats for aquaculture and manufacturi ng method thereof		
KR101745819 (B1)	박대교	A01K75/04; A01K75/00; B29C47/00
OFFSHORE AQUACULTURE INSTALLATION		
SG10201703134Y (A)	MENARD SERGE [FR]	
Feed supplement material for use in aquaculture feed		
AU2015359335 (A1)	DSM IP ASSETS BV	A23K10/16; A23K20/158; A23K50/80
Aquaculture faeces collector apparatus		
AU2017100597 (A4)	WEST SIMON	A01K63/10
METHOD; SYSTEM; AND HARVESTING APPARATUS FOR AQUACULTURE TRENCH MAINTENANCE AND HARVESTING		
WO2017105660 (A1)	HUMPHREY ROBERT [US]	A01K79/00; B65G67/08; B65G67/22; E02B1/00; E02B3/02; E02B5/08
SWIRL-FLOW GAS-LIQUID MIXING DEVICE FOR AQUACULTURE		
WO2017094647 (A1)	SHIMOYAMA TSUYOSHI [JP]	A01K63/04; B01F3/04; B01F5/00; B01F5/04; B01F15/00; B01F15/02; C02F3/22
Recirculating Aquaculture System and Treatment Method for Aquatic Species		
US2017150701 (A1)	F&T WATER SOLUTIONS LLC [US]; NATURALSHRIMP INC [US]	A01K61/10; A01G1/00; A01G31/00; A01G33/00; A01K29/00; A01K61/54; A01K61/59; A01K63/04; C02F1/28; C02F1/32; C02F1/46; C02F1/461; C02F1/467; C02F1/68; C02F1/78; G06T7/00
Aquaculture basket clip and line protector		
AU2017203088 (A1)	SEAPA PTY LTD	A01K61/00; F16B2/08; F16G11/02
WATER TREATMENT METHOD FOR USE IN AQUACULTURE SYSTEM		
TWI572566 (B)	LIN JAMES C [TW]	C02F1/78; C02F1/32; C02F1/66; C02F1/68; C02F3/04; C02F3/32; C02F3/34
LIGHTING SYSTEM AND CONTROL FOR AQUACULTURE		
US2017135325 (A1)	ONCE INNOVATIONS INC [US]	A01K63/06; A01K63/00; F21V23/00; H05B33/08
RETICULATED ANCHORING SYSTEM FOR AQUACULTURE		
WO2017075727 (A1)	BUSCHMANN SCHIRMER WALTER FRANCISCO ALFREDO [CL]	A01K61/00; B63B21/00; B63B21/04; B63B35/00; B63B35/26; F16G11/00
SHELTER ASSEMBLY STRUCTURE FOR ABALONE AQUACULTURE		
WO2017069334 (A1)	YOUNGSINTECH CO LTD [KR]	A01K61/00

Title		
Publication number	**Applicant(s)**	**International classification**
AQUACULTURE CONTAINMENT PEN		
HK1219619 (A1)	OCEAN FARM TECH INC [US]	A01K
Dead fish monitoring device and monitoring method applied to aquaculture		
CN106550223 (A)	HUNAN INST OF SCIENCE AND TECH	H04N7/18; G08B21/00
Microorganism water purifying agent used for aquaculture water; and preparation method thereof		
CN106542651 (A)	DALIAN SEM BIOLOGICAL ENG TECH CO LTD	C02F3/34; C02F3/32; C02F101/10; C02F103/20
Flow guide part for regulating water environment in aquaculture fry transportation		
CN106538451 (A)	BEIHAI YISHENGYUAN FARMERS CO LTD	A01K63/02; A01K63/04
Flexible gravity structure floating violent typhoon resistant aquaculture cage		
CN106538442 (A)	SUN YAFEI	A01K61/60 A01K61/65
Lotus root, loach and mud eel stereo aquaculture method		
CN106538424 (A)	JIESHOU ZHONGJIAN HOUSEHOLD FARM	A01K61/10 A01G1/00 A23K10/20 A23K10/22 A23K10/26 A23K10/30 A23K10/37 A23K50/80
Mixed disinfecting agent for aquaculture		
CN106538592 (A)	SHAANXI RES DESIGN INST OF PETROLEUM CHEMICAL IND	A01N57/20 A01N35/04 A01N43/80 A01P1/00 A01P3/00 C02F1/50
Saline and alkaline land aquaculture system		
CN206043133 (U)	SHANDONG SUNWAY LANDSCAPE TECH CO LTD	A01K63/00 A01K61/80 A01K63/04 A01K63/06
Modernization healthy aquaculture yang chang's structural configuration		
CN206043059 (U)	UNIV SICHUAN AGRICULTURAL	A01K1/03 A01F25/14 A01K13/00
Aquaculture pond's blowdown equipment		
CN206043144 (U)	SUZHOU MUNICIPAL SHENHANG ECO-TECHNOLOGY DEV CO LTD	A01K63/04

Title		
Publication number	**Applicant(s)**	**International classification**
Intelligence aquaculture execution systems		
CN206057854 (U)	SUZHOU MUNICIPAL SHENHANG ECO-TECHNOLOGY DEV CO LTD	G05B19/04
Aquaculture oxygen volume of dissolving, salinity, even monitoring devices of temperature degree		
CN206057903 (U)	UNIV SICHUAN AGRICULTURAL	G05B19/042 G01D21/02 G01N33/18
Nano-silver sterilizing and detoxifying agent for aquaculture		
CN106538612 (A)	FANGCHENGGANG JINSHA OCEAN SCIENCE & TECH CO LTD	A01N65/12 A01N59/16 A01P1/00 A01P3/00 C02F1/50
Nano-silver anti-stress agent for aquaculture		
CN106538616 (A)	FANGCHENGGANG JINSHA OCEAN SCIENCE & TECH CO LTD	A01N65/24 A01N59/16 A01P1/00 A01P3/00 C02F1/50
Nano-silver water-purification insecticide for aquaculture		
CN106538642 (A)	FANGCHENGGANG JINSHA OCEAN SCIENCE & TECH CO LTD	A01N65/46 A01N59/16 A01P1/00 A01P3/00 A01P7/04 C02F1/50
Aquaculture pond		
CN206043139 (U)	FUSHUN SHIHEZI AQUACULTURE PROFESSIONAL COOP	A01K63/00
Anti -Typhoon aquaculture net case can sink		
CN206043124 (U)	SUN YAFEI	A01K61/60
Aquaculture environment perceptual arrangement		
CN206043138 (U)	UNIV LINGNAN NORMAL	A01K63/00 G01D21/02
Aquaculture biological purifying agent		
CN106542642 (A)	YI DAJUN	C02F3/34
Deep sea aquaculture net cage		
CN106508766 (A)	HUBEI MARINE ENG EQUIPMENT RES INST CO LTD	A01K61/60
Novel aquatic animal industrial aquaculture device		

Title		
Publication number	**Applicant(s)**	**International classification**
CN106508782 (A)	YANTAI INST OF AQUATIC PRODUCT	A01K63/04 A01K63/00
Multi-layer waterweed planting device special for lobster aquaculture		
CN106508660 (A)	HUANG JIANGLONG	A01G33/00 A01G31/02
Method for producing insect-resistant antibacterial amino acid fertilizer by organism hazardous to marine aquaculture		
CN106518394 (A)	XIONG TINGZHEN	C05G3/00 C05C11/00 C05G3/02
Ecological rice and turtle symbiotic aquaculture system		
CN106508542 (A)	HUANG JIANGLONG	A01G16/00 A01K67/02
Solar water lifting and returning device between adjacent aquaculture ponds		
CN106508780 (A)	FISHERY MACHINERY AND INSTR RES INST CHINESE ACAD OF FISHERY SCIENCES	A01K63/04
Special algae culture fertilizer used for aquaculture		
CN106509479 (A)	FANGCHENGGANG JINSHA OCEAN SCIENCE & TECH CO LTD	A23K50/80 A23K10/22 A23K10/26 A23K10/30 A23K20/142 A23K20/163 A23K20/174 A23K20/20 A23K20/26 C05G3/00
Grass carp high density aquaculture water automatic control and management system and control method thereof		
CN106527545 (A)	LYU ZIHAN	G05D27/02 A01K63/04 A01K63/06 C02F9/14 G05B19/042 C02F103/20
Intelligent circulating aquaculture system		
CN106508773 (A)	QINGDAO ROBOTFISH OCEAN TECH CO LTD	A01K63/00 A01K63/04 A01K63/06
Industrial aquaculture aeration flow driving system based on wind/solar hybrid generation and control method of system		
CN106508778 (A)	UNIV JIANGSU	A01K63/04 H02S10/12

Title		
Publication number	**Applicant(s)**	**International classification**
Feed for pond turtle aquaculture and preparation method of feed		
CN106490315 (A)	TANG CHUANYOU	A23K10/22 A23K10/26 A23K10/30 A23K10/38 A23K20/163 A23K40/10 A23K50/80
Special fish feed for promoting reproduction of carp of aquaculture in old courses of Yellow River		
CN106490303 (A)	DANGSHAN COUNTY XINHUI CULTURE CO LTD	A23K10/12 A23K10/18 A23K10/20 A23K10/22 A23K10/26 A23K10/30 A23K10/37 A23K10/38 A23K50/80
Special fish feed for promoting growth of pelteobagrus fulvidraco of aquaculture in old courses of Yellow River		
CN106490302 (A)	DANGSHAN COUNTY XINHUI CULTURE CO LTD	A23K10/12 A23K10/18 A23K10/26 A23K10/30 A23K10/37 A23K20/174 A23K50/80
Automatic feeding system for factorized aquaculture		
CN106489811 (A)	FISHERY MACHINERY AND INSTR RES INST CHINESE ACAD OF FISHERY SCIENCES	A01K61/80
Method for indoor recirculating aquaculture of crayfish		
CN106508762 (A)	KONG JIEHAO	A01K61/59
Tail water treatment and circulation system of shrimp aquaculture pond		
CN106495397 (A)	FANGCHENGGANG XINRUN BREEDING CO LTD	C02F9/14 C02F103/20
Method and device for removing nitrate in aquaculture seawater through heterotrophism and autotrophy series connection denitrification		
CN106495323 (A)	RES CENTER FOR ECO-ENVIRONMENTAL SCIENCES CHINESE ACAD OF SCIENCES GOE MARINE ECOLOGICAL ENG (BEIJING) CO LTD	C02F3/30 C02F101/16
Aquaculture feed		

Title		
Publication number	**Applicant(s)**	**International classification**
CN106490399 (A)	WEIHAI YULONG AQUATIC PRODUCT DEV CO LTD	A23K50/80 A23K10/18 A23K10/30 A23K10/37 A23K20/147 A23K20/24
Special aquaculture system		
CN106489809 (A)	AGRICULTURAL QUALITY STANDARDS AND TESTING TECH INST FUJIAN ACAD OF AGRICULTURAL SCIENCES	A01K61/80 A01K61/51
Razor clam batch-cleaning drum for aquaculture		
CN106490122 (A)	LIN FANGJIE	A22C29/04
Razor clam automatic salt adding device for aquaculture		
CN106489802 (A)	LIN FANGJIE	A01K61/50
Razor clam automatic catching device for aquaculture		
CN106489855 (A)	LIN FANGJIE	A01K80/00
Aquaculture feed		
CN106490400 (A)	WEIHAI YULONG AQUATIC PRODUCT DEV CO LTD	A23K50/80 A23K10/20 A23K10/22 A23K10/26 A23K10/30 A23K10/37 A23K20/158 A23K20/20
Automatic clean recirculating aquaculture pond of industrialization		
CN206024898 (U)	PUTIAN PUSHENG FISHERIES SCIENCE & TECH CO LTD	A01K63/00 A01G9/02 A01K61/80 A01K63/04
Clean recirculating aquaculture pond of industrialization		
CN206024895 (U)	PUTIAN PUSHENG FISHERIES SCIENCE & TECH CO LTD	A01K63/00 A01G9/02 A01K63/04
Cray recirculating aquaculture system		
CN206024876 (U)	HUNAN JIN'OU AGRICULTURAL TECH CO LTD	A01K61/00 A01K63/04
Little lobster aquaculture big -arch shelter		
CN206024894 (U)	HUNAN JIN'OU AGRICULTURAL TECH CO LTD	A01K63/00
Industrialization aquaculture pond		

Title		
Publication number	**Applicant(s)**	**International classification**
CN206024897 (U)	FUJIAN HENGGANG AQUACULTURE CO LTD	A01K63/00 A01G1/00 A01K63/04 C02F1/32
Portable aquaculture case		
CN206024908 (U)	CHONGZHOU WANGCHANG JUNHENG VEGETABLE PLANTATION SPECIALIZED COOP	A01K63/02 A01K63/04 A01K97/20
Track type recirculating aquaculture system		
CN206024915 (U)	TIANJIN OCEAN PAL CAROL BIOTECH CO LTD	A01K63/04
A fodder feeding device for aquaculture		
CN206024887 (U)	CHONGZHOU WANGCHANG JUNHENG VEGETABLE PLANTATION SPECIALIZED COOP	A01K61/80
Aquaculture case with filtration system		
CN206024909 (U)	CHONGZHOU WANGCHANG JUNHENG VEGETABLE PLANTATION SPECIALIZED COOP	A01K63/02 A01K63/04 A01K97/20 C02F9/02 C02F103/20
Gas circulation recirculating aquaculture device		
CN206024914 (U)	TIANJIN OCEAN PAL CAROL BIOTECH CO LTD	A01K63/04
Water quality improvement agent for aquaculture and preparation method thereof		
CN106517453 (A)	NANNING HAISHIJIE BIOLOGICAL TECH CO LTD	C02F1/50 A01N59/16 A01P3/00 A61K36/78 A61K36/79 A61P37/04 A61P39/00 C02F1/68
Sinonovacula constricta washing and shell brushing robot for aquaculture		
CN106509053 (A)	LIN FANGJIE	A22C29/04
ACCRETION PROMOTION MATERIAL OF EGG AND LARVA OF SHELLFISH AS WELL AS SEEDLING COLLECTION METHOD AND AQUACULTURE METHOD OF SHELLFISH USING THE SAME		
JP2017046593 (A)	ISHII SHOJI KK INST NAT COLLEGES TECH JAPAN	A01K61/51 A01K61/54
Semisubmersible aquaculture net cage		

Title		
Publication number	**Applicant(s)**	**International classification**
CN106472381 (A)	HUBEI MARINE ENG EQUIPMENT RES INST CO LTD	A01K61/60
Razor clam automatically capturing machine used in aquaculture		
CN106472442 (A)	LIN FANGJIE	A01K80/00
Aquaculture pond		
CN106472392 (A)	HUANGPING YAOMEITAN TECH ECOLOGICAL CO LTD	A01K63/00 A01K63/04
Aquaculture feed solution formula and preparation method of aquaculture feed solution		
CN106478270 (A)	HUNAN KANGYIDA GRASS TECH CO LTD	C05G3/00
Prawn aquaculture pond		
CN106472390 (A)	CHEN SITIAN	A01K63/00 A01K63/04
Auxiliary aquaculture feed for crucian carps		
CN106472823 (A)	HEFEI RUNYU AGRICULTURE TECH CO LTD	A23K10/30 A23K10/20 A23K10/37 A23K50/80
Calcium replenishing agent for aquaculture		
CN106472873 (A)	FANGCHENGGANG JINSHA OCEAN SCIENCE & TECH CO LTD	A23K50/80 A23K10/26 A23K20/147 A23K20/174
Watercourse aquaculture trough sewage acquisition and discharge system		
CN106472378 (A)	FISHERY MACHINERY AND INSTR RES INST CHINESE ACAD OF FISHERY SCIENCES	A01K61/60 A01K63/04
A frame for use in subtidal aquaculture		
AU2015218469 (A1)	SEAPA PTY LTD	A01K61/00
A oxygen content detection device for aquaculture		
CN206020410 (U)	UNIV LINGNAN NORMAL	G01N33/18 G05D11/13
Quality of water environmental detection set for aquaculture		
CN206020409 (U)	UNIV LINGNAN NORMAL	G01N33/18 A01K63/04
Sea cucumber aquaculture net cage		
CN206005566 (U)	XURI AQUACULTURE (PUTIAN) CO LTD	A01K61/00
A COMPOSITION AND/OR COMBINATION FOR AQUACULTURE		

Title		
Publication number	**Applicant(s)**	**International classification**
WO2017044832 (A1)	OMNIGEN RES LLC [US]	A23K50/80 A23K10/30 A23K10/40 A23K20/163 A23K20/28 A61K36/00
Water purifying agent for aquaculture and preparation method thereof		
CN106477692 (A)	XU FEN	C02F1/50 C02F1/52 C02F1/56
Cleaning device for mixing machine of water purifying agent for aquaculture		
CN106424045 (A)	RIYANG (TIANJIN) BIOTECHNOLOGY DEV CO LTD	B08B9/093 B08B3/02
Conical mixer for producing aquaculture bio-fertilizer		
CN106422907 (A)	RIYANG (TIANJIN) BIOTECHNOLOGY DEV CO LTD	B01F7/30 B08B3/02
Automatic mixing device for producing water quality improver for aquaculture		
CN106422895 (A)	RIYANG (TIANJIN) BIOTECHNOLOGY DEV CO LTD	B01F7/18
Water temperature monitoring system and method of aquaculture industry		
CN106444537 (A)	WUHAN INST TECHNOLOGY	G05B19/042 G01K13/00 G08C17/02 H04W84/12
Treating agent for aquaculture sewage		
CN106430628 (A)	FANGCHENGGANG ANIMAL HUSBANDRY STATION	C02F3/34 C02F103/20
Aquaculture water purifying agent		
CN106467324 (A)	TANG BIN	C02F1/50 C02F1/28 C02F1/52 C02F1/72
Integrated sewage purifying system for aquaculture and purifying method		
CN106430836 (A)	FISHERY MACHINERY AND INSTR RES INST CHINESE ACAD OF FISHERY SCIENCES	C02F9/14 A01K63/04
Method for promoting construction of aquaculture bioflocculation process		
CN106430626 (A)	UNIV SHANGHAI OCEAN	C02F3/34
Underwater habitat observation device for aquaculture system		

Title		
Publication number	**Applicant(s)**	**International classification**
CN106454268 (A)	QINGDAO YUANDA MARINE BIOTECHNOLOGY CO LTD YELLOW SEA FISHERIES RES INST CHINESE ACAD OF FISHERY SCIENCES QINGDAO JIUYANGHONG AQUATIC TECH CO LTD	H04N7/18 H04N13/00 H04N13/04
Shrimp crab, automatic box with a net formula aquaculture production equipment of shellfish aquatic products		
CN205993380 (U)	BEIJING ZHIZHE BOYUAN INFORMATION SERVICE CO LTD	A01K61/00
Multi -parameter aquaculture device		
CN205993399 (U)	SHAANXI GRANFOO IND CO LTD	A01K63/00 A01K63/04
Appearance is observed and controled to quality of water that aquaculture used		
CN206002526 (U)	HEFEI LAIRUI TECH CO LTD	G01N33/18
MIXOTROPHIC METHOD OF AQUACULTURE		
SG10201610527U (A)	BLUE AQUA INTERNAT PTE LTD [SG]	
AQUACULTURE SYSTEM AND METHOD		
SG11201700747T (A)	OXITEC LTD [GB]	A01K67/033
Method for purifying marine aquaculture wastewater by adopting bacterium with nitrification function		
CN106434420 (A)	SOUTH CHINA INST OF ENV SCIENCES MEP	C12N1/20 C02F3/34 C02F101/34 C02F101/38 C02F103/08 C12R1/07
Lactobacillus zeae LZ3 and application thereof in aquaculture		
CN106434405 (A)	JIANG GUANGMING QIAN CAIYUAN ZHANG YUANZHU	C12N1/20 A61K35/747 A61P31/04 C12R1/225
Aquaculture water body sterilization degradation particles and preparation method thereof		
CN106417281 (A)	HUAIYUAN FISHERY SCIENCE AND TECH DEV CO LTD	A01N25/12 A01N59/06 A01N65/32 A01P1/00 C02F1/28 C02F1/50

Title		
Publication number	**Applicant(s)**	**International classification**
Split aquaculture water quality detection method		
CN106441445 (A)	THE AGRICULTURAL ECOLOGY INST OF FUJIAN ACAD OF AGRICULTURAL SCIENCES	G01D21/02 G05D27/02
Automatic feed casting device and method for deepwater aquaculture net cage		
CN106417140 (A)	UNIV SOUTH CHINA AGRICULT	A01K61/80
Tiny suspended matter removal device and tiny suspended matter removal method for freshwater aquaculture system		
CN106430710 (A)	FISHERY MACHINERY AND INSTR RES INST CHINESE ACAD OF FISHERY SCIENCES	C02F9/04 C02F101/16 C02F101/30 C02F103/20
Aquaculture and crop planting combined ecological cycle agriculture technology		
CN106417112 (A)	ZHANG RONGPING	A01K61/10 A01G1/00 A01G16/00 A01K61/59
Prawn liver-protecting and growth-promoting agent for aquaculture		
CN106421459 (A)	FANGCHENGGANG JINSHA MARINE TECH CO LTD	A61K36/899 A61K35/32 A61K35/64 A61K36/8984 A61P1/16 A61P3/00 A61P37/04
Nano silver sterilizing, detoxifying and immunity enhancing agent used for aquaculture		
CN106430471 (A)	FANGCHENGGANG JINSHA MARINE TECH CO LTD	C02F1/50
Automatic feeding device for aquaculture		
CN106417139 (A)	GUANGZHOU CITY DANJUE COMMUNICATION TECH CO LTD	A01K61/80
Ocean aquaculture device using net type fish cage		
KR101701400 (B1)		A01K61/00 A01K74/00
Novel aquaculture on -line monitoring device		
CN205992147 (U)	UNIV CHINA THREE GORGES CTGU	G05B19/042
Marine product aquaculture device and marine product aquaculture method		
CN106455526 (A)	PUBLIC UNIV CORP TOYAMA PREFECTURAL UNIV FURUNO ELECTRIC CO	A01K61/00

Title		
Publication number	**Applicant(s)**	**International classification**
Multi-angle stirring rod for producing substrate improving agent for aquaculture		
CN106390823 (A)	RIYANG (TIANJIN) BIOTECHNOLOGY DEV CO LTD	B01F7/18
Freshwater aquaculture pond		
CN205962381 (U)	ZHANG YUCAI	A01K63/00 A01K63/04 A01K63/06
Freshwater aquaculture feeding device		
CN205962362 (U)	ZHANG YUCAI	A01K61/80 A01K63/04 A01K63/06
Aquaculture device		
CN205962379 (U)	HUANGPING HUICHUANG TECH CO LTD	A01K63/00 A01K63/04 A01K63/06
Aquaculture wastewater innocent treatment device		
CN205974176 (U)	TIANJIN GOLDEN AQUARIUM AQUACULTURE CO LTD	C02F9/14
Aquaculture wastewater filtering device		
CN205965268 (U)	UNIV ZHEJIANG OCEAN	B01D36/04
Sedimentation tank for aquaculture wastewater treatment that can regulate and control		
CN205965141 (U)	UNIV ZHEJIANG OCEAN	B01D21/02
Magnetization recirculating aquaculture device		
CN205962372 (U)	DALIAN OCEAN UNIV	A01K63/00 A01K63/04 C02F1/48
Can be along with extra large aquaculture net that encloses of fluctuation in stage heave		
CN205962358 (U)	GU GUOWEI	A01K61/60
Buoy for aquaculture		
CN205962346 (U)	CHENG LIFANG	A01K61/00
Ozone water treatment device for aquaculture pond		
CN106396076 (A)	FISHERY MACHINERY AND INSTR RES INST CHINESE ACAD OF FISHERY SCIENCES	C02F1/78 C02F1/50 C02F103/20
Oxygen supply device used for aquaculture		
CN106386644 (A)	BEIHAI CITY TIESHANGANG DISTR HUAJUN BREEDING CO LTD	A01K63/04
Rana grylio high-yield aquaculture method capable of stabilizing grain income and increasing fishery income		

Title		
Publication number	**Applicant(s)**	**International classification**
CN106386675 (A)	CHEN DONGLIN	A01K67/02 A01G16/00 A23K10/18 A23K10/20 A23K10/22 A23K10/26 A23K10/30 A23K10/37 A23K20/105 A23K20/126 A23K20/142 A23K20/147 A23K20/153 A23K20/158 A23K20/163 A23K20/174 A23K20/179 A23K20/20 A23K20/28 A23K50/80
Aquaculture water treatment device		
CN106390551 (A)	GUANGZHOU YUGE AQUATIC TECH CO LTD	B01D29/05 B01D29/68
Industrialized aquaculture water circulation processing system		
CN106386647 (A)	GUANGDONG GUANLI MARINE ORGANISM CO LTD YU ZHAOLONG	A01K63/04
Special aquaculture method for ecological freshwater shrimps		
CN106386604 (A)	LU'AN YU'AN KANGZHIYUAN GORGON FRUIT PLANTING PROFESSIONAL COOP	A01K61/59
Agricultural interconnection marine aquaculture method and system		
CN106408427 (A)	SHENZHEN ALLWINS TECHNOLOGY CORP	G06Q50/02 A01K61/00
Siniperca chuatsi domestication aquaculture method for allowing Siniperca chuatsi to eat compound feed		
CN106386585 (A)	PEARL RIVER FISHERY RES INST CHINESE ACAD OF FISHERY SCIENCES FOSHAN SHANSHUISHUN HUAYUAN AQUATIC PRODUCTS CO LTD	A01K61/10
CONTAINMENT PENS FOR FINFISH AQUACULTURE		
US2017042128 (A1)	OCEAN FARM TECH INC [US]	A01K61/00
Aquaculture method and apparatus for marine organisms using cultivating cages		

Title		
Publication number	**Applicant(s)**	**International classification**
KR20170009407 (A)		A01K61/00 A01K63/04
Aquaculture fodder supplies system of throwing		
CN205946909 (U)	LINGWU JINHE FISHERIES PROFESSIONAL COOP	A01K61/80
A put fish groove for aquaculture		
CN205946922 (U)	LINGWU JINHE FISHERIES PROFESSIONAL COOP	A01K63/00
Fodder feeding device for aquaculture		
CN205946904 (U)	TIANJIN YUNNI TECH CO LTD	
A animal doctor of robot for aquaculture		
CN205946871 (U)	UNIV OF SCIENCE AND TECH LIAONING CHEN HAO WANG CHUNYAN WANG JINGXIA	A01K29/00
Recirculating aquaculture system's waste deposit device		
CN205948466 (U)	UNIV NINGBO	B01D29/50 A01K63/04 B01D29/03
Aquaculture pond		
CN205946912 (U)	ZHEJIANG AOLING AQUACULTURE SEED IND TECH CO LTD	A01K63/00 A01K63/04
Aquaculture pond		
CN205946913 (U)	ZHEJIANG AOLING AQUACULTURE SEED IND TECH CO LTD	A01K63/00 A01K63/04
A fish monitoring device that dies for aquaculture		
CN205958008 (U)	HUNAN INST OF SCIENCE AND TECH	G01D21/00
Environmental protection aquaculture pond with sewage treatment function		
CN205953759 (U)	CHEN SHICHU	C02F9/14
Ecological restoration agent for aquaculture water area and preparation method thereof		
CN106380004 (A)	LI YUPING	C02F3/34
Aquaculture automatic control system based on photovoltaic power generation		
CN205942376 (U)	LI ZIJIA	G05B19/042
Batch production recirculating water aquaculture processing system		
CN205933512 (U)	NANTONG RUNHONG ENV PROT EQUIPMENT ENG CO LTD	C02F9/08 C02F103/20

Publication number	Applicant(s)	International classification
Title		
Aquaculture is with quality of water collection system who has wireless transmission function		
CN205922493 (U)	HEFEI LAIRUI SCIENCE AND TECH CO LTD	A01K61/10
AQUATIC LIFE AQUACULTURE TANK		
JP6100845 (B2); JP2017023118 (A)	HACHIUMA HIROKI	A01K63/00 A01K63/04 A01K63/06
Intelligence aquaculture pond based on big data analysis		
CN205922507 (U)	GUANGDONG YUESANPANG AGRICULTURAL TECH CO LTD	A01K63/00 A01K63/04 A01K63/06 G05D27/02
Three -dimensional oxygenation system suitable for biological aquaculture mode of wadding group		
CN205922528 (U)	SOUTH CHINA SEA FISHERIES RES	A01K63/04 A01K63/00
Beasts and birds aquaculture management and data acquisition device of tracing to source		
CN205922455 (U)	SHENYANG JUN NONG GE TECH CO LTD	A01K29/00 A01K45/00
Aquaculture environment intelligence monitoring device		
CN205942463 (U)	GUANGZHOU JSON INTELLIGENT TECH CO LTD	G05D11/13 A01K63/04 G01N33/18 G01R19/15 G01S19/16
Novel aquaculture Chinese herbal medicine composite probiotics preparation and preparation method thereof		
CN106377569 (A)	HEFEI INST PHYSICAL SCI CAS	A61K36/481 A61K35/741 A61K35/742 A61K35/747 A61P31/00 A61P37/04 A61P39/00 C12N1/20 C12P1/04 C12R1/08 C12R1/085 C12R1/125 C12R1/23 C12R1/38
Ultrasonic wave flow sensor for aquaculture		
CN106382963 (A)	JIANGSU ZHONGNONG INTERNET OF TINGS TECH CO LTD	G01F1/66

Title		
Publication number	**Applicant(s)**	**International classification**
Aquaculture intelligence monitoring system		
CN106383498 (A)	JIANGSU ZHONGNONG INTERNET OF TINGS TECH CO LTD	G05B19/418
Breeding method for fishing re-circulating aquaculture system		
CN106359241 (A)	CHUZHOU FEIYANG AGRICULTURAL SCIENCE AND TECH CO LTD	A01K63/04
Method for improving environments of fishery aquaculture lakes		
CN106358660 (A)	CHUZHOU FEIYANG AGRICULTURAL SCIENCE AND TECH CO LTD	A01G1/00
Disease resistant nutrient solution for aquaculture		
CN106360126 (A)	TAIHU FENGSHENG AGRICULTURAL DEV CO LTD	A23K50/80 A23K10/30 A23K20/163 A61K31/7016 A61K36/8962 A61P3/02 A61P31/04 A61P37/04
Method for improving base material of saline-alkali soil by utilizing aquaculture sludge		
CN106358487 (A)	SHANDONG SUNWAY LANDSCAPE TECH CO LTD	A01B79/02 C09K17/40 C09K109/00
Oxygen-feeding device applied to aquaculture field		
CN106359242 (A)	BEIHAI TIESHAN PORT HUAJUN BREEDING CO LTD	A01K63/04
Compound microorganism preparation capable of degrading aquaculture pollution and preparation method thereof		
CN106365325 (A)	TANGSHAN HAIDU SEAFOOD CO LTD	C02F3/34 C02F1/28 C12N1/14 C12N1/20 C12R1/01 C12R1/125 C12R1/69
Tylorrhynchus heterochaetus semi-artificial seedling culture mudflat aquaculture method		
CN106359208 (A)	ZHUHAI CITY DOUMEN DISTR ESTUARINE FISHERY RES INST	A01K61/40
Special rapid batching device for aquaculture feed		
CN106360779 (A)	PAN CHUNYAN	A23N17/00
Underwater video monitoring device for industrialized indoor aquaculture pool		
CN106375730 (A)	UNIV TIANJIN AGRICULTURAL	H04N7/18

Title		
Publication number	**Applicant(s)**	**International classification**
Bubble oxygenation type dirt collecting system for bottom layer water body of aquaculture pond and dirt collecting method of system		
CN106365280 (A)	UNIV SHANGHAI OCEAN	C02F1/52 A01K63/04 C02F1/24 C02F103/20
Fish pond feeding machine for aquaculture		
CN106359248 (A)	WU AIBING	A01K63/10
Chinese herbal preparation for preventing and treating common diseases generated in industrialized aquaculture of penaeus vannamei		
CN106361834 (A)	WEIHAI HONGRUN MARINE SCIENCE AND TECH CO LTD	A61K36/71 A61K35/64 A61K36/65 A61P31/04 A61P37/04
Chinese herbal medicine preparation for preventing and treating skin fester diseases of pseudosciaena crocea in industrial aquaculture		
CN106361810 (A)	WEIHAI HONGRUN MARINE SCIENCE AND TECH CO LTD	A61K36/535 A61P31/04
Intelligent aquaculture system and method based on LABVIEW remote monitoring and control technology		
CN106371485 (A)	YULIN NORMAL UNIV	G05D27/02 A01K61/80 A01K63/04
Method for treating bicarbonate saline-alkali water into water for aquaculture		
CN106365360 (A)	WANG MUSHENG	C02F9/04 A01K61/00
Recirculating aquaculture system with large annular aquaculture pond as core		
CN106359239 (A)	OCEAN UNIV CHINA QINGDAO YUEYANG AQUATIC PRODUCT SCIENCE AND TECH CO LTD	A01K63/00 A01K63/04 C02F9/14
MODULAR SUBMERSIBLE AQUACULTURE RAFT		
US2017027136 (A1)	NEWELL CARTER [US]	A01K61/00
PHYSICO-CHEMICAL PROCESS FOR REMOVAL OF NITROGEN SPECIES FROM RECIRCULATED AQUACULTURE SYSTEMS		
US2017029299 (A1)	TECHNION RES & DEV FOUNDATION [IL]	C02F1/467 A01K63/04 B01J39/04 B01J39/18 B01J49/00 C02F1/20 C02F1/42 C02F1/58 C02F1/66

Title		
Publication number	**Applicant(s)**	**International classification**
Automatic change birds poultry aquaculture biogas collection apparatus		
CN205917145 (U)	MUYUAN FOOD CO LTD	C02F11/00 A01K1/00 A01K1/015 A01K1/035 C02F11/02 C02F11/04 C02F103/20
Energy -efficient flocculation clean system that subsides suitable for seal closed circulation recirculating aquaculture		
CN205917055 (U)	JIANGSU TIANFULAI GROUP CO LTD	C02F1/52 C02F9/04
Modernization aquaculture waste collection processing apparatus		
CN205917133 (U)	MUYUAN FOOD CO LTD	C02F9/14 C05F7/00 C02F103/20
Aquaculture wastewater purification treatment method and device		
CN106348543 (A)	JIASHAN JIASHANG ENV SCIENCE AND TECH CO LTD	C02F9/14 C02F101/16 C02F103/20
Preparation for removing wild fishes in freshwater aquaculture pond		
CN106342725 (A)	ZHEJIANG INST FRESH WATER FISHERIES	A01K61/10
Water quality modifying agent for aquaculture		
CN106335995 (A)	ZHOU FAYI	C02F1/68 A01K61/59 C02F3/34
Biological compound system and method for treating low-temperature high-nutritive-salt waste aquaculture seawater		
CN106336015 (A)	NORTH CHINA SEA MARINE FORECASTING CENTER OF STATE OCEANIC ADMINISTRATION	C02F3/32 A01G33/00 A01K61/70 A01K63/04 C02F3/02
Special aquaculture cleaning agent		
CN106335994 (A)	INST OF QUALITY STANDARDS AND DETECTING TECH FUJIAN ACAD OF AGRICULTURAL SCIENCES	C02F1/68 A01K61/13 C02F103/20
Method for efficient alternate aquaculture of macrobrachium rosenbergii and lobsters		
CN106332819 (A)	YANG JIUXIANG	A01K61/59 A01G1/00
Aquaculture monitoring system based on multiple users		

Title		
Publication number	**Applicant(s)**	**International classification**
CN106338971 (A)	HUZHOU QINGYUTANG AGRICULTURE TECH CO LTD	G05B19/418
Loach aquaculture water nutrition additive and preparation method thereof		
CN106333135 (A)	HUAIYUAN FISHERY SCIENCE AND TECH DEV CO LTD	A23K50/80 A23K20/147 A23K20/174 A23K20/189 A23K20/24 A23K20/26
Aquaculture PH value intelligent network monitoring data system		
CN106338535 (A)	BEIHAI YUNXIN ELECTRONIC TECH CO LTD	G01N27/00 A01K63/04
In-water operation fish pond desilting device in saline-alkali soil brackish aquaculture		
CN106337460 (A)	SHANDONG SUNWAY LANDSCAPE TECH CO LTD	E02F5/28 E02F3/88 E02F3/90
Water-change-free and high-density aquaculture method of litopenaeus vannamei		
CN106332823 (A)	UNIV SHANGHAI OCEAN	A01K61/59 A01K63/00 A01K63/04 C12N1/20
Intelligent aquaculture system and method		
CN106325190 (A)	BAI HAIJIAO	G05B19/048
Novel adhesion medium for fishing light complementation sea cucumber aquaculture pond		
CN106305529 (A)	SHANGHAI SHENZHOU ELECTRIC POWER CO LTD	A01K61/30 A01K61/70
Moss ecological control agent for aquaculture and application thereof		
CN106315869 (A)	FW FISHERIES RES CT CAFS	C02F3/34 A01N63/02 A01P1/00 A01P13/00
Buoy type aquaculture water quality monitoring system		
CN205910172 (U)	XIAMEN KELUNGDE ENV ENG CO LTD YELLOW SEA FISHERIES RES INST CHINESE ACAD OF FISHERY SCIENCES	G01N33/18 G08C17/02 H02J7/35
PH sensor for aquaculture		
CN205910147 (U)	JIANGSU INTELLIGENCE AGRICULTURAL TECH CO LTD	G01N27/00
Saline and alkaline land aquaculture system		

Title		
Publication number	**Applicant(s)**	**International classification**
CN205902656 (U)	SHANDONG SUNWAY LANDSCAPE TECH CO LTD	A01K63/00 A01B79/02 A01K63/04 A01K63/06
Lightning protection aquaculture water quality monitoring device		
CN205910178 (U)	JIANGSU ZHONGNONG IOT TECH CO LTD	G01N33/18 H01T19/00
Sensor connecting device for aquaculture		
CN205902648 (U)	JIANGSU INTELLIGENCE AGRICULTURAL TECH CO LTD	A01K61/00 A01K63/00
Be used for aquaculture water quality testing compensation arrangement		
CN205910113 (U)	JIANGSU ZHONGNONG IOT TECH CO LTD	G01N21/01
Aquaculture is with dissolving oxygen sensor probe		
CN205910122 (U)	JIANGSU ZHONGNONG IOT TECH CO LTD	G01N21/64 G01N21/01
Aquaculture pond		
CN205902658 (U)	XINCAI COUNTY GUYU IND CULTURE CO LTD	A01K63/00 A01K63/04
Aquaculture water turbidity detector		
CN205910129 (U)	JIANGSU ZHONGNONG IOT TECH CO LTD	G01N21/84 G01N21/59
Aquaculture water quality testing sample water filter equipment		
CN205903671 (U)	JIANGSU INTELLIGENCE AGRICULTURAL TECH CO LTD	B01D29/01 G01N33/18
Aquaculture water quality monitoring device that contains constant voltage power supply		
CN205910177 (U)	JIANGSU ZHONGNONG IOT TECH CO LTD	G01N33/18
Utilize circulating water to carry out aquaculture's facility		
CN205902659 (U)	JIANGSU DONGHAIZHIBIN MARINE BIOLOGICAL TECH CO LTD	A01K63/00 A01K63/04 A01K63/06 C02F9/14
Energy -conserving formula ocean aquaculture device		
CN205902653 (U)	LIN SHUTING	A01K61/00
Full closed circulation recirculating aquaculture device of aquatic licofelone fodder		
CN205902665 (U)	TIANJIN HUAYE ECOLOGICAL FARMING CO LTD	A01K63/04 A01K61/80
Comprehensive treatment method of aquaculture sewage		

Title		
Publication number	**Applicant(s)**	**International classification**
CN106315975 (A)	TANGSHAN HAIDU AQUATIC PRODUCT FOOD CO LTD	C02F9/14 C02F11/00 C02F11/12 C05F7/00
Multi -functional aquaculture experimental system		
CN205884402 (U)	BEIJING FISHERIES RES INST	A01K63/00 A01K63/04
Warm clean water circle device of high -efficient energy -conserving water -saving aquaculture environmental protection of intelligence		
CN205884398 (U)	NANJING AQUACUP TECH CO LTD	A01K63/00 A01K61/00 A01K63/04 A01K63/06
Aquaculture wastewater treatment device		
CN205893016 (U)	GUANGXI HONGYE ENV PROT ENERGY SAVING ENG CO LTD	C02F9/14
A RELEASABLY SUBMERSIBLE FLOAT ASSEMBLY AND ITS USE IN AQUACULTURE		
US2017013809 (A1)	THE CAWTHRON INST TRUST BOARD [NZ]	A01K61/00
A intelligent solar heating machine for agriculture aquaculture		
CN205897565 (U)	XUZHOU XINGHUI ENV PROT EQUIPMENT TECH CO LTD	F24H9/20 A01K63/06 F24H9/18 F24J2/38 H02J7/00 H02S20/32
SEEDLING AQUACULTURE WATER OF SHELL-FISH SUCH AS SHRIMP, CRAB AND GIANT CLAM, AQUACULTURE METHOD OF SEEDLING USING THE SAME		
JP6056949 (B1); JP2017060459 (A)	KAKE EDUCATIONAL INST SIDSOKEN CO LTD	A01K61/59
Aquaculture dissolved oxygen intelligent network monitoring data system		
CN106324067 (A)	BEIHAI YUNXIN ELECTRON TECH CO LTD	G01N27/48 G01N27/30 G05B19/042
Swing-type positive pressure aerating apparatus for aquaculture		
CN106305581 (A)	FISHERY MACHINERY AND INSTR RES INST CHINESE ACAD OF FISHERY SCIENCES	A01K63/04
Eel aquaculture feed		
CN106306369 (A)	ANHUI ZHUANGDA FEED CO LTD	A23K10/26 A23K10/30 A23K10/37 A23K20/10 A23K50/80

Title		
Publication number	**Applicant(s)**	**International classification**
Green and healthy pond aquaculture method		
CN106305510 (A)	ORDOS CITY AQUATIC MAN STATION	A01K61/00 A01K61/10 C02F1/66 C02F3/32 C02F3/34
Health-care medicament for aquaculture water and preparation method thereof		
CN106310053 (A)	HUAIYUAN FISHERY SCIENCE AND TECH DEV CO LTD	A61K36/902 A61K31/702 A61K31/7036 A61P3/00 A61P39/00 C02F1/00 C02F103/20
Ecological engineering arranging method for offshore fish type aquaculture ledge pond		
CN106305571 (A)	YELLOW SEA FISHERIES RES INST CHINESE ACAD OF FISHERY SCIENCES	A01K63/00 A01K63/04 C02F7/00
Aquaculture method capable of improving saponin content of sea cucumbers		
CN106305506 (A)	TIANJIN ZHENBANG AQUATIC PRODUCT CULTURE CO LTD	A01K61/00
Water quality cleaning agent for aquaculture		
CN106315860 (A)	LIU XIPING	C02F3/34
Aquaculture monitoring and user remote control method		
CN106325181 (A)	HUZHOU CELEFISH AGRICULTURAL SCIENCE AND TECH CO LTD	G05B19/048
Monitoring system for aquaculture		
CN106325121 (A)	HUZHOU CELEFISH AGRICULTURAL SCIENCE AND TECH CO LTD	G05B19/04
Method for controlling dissolved oxygen in aquaculture monitoring system and system		
CN106325315 (A)	HUZHOU CELEFISH AGRICULTURAL SCIENCE AND TECH CO LTD	G05D11/13
Monitoring data calibration method and monitoring data calibration system of aquaculture monitoring system		
CN106325144 (A)	HUZHOU CELEFISH AGRICULTURAL SCIENCE AND TECH CO LTD	G05B19/042
Fault monitoring method and system for aquaculture monitoring system		
CN106325316 (A)	HUZHOU CELEFISH AGRICULTURAL SCIENCE AND TECH CO LTD	G05D11/13 G05B23/02

Title		
Publication number	**Applicant(s)**	**International classification**
Biological filter for aquaculture wastewater		
CN106277288 (A)	SHANDONG NEW THINKING ENV ENG CO LTD	C02F3/00
Nano-silver pond sediment improving agent for aquaculture		
CN106277240 (A)	FANGCHENGGANG JINSHA MARINE TECH CO LTD	C02F1/50
Boats and ships thrust unit for aquaculture		
CN205872415 (U)	YAN WENQI	B63H11/12 A01K61/00 A01K63/04
Aquaculture's novel pond of growing seedlings		
CN205865656 (U)	NINGBO FUFA AQUATIC PRODUCTS CO LTD	A01K63/00
Batch production recirculating water aquaculture south america white shrimp system		
CN205865653 (U)	ZHANJIANG CHENGKAI FISHERIES TECH CO LTD	A01K63/00 A01K63/04
Can arrange snorkeling formula aquaculture net case of silt automatically		
CN205865616 (U)	SU XIUMIN	A01K61/00
Predacious fish pond recirculating aquaculture system		
CN205865650 (U)	PEARL RIVER FISHERY RES INST CHINESE ACAD OF FISHERY SCIENCES	A01K63/00 A01K63/04
A device for aquaculture reduction hardness of water		
CN205874085 (U)	ZHANG YUEHONG	C02F9/04 A01K63/04 C02F1/42
Integrative pond recirculating aquaculture system of fishing light		
CN205865639 (U)	TONGWEI CO LTD CHENGDU TONGWEI AQUATIC PRODUCT TECH CO LTD	A01K63/00 A01K63/04
Aquaculture robot of unmanned operation of intelligence		
CN205865626 (U)	TANG XINYI	B25J11/00 B25J13/00
Aquaculture environmental monitoring system		
CN205877879 (U)	SHENZHEN INST OF INFORMATION TECH	F21S8/00 A01K61/00 G05B19/048 F21Y115/10
Aquaculture method		

Title		
Publication number	**Applicant(s)**	**International classification**
CN106259107 (A)	CHUZHOU XINYUAN AGRICULTURAL SCIENCE AND TECH CO LTD	A01K61/00 A01G1/00
Ecological circulating aquaculture and planting method		
CN106260575 (A)	LI XINGHAI	A23K10/30 A23K20/163 A23K50/30
Aquaculture nutrition sustained release agent and preparation method thereof		
CN106278769 (A)	HENGMAO IND GROUP CO LTD	C05G3/08 C02F1/28 C02F1/66 C02F1/68 C02F101/10
Judgement method of behaviors of pond cultured freshwater fish on aquaculture aspect		
CN106259095 (A)	CHANGZHOU INST TECHNOLOGY	A01K61/00 G06K9/00 G06K9/38 G06K9/40
Respiration type aquaculture pond system and operation method		
CN106259140 (A)	FISHERY MACHINERY AND INSTR RES INST CHINESE ACAD OF FISHERY SCIENCES	A01K63/00 A01K63/04
Raceway type sealed aquaculture system of high-density and aquaculture method		
CN106259137 (A)	SOUTH CHINA SEA FISHERIES RES JIANGYIN XIAMI BIOLOGICAL TECH CO LTD	A01K63/00 A01K61/00 A01K63/04
Ecological aquaculture method for river crabs		
CN106259079 (A)	GUANGXI JIPIN ENV PROT TECH CO LTD	A01K61/00 A01K63/00 A23K10/20 A23K10/26 A23K10/30 A23K10/37 A23K20/163 A23K50/80
Freshwater fish ecological aquaculture feed		

Title		
Publication number	**Applicant(s)**	**International classification**
CN106260744 (A)	GUANGXI JIPIN ENV PROT TECH CO LTD	A23K50/80 A23K10/18 A23K10/20 A23K10/26 A23K10/30 A23K10/37 A23K20/147 A23K20/163 A23K20/174 A23K20/28
Method for evaluating water quality of water for closed water freshwater aquaculture		
CN106290276 (A)	UNIV JIANGSU	G01N21/64
Toxicity preventive aquaculture method for penaeus japonicus		
CN106259110 (A)	FU YI	A01K61/00 A01K63/04 A23K10/30 A23K20/163 A23K20/189 A23K50/80
Fish recirculating water aquaculture water treatment pool		
CN205848378 (U)	ZHEJIANG MARICULTURE RES INST	A01K63/04
Aquaculture disinfectant composition with sustained-release function and light-sensitive molecule systems of natural plant extract		
CN106277239 (A)	SUNDYNAMIC TECH LTD	C02F1/50 A01N35/02 A01N41/08 A01N43/38 A01N43/56 A01N43/90 A01N57/16 A01P1/00 A01P3/00
Aquaculture quality of water automatic monitoring system		
CN205861115 (U)	JIANG HAISHENG	G01D21/02
Aquaculture is with machine of feeding		
CN205848366 (U)	XIANTAO XILIUHE GUOBING AQUACULTURE PROFESSIONAL COOP	
ASPARTYL-DIPEPTIDES FOR AQUACULTURE		
WO2017068149 (A1)	CYSAL GMBH [DE]	A23K20/147 A23K20/142 A23K50/80
A METHOD FOR AUTOMATIC SEA LICE MONITORING IN SALMON AQUACULTURE		
WO2017068127 (A1)	INTERVET INT B V [NL] INTERVET INC [US]	A01K61/60 A01K61/90

Title		
Publication number	**Applicant(s)**	**International classification**
FLOATING AND SUBMERSIBLE CLOSED-CONTAINED AQUACULTURE FARMING, AND METHOD OF REARING FISH		
WO2017026899 (A1)	HAUGE AQUA AS [NO]	A01K61/00
AQUACULTURE INSTALLATION AND FARMING METHOD		
EP3171691 (A1)	BOCK GORDON [DE] LINKE RAINER [DE]	A01K61/00 A01G33/00 A01K63/04 C02F3/00

Tabla 3. Listado ampliado de patentes europeas

10. Anexo II. Patentes españolas

APARATO PARA LA ACUICULTURA DE PECES EN MAR ABIERTO.

Número de publicación:
ES2272494 T3 (01.05.2007)
También publicado como:
EP1298987 A1 (09.04.2003)
EP1298987 B1 (06.09.2006)
WO0201946 A1 (10.01.2002)
Solicitante:
KLEIN, SHLOMO (IL)
TABENKIN STREET 17, 69353 TEL-AVIV
CIP: ***A01K61/00*** *(2006.01)* ***A01K63/00*** *(2006.01)*
Resumen:
Aparato (10) para la acuicultura de peces que com- prende un bastidor (12) que soporta una jaula (11) o una plu- ralidad de jaulas (11), para acuicultura y provisto de ele- mentos huecos de flotación (17), y medios para controlar la flotación del aparato (10) llenando, total o parcialmente, dichos elementos (17) de flotación con agua, y vaciándolos, total o parcialmente, de agua, cuando se desee, caracterizado porque dicho aparato (10) está provisto de medios para hacerle des-

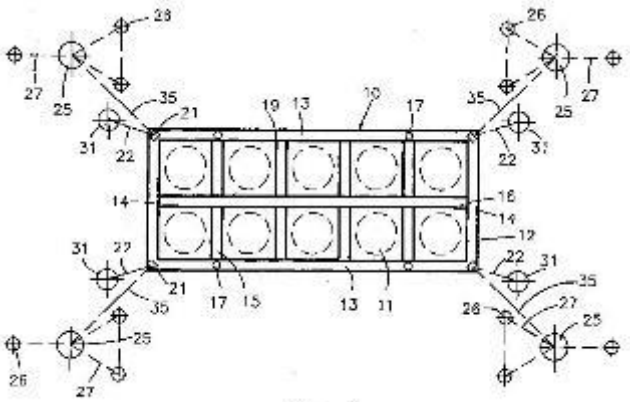


Fig. 1

cender por debajo de la superficie del mar, cuyos medios com- prenden una pluralidad de guías giratorias (24) por cada una de las cuales puede hacerse pasar un cable (22), e4stando si- tuadas dichas guías giratorias (24) en el bastidor con el fin de encontrarse por encima de la superficie del agua cuando el estado de llenado de dichos elementos de flotación (17) se controle de tal manera que el aparato (10) se encuentre en su condición flotante.

EMBARCACION DE ASISTENCIA A GRANJAS DE ACUICULTURA MARINA.

Número de publicación:
ES1059889 U (16.06.2005)
También publicado como:
ES1059889 Y (01.10.2005)
Solicitante:
AQUINAVAL, S.L. (ES)
POLIG. IND. LALIN 2000, CALLE B, PARC. 15B,LALIN 36500 PONTEVEDRA
CIP: ***B63B43/10*** *(2006.01)* *A01K61/00* (2006.01)
Reivindicaciones:
1. Embarcación de asistencia a granjas de acuicultura marina, del tipo de las destinadas al transporte y almacenaje de pienso y otros productos utilizados en tales granjas, y que dispone a tal efecto de silos o tolvas de carga asistidos por medios de vaciado/llenado, caracterizada porque está constituida a base de una pluralidad de piezas de polietileno, con formatos de tubería y formatos de plancha, de manera que las piezas

de polietileno en forma de tubería determinan un cerco o flotador perimetral participante en el casco, en el que tales piezas se fijan entre sí mediante soldadura por presión y calor, mientras que las planchas configuran el resto del casco, fijándose tanto entre sí como al marco tubular o flotador citado, preferentemente situándose otro elemento tubular en correspondencia con la línea longitudinal, inferior y media del casco, igualmente de polietileno y fijado de la misma manera.

2. Embarcación de asistencia a granjas de acuicultura marina, según reivindicación 1ª, caracterizada porque los silos o tolvas de carga, que ocupan mayoritariamente el casco, están obtenidas también a base de planchas de polietileno debidamente fijadas entre sí.

3. Embarcación de asistencia a granjas de acuicultura marina, según reivindicaciones anteriores, caracterizada porque es susceptible indistintamente de incorporar una cabina y motor integrado, un motor no integrado o carecer de motor.

4. Embarcación de asistencia a granjas de acuicultura marina, según reivindicaciones anteriores, caracterizada porque está dotada de un generador de energía para dar servicio a los sistemas de navegación y al resto de los sistemas alimentados eléctricamente que participan en la misma.

ESTRUCTURA FLOTANTE PARA ACUICULTURA Y OTROS USOS.

Número de publicación:
ES1066093 U (16.12.2007)
También publicado como:
ES1066093 Y (16.03.2008)
Solicitante:
ALVARIA, S.L. (ES)
POL. DE BOIRO, PARCELA 19,BOIRO 15930 A CORUÑA
CIP: ***A01K61/00*** *(2006.01)*
Reivindicaciones:
1. Estructura flotante para acuicultura y otros usos, que comprende un emparrillado (1) de tubos (2 y 3) dispuestos según dos hiladas que se cruzan perpendicularmente; caracterizada porque en el punto de cruce se encajan los tubos (2 y 3) mediante guías (9) y se fijan mediante cabillas (5) empernadas que atraviesan los tubos (2 y 3) por conductos (6) que discurren por el interior de dichos tubos (2 y 3); todo ello para evitar la deformación de los tubos al apretar las cabillas (5).

2. Estructura flotante para acuicultura y otros usos, según reivindicación 1, caracterizada porque los tubos (2 y 3) presentan una sección rectangular o cuadrada para mantener una carga constante por centímetro de calado.

3. Estructura flotante para acuicultura y otros usos, según reivindicación 1, caracterizada porque los tubos inferiores (2) son de flotabilidad y de mayor sección que los superiores 3, que son de rigidización y selectivamente también de flotación.

4. Estructura flotante para acuicultura y otrosusos, según reivindicación 1, caracterizada porque los tubos inferiores (2) comprenden unos mamparos divisorios (10) que determinan compartimentos dotados de medios (11) de llenado/vaciado para ajuste del calado del emparrillado (1) y/o de regulación de diferencias de peso por carga de producción uniforme.

5. Estructura flotante para acuicultura y otros usos, según reivindicación 1, caracterizada porque sobre los tubos superiores (3) se disponen unas viguetas (4) de sección cuadrada rectangular, que determinan un soporte de las cuerdas de producción que cuelgan e introducen en el agua, y en cuyos puntos de cruce encajan mediante guías (9a) y se fijan mediante cabillas empedradas que los atraviesan a través de conductos que discurren por el interior de la vigueta (14) y del tubo superior (3).

6. Estructura flotante para acuicultura y otros usos, según reivindicación 1, caracterizada porque sobre los tubos superiores (3) se dispone una plancha de uso como plataforma polivalente.

7. Estructuraflotante para acuicultura y otros usos, según reivindicación 1, caracterizada porque sobre los medios de llenado comprenden tomas (12) situadas en la parte superior de los tubos inferiores (2) en las que se acopla una bomba.

8. Estructura flotante para acuicultura y otros usos, según reivindicaciones 1 y 5, caracterizada porque las guías (9) de alojamiento de los tubos superior (3) e inferior (2), están constituidas por pletinas (9) soldadas transversalmente a los tubos inferiores (2) o superiores (3) en el punto de cruce de éstos; y las guías (9a) en las que encajan las viguetas (4) sobre los tubos superiores (3), están constituidas por pletinas (9a) soldadas transversalmente al tubo superior (3).

9. Estructura flotante para acuicultura y otros usos, según reivindicación 1, caracterizada porque los tubos superiores (3) presentan una superficie superior antideslizante.

10. Estructura flotante para acuicultura y otros usos, según reivindicación 1, caracterizada porque comprende pasarelas específicas de circulación y/o barandillas de seguridad.

11. Estructura flotante para acuicultura y otros usos, según reivindicación 1, caracterizada porque comprende medios de unión de los emparrillados (1) por sus extremos.

12. Estructura flotante para acuicultura y otros usos, según reivindicación 1, caracterizada porque los extremos de los tubos superior (3) e inferior (2) comprenden zonas reforzadas (13) como elementos para la fijación de líneas de fondeo, evitando su deslizamiento y desprendimiento y proporcionando un medio que soporta la fricción y presión que efectúa la línea de fondeo sobre dichos tubos (2 y 3).

DISPOSITIVO ELECTRONICO MULTIFUNCIONAL Y PROGRAMABLE PARA USO EN ACUICULTURA

Número de publicación:
ES1072236 U (15.06.2010)
También publicado como:
ES1072236 Y (09.09.2010)
ES1072236 U8 (26.10.2012)
Solicitante:
UNIVERSIDAD POLITECNICA DE CARTAGENA (ES)
ED. "LA MILAGROSA" PLAZA CRONISTA ISIDORO VALVERDE S/N 30202 CARTAGENA Murcia ESPAÑA
CIP: ***A01K79/02*** *(2006.01)*
Reivindicaciones:

1. Dispositivo electrónico multifuncional y programable para uso en acuicultura, del tipo de los que incorporan un convertidor de potencia (4) a cuya entrada se dispone un rectificador (2) a través del que se alimenta eléctricamente, y a cuya salida se establecen, previo filtrado (6), una pareja de electrodos (7-7) para la emisión de descargas eléctricas, caracterizado porque incluye un módulo de control (12) asociado a dicho convertidor de potencia (4), que puede materializarse indistintamente en un ordenador portátil, una agenda electrónica (PDA), un teléfono móvil o cualquier dispositivo similar que permita la instalación en su seno de un determinado software de control del equipo a través del que seleccionar, de forma manual o automática, cualquier tipo de onda a la salida de los electrodos (7-7), en función del tamaño y tipo de especie acuática a aplicar la descarga eléctrica, para su electroaturdimiento, electronarcosis, electrotaxis, o electrosacrificio, habiéndose previsto que con dicho módulo de control participen un grupo de sensores (9) de corriente y tensión a través de los que la citada aplicación permite registrar los parámetros utilizados en la descarga, así como detectar el medio en el que se encuentran los electrodos (tierra, agua marina, agua dulce o pescado), actuando como medio de protección ante la descarga.

2. Dispositivo electrónico multifuncional y programable para uso en acuicultura, según reivindicación 1ª, caracterizado porque los citados electrodos (7-7), de cualquier configuración y tamaño, pueden estar indistintamente integrados en un arpón (8) o estar físicamente independizados.

3. Dispositivo electrónico multifuncional y programable para uso en acuicultura, según reivindicación 1ª, caracterizado porque el módulo de control (12) se relaciona con el convertidor de potencia (4) a través de una placa de adaptación (10), con su correspondiente tarjeta de adquisición de datos (11) tipo PCMCIA o similar.

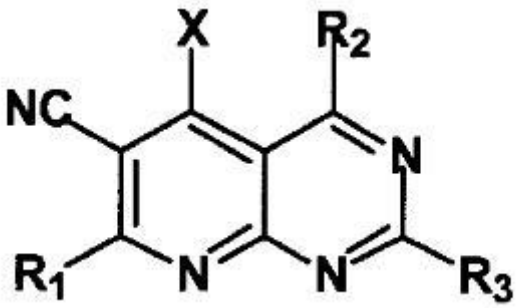
4. Dispositivo electrónico multifuncional y programable para uso en acuicultura, según reivindicaciones anteriores, caracterizado porque opcionalmente el módulo de control puede estar asociado a un módulo de conexión a Internet (13) para el control, actualización y verificación del equipo a distancia.

5. Dispositivo electrónico multifuncional y programable para uso en acuicultura, según reivindicaciones anteriores, caracterizado porque la tarjeta de adquisición de datos (11) incorpora un conector USB para el módulo de control (12) u otro conector similar.

PIRIDOPIRIMIDINAS SUSTITUIDAS DE FORMULA GENERAL I COMO ANTIPROTOZOARIOS PARA ACUICULTURA Y PROCEDIMIENTO DE PREPARACION.

Número de publicación:
ES2232317 A1 (16.05.2005)
También publicado como:
ES2232317 B2 (16.04.2006)
Solicitante:
UNIVERSIDADE DE SANTIAGO DE COMPOSTELA (ES)
EDIFICIO CACTUS-CITT-CAMPUS SUR,SANTIAGO DE COMPOSTELA 15782 A CORUÑA
CIP: ***A61K31/4375*** *(2006.01)* ***A61K31/519*** *(2006.01)* ***A61K31/53*** *(2006.01)* ***A61P33/02*** *(2006.01)* ***C07D471/04*** *(2006.01)* ***C07D495/14*** *(2006.01)*

Resumen:
La presente invención se refiere al procedimiento de preparación de piridopirimidinas sustituidas de fórmula general I y a sus aplicaciones en acuicultura para el tratamiento de la scuticociliatosis en moluscos, crustáceos y peces.



PALILLO PARA CUERDAS DE CRÍA DE MEJILLONES Y ACUICULTURA.

Número de publicación:
ES1076027 U (30.01.2012)
También publicado como:
ES1076027 Y (26.04.2012)
Solicitante:
J.J. CHICOLINO, S.L. (ES)
Vilariño, s/n. 15930 BOIRO A Coruña ESPAÑA
CIP:*A01K61/00* *(2006.01)*

Reivindicaciones:
1. Palillo para cuerdas de cría de mejillones y acuicultura, constituido por un cuerpo alargado, de sección en cruz, compuesto por dos tabiques longitudinales (1 y 2) que presentan una escotadura central, en coincidencia con la cual discurren, entre dichos tabiques, nervios de refuerzo, caracterizado porque los tabiques citados presentan el borde longitudinal libre (3) ondulado y al menos parte de las escotaduras centrales (4') están limitadas por bordes transversales (6) curvo-cóncavos, en forma de ganchos enfrentados.

2. Palillo según la reivindicación 1, caracterizado porque los bordes transversales curvo-cóncavos (6) en forma de gancho están exteriormente limitados por un borde o canto curvo-convexo (7).

3. Palillo según la reivindicación 1, caracterizado porque las escotaduras centrales (4-4') están interiormente limitadas por un borde curvo-cóncavo (5).

4. Palillo según la reivindicación 1, caracterizado porque dos de las escotaduras centrales opuestas (4') están limitadas por bordes transversales (6) en forma de ganchos.

5. Palillo según la reivindicación 1, caracterizado porque los nervios rectangulares (8) están unidos mediante un puente (10) a uno de los tabiques centrales.

CAUDALÍMETRO PARA CONTROLAR LA ENTRADA DE AGUA EN TANQUES DE ESTABULACIÓN EN INSTALACIONES DE ACUICULTURA

Número de publicación:
ES1074399 U (26.04.2011)
También publicado como:
ES1074399 Y (28.07.2011)
Solicitante:
INSTITUTO ESPAÑOL DE OCEANOGRAFIA (ES)
AVDA. DEL BRASIL, 31. 28020 MADRID MADRID ESPAÑA
CIP: ***A01K63/04*** *(2006.01)* *G05D7/00* (2006.01)

Reivindicaciones:
1. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, caracterizado porque comprende:

- un soporte (1) tubular, cuyo primer extremo (2) es acoplable a una tubería de llenado del tanque;

- un reductor de turbulencias (5), que comprende una pluralidad de canales tubulares (6, 25) dispuestos en el interior de un segundo extremo (3) del soporte (1) paralelamente entre sí y al flujo de agua en dicho segundo extremo(3)

- un manómetro (7) de columna dispuesto en el soporte (1); y

- unos medios de lectura (17), aislados del contacto con el agua, para automáticamente mostrar señales de caudal a través de unos indicadores luminosos (18) en función de la presión detectada en el manómetro (7), donde el manómetro (7) comprende:

- un segundo tubo (8) transparente cuyo extremo inferior está insertado en el soporte (1) y que incorpora una abertura (9) de entrada de agua; y

- una tapa (10) en la parte superior del segundo tubo (8) y parcialmente permeable al aire, así como los medios de lectura (17) comprenden:

- una boya (19) imantada capaz de ascender y descender por el segundo (8) tubo flotando sobre el agua, generando un campo magnético;

- al menos un interruptor magnético (20) activable al paso de la boya (19) para detectar la posición de dicha boya (19);

- al menos un indicador luminoso (18) para indicar la activación de los interruptores (20); y

- una unidad de control (21) conectada con los interruptores (20) y con los indicadores (18) y capaz de transformar la indicación de activación de dichos interruptores (20) en una señal de encendido / apagado de dichos indicadores (18).

2. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con la reivindicación 1, caracterizado porque el soporte (1) está acodado en el segundo extremo (3), para dirigir el flujo de agua sustancialmente perpendicular a la superficie del tanque.

3. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con una cualquiera de las reivindicaciones 1 ó 2, caracterizado porque los canales tubulares (6, 25) son primeros tubos (6) independientes que están fijados removiblemente entre sí y al soporte y ocupan en conjunto sustancialmente la totalidad de la sección del segundo extremo (3).

4. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con una cualquiera de las reivindicaciones 1 ó 2, caracterizado porque los canales tubulares (6, 25) son perforaciones tubulares (25) dispuestas en una pieza (24) de soporte fijable al segundo extremo (2) del soporte (1).

5. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con la reivindicación 3, caracterizado porque los primeros tubos (6) están fijados entre sí y al soporte (1) por inserción a presión.

6. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con la reivindicación 1, caracterizado porque la tapa (10) está dotada de al menos un agujero (11) para permitir con cierta resistencia el paso de aire.

7. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con la reivindicación 1, caracterizado porque la tapa (10) comprende una membrana semipermeable para permitir con cierta resistencia el paso de aire.

8. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con la reivindicación 1, caracterizado porque el segundo tubo (8) comprende:

- una pieza superior (12) donde está ubicada la tapa (10), y destinada a alojar una columna (13) de agua indicadora de la presión del flujo; y

- una pieza de conexión (14) en cuya parte superior es insertable el extremo inferior de la pieza superior (12) y en cuya parte inferior se ubica un tercer tubo (15) de diámetro sensiblemente menor que el del soporte (1), donde está alojada la abertura (9) de entrada, y destinado a ser insertado en el flujo de agua hasta una determinada profundidad.

9. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con una cualquiera de las reivindicaciones 1 u 8, caracterizado porque el segundo tubo (8) comprende adicionalmente una escala (16).

10. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con la reivindicación 1, caracterizado porque la unidad de control (21) está encerrada en una carcasa (22) impermeable y estanca.

11. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con la reivindicación 1, caracterizado porque

los interruptores (20) están fijados entre dos placas (23) de material protector transparente y resistente al agua salada, dichas placas (23) adyacentes al segundo tubo (8).

12. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con la reivindicación 1, caracterizado porque comprende un único indicador (18) cuyo estado de encendido o apagado depende de si el caudal está comprendido entre unos valores predeterminados.

13. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con la reivindicación 1, caracterizado porque comprende dos indicadores (18) distinguibles cuyo estado de encendido o apagado depende de si el caudal es superior o inferior a respectivamente sendos valores umbrales máximo y mínimo preestablecidos.

14. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con la reivindicación 1, caracterizado porque comprende una pluralidad de indicadores (18) distinguibles, donde el estado de encendido de cada indicador estado de encendido o apagado depende de si el valor del caudal es superior o inferior a un valor preestablecido correspondiente a cada indicador (18).

15. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con una cualquiera de las reivindicaciones 1, 12, 13 ó 14, caracterizado porque los indicadores (18) luminosos son LED's.

16. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con la reivindicación 1, caracterizado porque la unidad de control (21) incorpora:

- medios de registro para registrar periódicamente los datos de las medidas, y

- medios de almacenaje para almacenar los datos registrados, permitiéndose una posterior descarga de los datos almacenados con una periodicidad seleccionable por el usuario.

17. Caudalímetro para controlar la entrada de agua en tanques de estabulación en instalaciones de acuicultura, de acuerdo con la reivindicación 16, caracterizado porque adicionalmente incorpora medios de envío conectados a dicho caudalímetro, para enviar los datos por vía telemática a una consola remota para su control centralizado por un usuario.

JAULA FLOTANTE PARA ACUICULTURA

Número de publicación:
ES0283245 U (01.08.1985)
También publicado como:
ES0283245 Y (16.04.1986)

Solicitante:
DIAZ BARCENA,ALFONSO (ES)
LAREDO (CANTABRIA)
CIP:*A01M1/10* *(2006.01)*
Primera reivindicación:
Jaula flotante paraacuicultura, caracterizada porque, siendo preferentemente de plástico, está constituida por dos marcos tubulares poligonales, paralelos y enfrentados en sentido vertical, los cuales quedan interconectados por porciones tubulares verticales, definiendo el conjunto la estructura poliédrica de la jaula, encontrándose cubierta la superficie lateral de la estructura por una red que la aisla del exterior y permite, la circulación del agua a través de dicha red; una plataforma central y superior de trabajo está soportada por unos tirantes radiales de la estructura; mientras que en la parte inferior de dicha estructura va dispuesta una cubeta relacionada con un disco separador superior, el cual va conectado mediante un cable por medio del cual se puede subir o bajar la cubeta, en cuyo interior se encuentran la o las especies a cultivar; y cuya cubeta presenta su, borde perimetral superior recubierto con cerdas que actúan como junta para impedir que los animales se salgan de la cubeta en su desplazamiento vertical y a su vez dichas cerdas efectuara un cepillado de la red exterior limpiándola de las adherencias que en ella se depositan.

ACUICULTURA DE GUSANOS MARINOS.

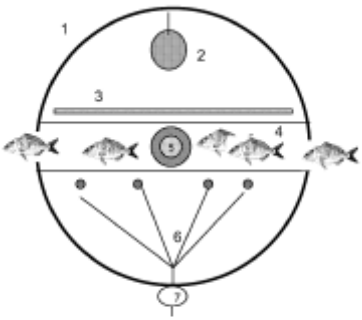
Número de publicación:
ES2216161 T3 (16.10.2004)
También publicado como:
EP0917423 A1 (26.05.1999)
EP0917423 B1 (18.02.2004)
WO9806255 A1 (19.02.1998)
Solicitante:
SEABAIT LIMITED (GB)
WOODHORN VILLAGE,ASHINGTON, NORTHUMBERLAND NE63

CIP: *A01K67/033* *(2006.01)*
Resumen:
PROCEDIMIENTO PARA CONTROLAR EL TIEMPO DE MADURACION SEXUAL DE GUSANOS MARINOS, QUE COMPRENDE LA MANIPULACION DEL FOTOPERIODO AL QUE ESTAN EXPUESTOS LOS GUSANOS. LA INVENCION SE REFIERE IGUALMENTE A UN PROCEDIMIENTO DE CRIOCONSERVACION DE GUSANOS MARINOS, QUE COMPRENDE TIPICAMENTE SUMERGIR LOS GUSANOS EN NITROGENO LIQUIDO.

DISPOSITIVO DE ANALISIS MORFOMETRICO DE IMAGENES PARA DESARROLLAR ESTRATEGIAS DE ALIMENTACION EN ACUICULTURA

También publicado como:
WO2008009773 A1 (24.01.2008)
Solicitante:
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC) (ES)
C/ SERRANO, 117 E-28006 MADRID, España
CIP: ***A01K61/00*** *(2006.01)* ***G01B11/04*** *(2006.01)*

Resumen:
La presente invención es un equipo que permite establecer una estrategia de 5 alimentación en una explotación piscícola gracias ala evaluación de su estado nutricional y a la determinación de supotencial de crecimiento. Previamente al estudio de una población concreta, el equipo permite desarrollar un modelo de crecimiento de referencia para la especie en cuestión, para lo que el equipo establece relaciones alométricas entre los datos obtenidos de las 10 imágenes, que analiza y procesa mediante técnicas estadísticas de análisis multivariante.



AA Vista lateral (Perfil)

AA ... Side view (profile)

SISTEMA DE AMARRE PARA ACUICULTURA EN EL MAR.

Número de publicación:
ES2361668 T3 (21.06.2011)
También publicado como:
EP1567410 A1 (31.08.2005)
EP1567410 A4 (09.07.2008)
EP1567410 B1 (23.02.2011)
WO2004043777 A1 (27.05.2004)

Solicitante:
SUBFLEX LTD (IL)
P.O. BOX 133 KFAR HESS ISRAEL

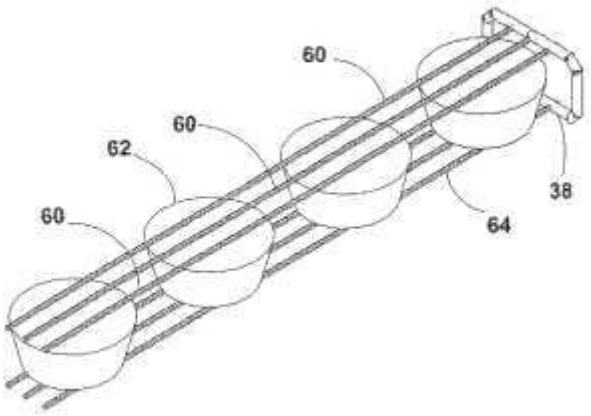
CIP: ***A01K61/00*** *(2006.01)* *B63B21/50* (2006.01)
Resumen:
Un sistema para acuicultura en mar abierto, que comprende:

Una estructura (22),

Una jaula de pescado (62) unida a la estructura (22),

Lastres flexibles (28) suspendidos bajo la jaula,

Un ancla (72),



Una cuerda de amarre que une dicha estructura (22) a dicho ancla (72), y

Al menos un flotador (80) para marcar la ubicación del sistema;

En el que al menos un elemento de construcción del sistema es hueco y está dispuesta al menos una

válvula permitir la entrada selectiva de agua y aire en el elemento de construcción hueco de tal manera que varíe la capacidad de flotación del elemento caracterizado porque la estructura (22) está unida a al menos dos jaulas de pescado (62), al menos un conjunto de miembros alargados flexibles (24, 26) une las jaulas de pescado entre sí, en serie, y a dicha estructura (22); y

una boya (74) está unida a la cuerda de amarre para moderar la tensión de la cuerda de amarre.

NUEVOS ANTIBIOTICOS ACTIVOS FRENTE AL VIBRIO ANGUILLARUM Y SUS APLICACIONES EN CULTIVOS DE PECES, CRUSTACEOS, MOLUSCOS Y OTRAS ACTIVIDADES DE ACUICULTURA.

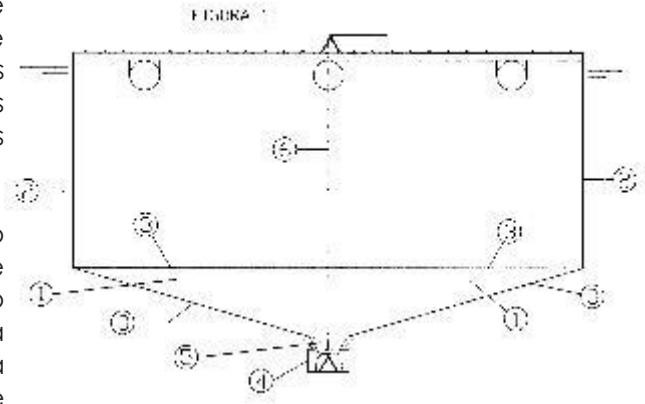
Número de publicación:
ES2204294 A1 (16.04.2004)
También publicado como:
ES2204294 B2 (01.02.2005)
Solicitante:
UNIVERSIDADE DE SANTIAGO DE COMPOSTELA (ES)
EDIFICIO CACTUS - CITT - CAMPUS SUR,SANTIAGO DE COMPOSTELA 15782 A CORUÑA
CIP: ***A61K38/12*** *(2006.01)* ***A61P31/04*** *(2006.01)* ***C07D487/04*** *(2006.01)* ***C12P17/18*** *(2006.01)* ***C12P21/04*** *(2006.01)*

Resumen:
Nuevos antibióticos activos frente al Vibrio anguillarum y sus aplicaciones en cultivos de peces, crustáceos, moluscos y otras actividades de acuicultura. Se han encontrado 5 dicetopiperacinas con actividad frente a la bacteria Vibrio anguillarum. Se trata de los compuestos Z54: ciclo(D)-prolina-(D)-leucina; Z56: ciclo(D)-prolina-(D)-Isoleucina; Z57:ciclo(D)-prolina-(D)-valina; Z59: ciclo(D)-prolina-(D)-fenilalanina y B717: ciclo(D)-trans-4- hidroxiprolinil-(D)-fenilalanina, obtenidos a partir de dos bacterias marinas: Roseobacter gallaecensis.(CECT 5719) y Roseobacter sp.(CECT 5718), aisladas de cultivos larvarios de Pecten maximus. La adición de estos compuestos en una concentración de 0,5 mg/ml a cultivos de moluscos, crustáceos y peces, aumenta su supervivencia en valores que oscilan entre el 12% y el 33%. Su actividad inhibidora es comparable a la de los antibióticos utilizados actualmente en acuicultura.

SISTEMA RECOLECTOR DE RESIDUOS PARA BATEAS Y JAULAS DE ACUICULTURA

Número de publicación:
ES2323031 A1 (03.07.2009)
También publicado como:
ES2323031 B1 (19.04.2010)
Solicitante:
ISOCEAN, S.L. (ES)
AV. DE ORENSE 33 1 A,MARIN 36600 PONTEVEDRA
CIP: ***A01K61/00*** *(2006.01)*

Resumen:
La presente patente de invención se refiere a un sistema pasivo de recolección de los residuos producidos por las especies cultivadas en bateas de acuicultura o en jaulas de engorde.



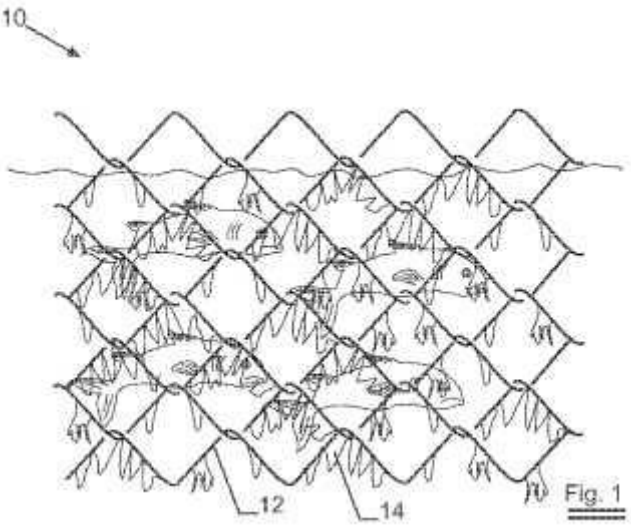
Sistema formado por un embudo flexible (1), conformado mediante rigidizadores (3), que está sumergido lo necesario para no entorpecer la producción y suspendido de la batea o jaula de acuicultura mediante cadenas o cuerdas (2), siendo sus dimensiones adecuadas a las dimensiones máximas de la batea o jaula. En la parte inferior del embudo se sitúa un contenedor o depósito (4). El embudo en su parte inferior dispone de un segundo embudo de mayor inclinación (5) que encaja en el depósito. El depósito está suspendido de la zona central de la batea o jaula mediante una cadena o cuerda (6), de forma que se puede separar del embudo para su vaciado.

RED ACUICULTURA CON ALAMBRES DE ACERO REVESTIDO CON BANDA METÁLICA.

Número de publicación:
ES2372905 T3 (27.01.2012)
También publicado como:
EP2237659 A1 (13.10.2010)
EP2237659 B1 (19.10.2011)
WO2009095135 A1 (06.08.2009)
Solicitante:
NV BEKAERT SA (BE)
BEKAERTSTRAAT 2 8550 ZWEVEGEM BELGICA

CIP: ***A01K61/00*** *(2006.01)* ***A01K73/00*** *(2006.01)*

Resumen:
Una red de acuicultura (10) que comprende alambres de acero (12), teniendo dichos alambres de acero un núcleo de acero (14) y un revestimiento de metal (16) para dar una característica de anticorrosión y de antiincrustaciones a dichos alambres de acero, caracterizado porque dicho revestimiento de metal está en forma de una banda fija alrededor de dicho núcleo de acero.



PLATAFORMA DE ACUICULTURA.

Número de publicación:
ES2087829 A1 (16.07.1996)
También publicado como:
ES2087829 B1 (16.02.1997)
Solicitante:
B R HOLDINGS LIMITED (GB)
SUITES 110/111 NEPTUNE HOUSE MARINA BAY - GIBRALTAR

CIP: ***A01K61/00*** *(2006.01)*
Resumen:
Plataforma de acuicultura. Esta invencion se refiere a una plataforma de acuicultura prevista para cultivar organismos en masas de agua sometidas a un clima y un estado del agua rigurosos. La plataforma consiste en dos o mas flotadores alargados y rigidos que soportan una cubierta de la que pueden suspenderse cuerdas y similares. Los flotadores son largos, con una longitud de mas de 16 metros, y tienen camaras de flotabilidad que pueden inundarse parcialmente para permitir regular el nivel de

flotabilidad de la plataforma en el agua. Esta caracteristica, junto con el tamaño de los flotadores, reduce los efectos del clima y el oleaje del agua riguroso, reduciendo por consiguiente el daño a los organismos cultivados.

SISTEMA CONTENEDOR ECOLÓGICO PARA ACUICULTURA Y MÉTODO DE FUNCIONAMIENTO

También publicado como:
WO2012079184 A1 (21.06.2012)
Solicitante:
BETH REY, Luis Oscar (CL)
Alcantara N° 82, Departemento N° 601 Las Condes, CHILE
CIP: ***A01K61/00*** *(2006.01)* ***A01K63/00*** *(2006.01)* ***A01K63/04*** *(2006.01)* ***B01D21/00*** *(2006.01)*

Resumen:
Sistema contenedor ecológico para acuicultura y método de funcionamiento. Consta de: - un contenedor flexible que en su interior tiene, al menos, una jaula para la crianza de peces o similares en un medio acuático - un medio de extracción de sólidos decantados, que conduce y transporta hidráulicamente todos los sólidos decantados en el interior del contenedor flexible. - una unidad de tratamiento de sólidos que recibe dichos sólidos, que son secados. - un medio de extracción de riles que conduce y transporta hidráulicamente todos los riles que se generen al interior del contenedor flexible. - una unidad de tratamiento de riles para tratar los riles generados al interior del contenedor flexible - una unidad de tratamiento de agua del medio externo que asegura el ingreso de agua fresca y limpia al contenedor flexible. - una unidad de control automático para operar a cada uno de los componentes del contenedor flexible.

SISTEMA AUTONOMO DE ENSAYO E INVESTIGACIÓN EN ACUICULTURA.

Número de publicación:
ES2387245 A1 (18.09.2012)
También publicado como:
ES2387245 B1 (01.08.2013)

Solicitante:
INSTITUT DE RECERCA I TECNOLOGIA AGROALIMENTARIES (100.0%) (ES)
PG. DE GRACIA, 44, 3R 08007 BARCELONA Barcelona ESPAÑA
CIP: ***A01K63/04*** *(2006.01)*
Resumen:
Sistema autónomo de ensayo e investigación en acuicultura que comprende:

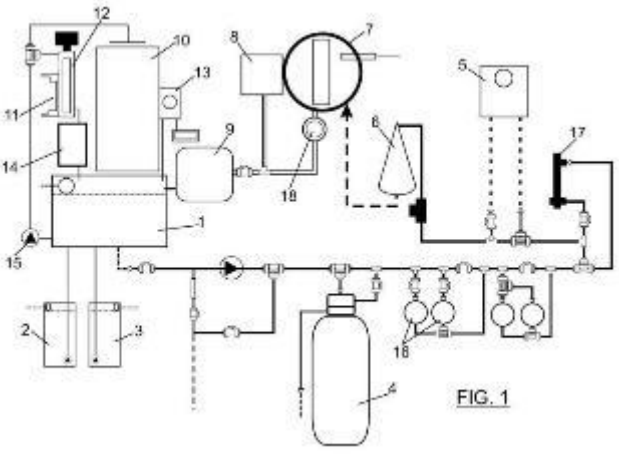


FIG. 1

- un tanque de expansión (1) con depósitos separados e independientes de agua dulce (2) y salada (3),

- una unidad de recirculación del agua del tanque de expansión (1) que comprende una bomba de recirculación (15) que envía el agua a

una unidad de ozonización y a un desgasificador (10),

- medios de conducción del agua del tanque de expansión (1) a una pluralidad de tanques de cultivo (7) que comprenden:

- un biofiltro (4),

- una bomba de calor (5),

-un bicono de oxigenación (6),

- una pluralidad de tanques de cultivo (7),

- un recolector de alimento no ingerido (18)

- un cestillo-trampa (8) para las puestas por cada tanque de cultivo (7),

- una pluralidad de sensores de parámetros de cultivo, y

- una unidad de control de entrada de parámetros de cultivo.

COMPOSTADOR DE SUBPRODUCTOS ANIMALES NO DESTINADOS AL CONSUMO HUMANO PROCEDENTES DE LA ACUICULTURA.

Número de publicación:
ES2394478 A1 (01.02.2013)
Solicitante:
UNIVERSIDAD DE CÁDIZ (ES)
OTRI-UNIV. DE CÁDIZ, C/ BENITO PÉREZ GALDOS, S/N 11002 CÁDIZ Cádiz ESPAÑA
CIP: ***C05F17/02*** *(2006.01)*
Resumen:
Compostador de subproductos animales no destinados al consumo humano procedentes de la acuicultura.

Permite tratar de manera limpia, segura y eficiente pequeñas cantidades de residuos (hasta 0,5 m^3 procedentes de las mortandades ordinarias generadas en instalaciones acuícolas.

El compostador consta de una serie de elementos estáticos (1, 3 y 6) y móviles (2, 4 y 5), comunicados. Existe un eje mezclador (4 y 8) situado a lo largo de todo el equipo y un sistema de aireación (3). Asimismo, existen controles (7) de la humedad y temperatura y otros parámetros de proceso regulados por ordenador.

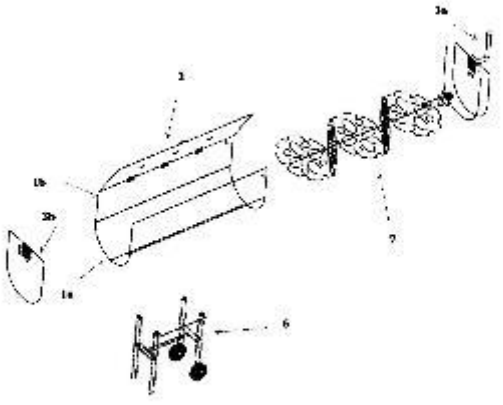


Fig. 2

COMPOSTADOR DE SUBPRODUCTOS ANIMALES NO DESTINADOS AL CONSUMO HUMANO PROCEDENTES DE LA ACUICULTURA

Número de publicación:
ES1079605 U (21.05.2013)
También publicado como:
ES1079605 Y (19.08.2013)
Solicitante:
UNIVERSIDAD DE CÁDIZ (100.0%) (ES)
OTRI-UNIV. DE CÁDIZ, C/ BENITO PÉREZ GALDOS, S/N 11002 CÁDIZ Cádiz ESPAÑA
CIP:*C05F17/02* *(2006.01)*

Reivindicaciones:
1. Compostador de subproductos animales no destinados al consumo humano procedentes de la acuicultura que comprende:

a) Una envolvente de geometría semicilíndrica en su parte inferior (1a) y terminada en su parte superior por una tapa adecuada (2).

b) El conjunto eje-motor ubicado en el interior de la envolvente dispuesto con álabes de geometría elipsoidal, a los que se les han practicado orificios repartidos uniformemente por toda su superficie, para aligerar peso y facilitar el paso de masa evitando compactaciones que afecten a su correcta aireación (7).

c) Un sistema cruzado de renovación de gases compuesto por un elemento de ventilación forzada (3b) y otro de extracción de gases.

d) Un sistema de carga y descarga compuesto por guías fijadas a la envolvente (5) o bien por mecanismo de engranajes tipo corona-piñon.

e) Un soporte del conjunto compuesto por una estructura metálica que posibilita el giro de la envolvente y su fácil transporte por medio de ruedas provistas con freno (6).

f) Un sistema de captación, control y registro de parámetros de proceso (8) como temperatura, humedad de la masa de aire del interior del compostador, así como, velocidad y frecuencia de giro del eje mezclador y, la temperatura de masa que se composta, todo ello, adecuado al compostador objeto de la invención.

2. Compostador de subproductos animales no destinados al consumo humano procedentes de la acuicultura, según reivindicación 1, caracterizado por disponer de los siguientes elementos: tapas de cierre, en su parte superior (2) y; en sus laterales izquierda y derecha, compuestos por dos planchas de la misma geometría y material descrito para la envolvente, en las cuales se insertan los elementos desmontables que componen el sistema de aireación-extracción, que posibilita que el proceso de compostaje sea aerobio.

3. Compostador de subproductos animales no destinados al consumo humano procedentes de la acuicultura, según reivindicación 1, caracterizado por un conjunto eje-motor en el que los álabes unidos al eje por su centro, se ubican a toda su longitud orientados en el rango angular de 55-65º con respecto al mismo.

4. Compostador de subproductos animales no destinados al consumo humano procedentes de la acuicultura, según reivindicación 1, caracterizado porque la

estructura de soporte admite un eficaz volcado bien, por medio de unas guías (5) o, por medio de un mecanismo de engranajes tipo corona-piñón.

5. Compostador de subproductos animales no destinados al consumo humano procedentes de la acuicultura, según reivindicaciones 1 y 4, caracterizado porque el conjunto formado por envolvente y tapas son soportados por una estructura compuesta por perfilería metálica normalizada finalizada en dos de sus patas mediante ruedas con freno, para facilitar su transporte (6).

6. Compostador de subproductos animales no destinados al consumo humano procedentes de la acuicultura, según reivindicación 1, caracterizado porque dispone de un sistema de captación, control y registro de parámetros de proceso (8) tales como temperatura, humedad de la masa de aire del interior del compostador y, la temperatura de masa que se composta, así como medir la velocidad y frecuencia de giro del eje mezclador (7) y del sistema de ventilación-extracción (3a y 3b).

COMPOSICIÓN PARA EL TRATAMIENTO DE ECTOPARASITOSIS Y LA PROMOCIÓN DEL CRECIMIENTO EN ACUICULTURA

También publicado como:
WO2016063105 A1 (28.04.2016)
Solicitante:
LABORATORIO AVI-MEX, S.A. DE C.V. (MX)
Maíz No. 18 Col. Granjas Esmeralda Del. Iztapalapa, MÉXICO
CIP: ***A01N33/04*** *(2006.01)* ***A61K31/132*** *(2006.01)*

Resumen:
Composición para acuicultura, caracterizada que comprende por lo menos un compuesto protector externo de especies acuáticas, solo o en combinación con otros compuestos o excipientes. Igualmente, se describe una composición de alimento para acuicultura. Ambas composiciones son útiles en el tratamiento seguro y eficaz de ectoparasitosis en acuicultura, así como en la promoción del crecimiento en acuicultura. Otro aspecto de la invención considera un baño de inmersión para acuicultura para el tratamiento o prevención de ectoparasitosis, y para promover el crecimiento.

INSTALACION AUTONOMA PARA ACUICULTURA

Número de publicación:
ES2000961 A6 (01.04.1988)
Solicitante:
DEL CAMPO RUIZ DE ALMODOVAR, CESAR (ES)
EDUARDO Y FELIPE OSBORNE, 47, PUERTO DE SANTA MARIA 11 CADIZ
CIP: ***A01K61/00*** *(2006.01)* ***A01K61/02*** *(2006.01)*
Resumen:
UNA INSTALACION AUTONOMA PARA ACUICULTURA, QUE COMPRENDE UN RECEPTACULO O CRIADERO CON MEDIOS DE APERTURA RAPIDA, EL CUAL SE MANTIENE SUMERGIDO EN EL MAR MEDIANTE DOS BOYAS, UNA SUPERIOR QUE ACTUA ADEMAS COMO DEPOSITO SUMINISTRADOS DE PIENSO, RELACIONADA CON ESTE A TRAVES DE UN TUBO DE DESCARGA Y LA OTRASUMERGIDA INFERIORMENTE Y VINCULADA A LA PARTE INFERIOR DE TAL CRIADERO A TRAVES DE UN CABLE PASANTE POR UNOS CANCAMOS PREVISTOS EN UN PESO MUERTO DISPUESTO EN EL FONDO MARINO, TODO ELLO DE

MANERA TAL QUE EN VIRTUD DE AMBAS BOYAS EL CRIADERO PUEDA MOVERSE ASCENDENTE-DESCENDETEMENTE EN CASOS DE OLEAJES, MANTENIENDOSE EN SITUACION DE PERMANENTE TENSION PARA EL AMARRE, A EXPENSAS DE LA BOYA INFERIOR SUMERGIDA. EL CRIADERO ESTAADEMAS VINCULADO ENTRE AMBAS BOYAS DE MANERA QUE PUEDE GIRAR SOBRE SU EJE, PERMITIENDO SOPORTAR IMPACTOS, POR EJEMPLO, CONEL CASCO DE UN BARCO, SIN SUFRIR DETERIOROS.

BATEA PARA ACUICULTURA.

Número de publicación:
ES1043507 U (01.01.2000)
También publicado como:
ES1043507 Y (16.08.2000)
Solicitante:
MARINA EXPERIMENTAL SOCIEDAD LIMITADA (ES)
C/ CARDENAL QUIROGA, N- 18, 32003 OURENSE
CIP:*A01K61/00* *(2006.01)*

Reivindicaciones:
Batea para acuicultura.

Caracterizado por un modelo de estructura metálica flotante, de planta cuadrangular, de dimensiones 16 x 16 metros, que sirve de plataforma soporte a cuatro jaulas cúbicas de estructura tubular metálica, conteniendo bolsas de red pesquera, de forma paralelepipédica, mantenidas en suspensión mediante cadenas atadas a argollas en la parte superior.

ESTRUCTURA DE FLOTACION PARA REMOLQUE DE JAULAS PARA ACUICULTURA MARINA.

Número de publicación:
ES1053920 U (01.06.2003)
También publicado como:
ES1053920 Y (16.09.2003)
Solicitante:
QUINTAS Y QUINTAS ESPAÑA, S.L. (ES)
POLG. IND. EL REBULLON NAVE 54B,MOS 36416 PONTEVEDRA
CIP: ***B63B35/44*** *(2006.01)* *A01K61/00* (2006.01)
Reivindicaciones:
1. Estructura de flotación para remolque de jaulas para acuicultura marina. Una jaula armada mediante una estructura anular superior compuesta de una serie de soportes equidistados y todos fabricados en polietileno de alta densidad que se caracteriza porque los soportes (5) de la estructura de la jaula (1), de original configuración en "L", comporta en su cuerpo base (7) agujeros (16) donde esencialmente se ubican medios de flotación, boyas (18), que en su base superior comportan sendas orejetas paralelas (19), lateralmente reforzadas (20) y dotadas de agujeros (21) que sirven para la fijación del flotador (18) a dicha base (7) del soporte (5) mediante pasadores de acero inoxidable, componiendo un conjunto completo de flotación para la jaula (1) que asegure una mayor velocidad y estabilidad en el arrastre de dicha jaula (1).

2. Estructura de flotación para remolque de jaulas para acuicultura marina, según la reivindicación 1, los miembros de flotación se caracterizan porque los miembros

deflotación o boyas (18) son cuerpos cilíndricos anchos y bajos susceptibles de rellenarse con poliestereno expandido.

3. Estructura de flotación para remolque de jaulas para acuicultura marina, según la reivindicación 1, los soportes de tradicional forma en "L" y diseño original se caracterizan porque en el brazo verticales existen refuerzos laterales (10) en forma de depresiones y refuerzos frontales en forma de nervios anterior (9) y posterior (8) que, además, tienen agujeros (15) de pequeño diámetro para amarrar cabos y otros elementos de pequeña sección con distintas finalidades.

4. Estructura de flotación para remolque de jaulas para acuicultura marina, según la reivindicación 3 el soporte de la estructura, de diseño original, se caracteriza porque dicho soporte (5) es de robusta constitución, está fabricado por rotomoldeado en polietileno de alta densidad, con protección anti-UV.

5. Estructura de flotación para remolque de jaulas para acuicultura marina, según la reivindicación 2, el cuerpo base de dicho soporte se caracteriza porque en la planta de dicha base (7A), existe una superficie antideslizante, compuesta de estrías transversales (14) para facilitar el trabajo de los operarios que la pisarán.

DISPOSITIVO DE ENERGIA RADIANTE PARA EL ACONDICIONAMIENTO MICROCLIMATICO DE MEDIO AMBIENTES AISLADOS DISEÑADOS PARA LA ACUICULTURA, HIDROCULTURA Y EL CULTIVO DOMESTICO

Número de publicación:
ES2128540 T3 (16.05.1999)
También publicado como:
EP0610163 A1 (10.08.1994)
EP0610163 B1 (07.01.1999)
Solicitante:
ROMEO, GIULIO (IT)
2A, VIA DEI RAMNI,I-00185 ROME
CIP: ***A01G9/24*** *(2006.01)*

Resumen:
Se presenta un dispositivo para el acondicionamiento microclimatico que comprende un tanque de cultivo (1), una masa fluida de almacenamiento de calor mantenida en un contenedor (5) externo a dicho tanque, un colector solar (8) interconectado con dicho contenedor externo por conductos de entrada y salida y una cubierta transparente movil (3) para dicho tanque, provista con una pantalla parasol movil (9).

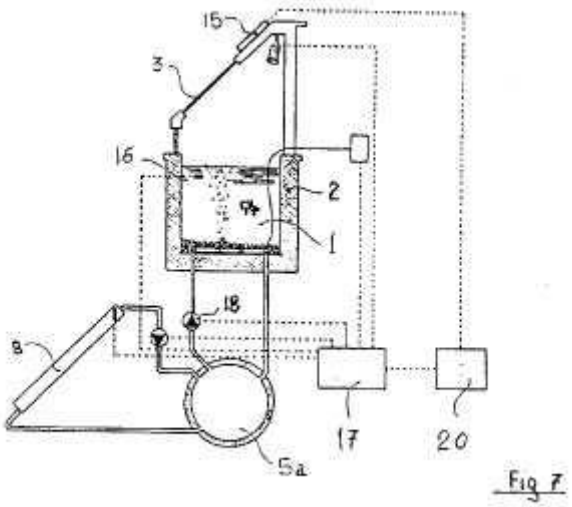


Fig 7

BATEA DE ACUICULTURA MARINA PARA EL CULTIVO DEL MEJILLON

Número de publicación:
ES1063449 U (16.10.2006)
También publicado como:
ES1063449 Y (10.09.2009)

Solicitante:
AQUINAVAL, S.L. (ES)
POL.IND. LALIN 2000 VAL. B PARC. 15B,LALIN 36500 PONTEVEDRA

CIP: ***A01K61/00*** *(2006.01)*

Reivindicaciones:
1. Batea de acuicultura marina para el cultivo del mejillón, que constituyéndose a partir de un conjunto de vigas longitudinales y transversales de polietileno, formando una estructura reticular, en donde las vigas transversales quedan situadas por debajo de las vigas longitudinales, se caracteriza porque sobre las vigas longitudinales, de ligera menor longitud que las vigas transversales, van fijadas otras vigas también longitudinales, superpuestas a las anteriores y de ligera o menor anchura, sobre las cuales se fija una pluralidad de listones de madera determinantes de los soportes de colgado para las cuerdas de cría del mejillón, habiéndose previsto que la viga transversal e inferior correspondiente a la proa o parte delantera, cuente con un frente curvo-convexo o semicilíndrico.

2. Batea de acuicultura marina para el cultivo del mejillón, según reivindicación 1ª, caracterizada porque en correspondencia con la viga transversal de proa existe una segunda viga, central y de menor longitudpara el amarre de una cadena para fondeo, estando reforzada la estructura reticular mediante una viga transversal próxima a la proa.

3. Batea de acuicultura marina para el cultivo del mejillón, según reivindicaciones anteriores, caracterizada porque las vigas longitudinales y transversales son de polietileno y están rellenas de poliestireno expandido, mientras que las vigas longitudinales que quedan superpuestas y son de menor anchura, están vacías y cuentan en sus extremos con tapones que posibilitan el llenado con agua de las mismas.

4. Batea de acuicultura marina para el cultivo del mejillón, según reivindicaciones anteriores, caracterizada porque las vigas longitudinales y transversales se fijan entre sí mediante espárragos roscados, pasantes axialmente a través de tubos comprendidos entre la parte inferior de las vigas transversales y la parte superior de las vigas longitudinales, colaborando en la fijación respectivas arandelas de tope.

BATEA OCEANICA PARA ACUICULTURA

Número de publicación:
ES1070567 U (30.09.2009)
Solicitante:
ISOCEAN, S.L (ES)
HERMOSILLA 95 4 C,MADRID 28006
CIP: ***A01K61/00*** *(2006.01)*
Reivindicaciones:
1. Batea oceánica para acuicultura, del tipo de las que disponen de una estructura flotante destinada al cultivo de moluscos bivalvos, caracterizada porque comprende un entramado formado por una pluralidad de vigas (1) inferiores alineadas, una pluralidad de vigas (2) superiores también alineadas y dispuestas sobre las vigas superiores (1) perpendicularmente, unos listones (8) de madera para el amarre de la carga colocados sobre las vigas (2) superiores transversalmente, de manera que la unión de las vigas (2) superiores y las vigas inferiores (1) se realiza a través de unos pernos (3) que las fijan de manera amovible, así como la unión de los listones (8) de madera al conjunto se realiza a través de unas guías (9) de polietileno dispuestas sobre las vigas (2) superiores, de manera que los listones (8) de madera se atornillan sobre las guías (9) de polietileno.

2. Batea oceánica para acuicultura, según reivindicación 1, caracterizada porque tanto las vigas (1) inferiores, como las vigas superiores (2), así como los listones (8) de madera, se colocan equidistantes en el conjunto de la estructura.

3. Batea oceánica para acuicultura, según reivindicaciones anteriores, caracterizada porque las vigas (1) inferiores y las vigas superiores (2) son de sección rectangular.

4. Batea oceánica para acuicultura, según reivindicaciones anteriores, caracterizada porque las vigas (1) inferiores poseen la pared de polietileno de alta densidad y están rellenas de espuma de poliuretano inyectado o poliestireno.

5. Batea oceánica para acuicultura, según reivindicaciones anteriores, caracterizada porque de las vigas (2) superiores una parte poseen la pared de polietileno de alta densidad y disponen de un tapón en la zona superior para poder ser cargadas de agua, otra parte poseen la pared de polietileno de alta densidad y están rellenas de poliuretano inyectado o poliestireno.

6. Batea oceánica para acuicultura, según reivindicación 5, caracterizada porque la parte de la vigas (2) superiores que se carga de agua están parcialmente rellenas de espuma de poliuretano inyectado o poliestireno.

7. Batea oceánica para acuicultura, según reivindicaciones anteriores, caracterizada porque las vigas (1) inferiores y las vigas superiores (1) disponen de una zona habilitada para el paso de los pernos (8) de unión, zona que consiste en unos tubos (4) de polietileno de diámetro superior al diámetro del perno (8), pasando dicho perno (8) a través del tubo (4) y asegurando de este modo la estanqueidad de la vigas (1, 2).

8. Batea oceánica para acuicultura, según reivindicaciones anteriores, caracterizada porque para la fijación del perno (8) se colocan una arandela (6) en forma de "U" invertida sobre la viga (2) superior y una arandela (5) en forma de "U" bajo la viga (1) inferior, realizando el apriete mediante tuercas (7).

9. Batea oceánica para acuicultura, según reivindicaciones anteriores, caracterizada porque comprende una zona para el amarre de la cadena de fondeo reforzada mediante un carenado (10) de chapa de acero galvanizada, con una viga adicional (11) para contrarrestar el peso de la cadena.

UNION DE LOS MODULOS QUE COMPONEN LA ESTRUCTURA DE LAS BALSAS FLOTANTES EMPLEADAS EN ACUICULTURA
Número de publicación:
ES0293011 U (16.12.1986)
También publicado como:
ES0293011 Y (16.08.1987)
Solicitante:
MELENDEZ ROBLEDILLO,J MARIA (ES)
ANDORRA, 3, 28043 MADRID
Otro/s solicitante/s:
TORRES PEREZ,MARTA DE
CIP: ***A01K61/00*** *(2006.01)*

Primera reivindicación:
Unión de los módulos que estructura flotantes empleadas en acuicultura. Constituida por

A.- Uno, dos o más unidades de acero, de perfiles en ángulo uno o varios taladros o perforaciones, no de los módulos, de forma tal que entre ellas exista una separación y coincidan para la unión los ejes de simetría de las perforaciones señaladas. Las unidades de acero mencionadas pueden tambien de perfiles en "U" (ues), en "T" (tes) cilindros con taladro u orificio interior, u otros que cumplan igual misión

B.- Uno, dos o más unidades de acero, de perfiles en "T" (tes) con uno o varios taladros o perforaciones soldados o unidos sobre el otro modulo a unir con el primero, de tal forma que entre ellos exista una separación y coincidan para la unión los ejes de simetría de los taladros señalados. Las unidades de acero mencionadas tambien pueden ser de perfiles en ángulo ", en "U" (ues), cilindro con taladro u orificio interior u otros que cumplan igual misión.

C.- Uno, dos o más pasadores de acero, de perfil igual o distinto al de las perforaciones existentes en las unidades de acero mencionadas anteriormente, o tambien cable o cuerda u otros que cumplan igual misión.

MÉTODO DE ACUICULTURA.

Número de publicación:
ES2286622 T3 (01.12.2007)
También publicado como:
EP1603386 A1 (14.12.2005)
EP1603386 B1 (18.04.2007)
EP1603386 B8 (30.05.2007)
WO2004080165 A1 (23.09.2004)
Solicitante:
RIBES, GILBERT (FR)
LA CASTILLONNE, 34530 MONTAGNAC
Otro/s solicitante/s:
RIBES, ANDRE
CIP: ***A01K61/00*** *(2006.01)*

Resumen:
Método de acuicultura, caracterizado por el hecho de que consiste en criar a temperatura constante, a través de un circuito reciclado de producción, una especie de pez de aguas templadas previamente adaptado a una temperatura constante aplicada de manera continua y correspondiente a su óptimo térmico.

ESTRUCTURA FLOTANTE MARINA PARA ACUICULTURA.

Número de publicación:
ES2268927 A1 (16.03.2007)
También publicado como:
ES2268927 B1 (16.02.2008)
Solicitante:
RONAUTICA, S.A. (ES)
MUELLE DE BOUZAS, S/N.,VIGO 36208 PONTEVEDRA
CIP: ***A01K61/00*** *(2006.01)*

Resumen:
Estructura flotante marina para acuicultura.

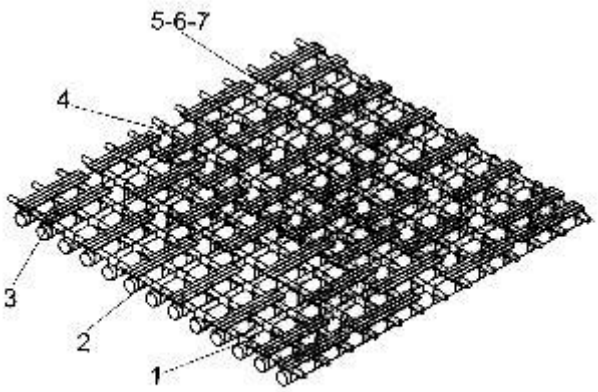


FIG. 2

Está destinada como otras de su tipo para la producción de mejillón y otros moluscos bivalvos, determinada por una batea o trama flotante de la que penden las cuerdas para el cultivo.

Está constituida por una estructura formada por dos series de tubos paralelos (1, 2) de extremos ciegos y de distinto diámetro que se cruzan perpendicularmente, unidas en sus nudos por medio de unas piezas de unión (4) que se fijan con ayuda de un cable de acero (5) con dos varillas roscadas (7) en sus extremos para su conexión a un cuerpo tensor (6) que fija el conjunto.

El desplazamiento de los operarios por la estructura flotante se realiza por unas pasarelas (3) situadas en la parte superior y fijadas preferentemente a las piezas de unión (4) de la estructura.

EQUIPO ELECTRONICO MULTIFUNCIONAL Y PROGRAMABLE PARA USO EN ACUICULTURA.
Número de publicación:
ES2313812 A1 (01.03.2009)
Solicitante:
UNIVERSIDAD POLITECNICA DE CARTAGENA (ES)
ED. "LA MILAGROSA" PLAZA CRONSITA ISIDORO VALVERDE, S/N,CARTAGENA 30202 MURCIA
CIP: ***A01K79/02*** *(2006.01)*

Resumen:
Equipo electrónico multifuncional y programable para uso en acuicultura.

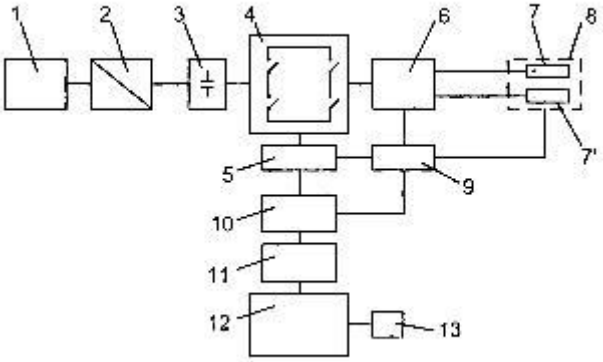


FIG. 1

Especialmente concebido para el electroaturdimiento, electronarcosis, electrotaxis, o electrosacrificio de especies acuáticas tanto de agua dulce como salada, de cualquier tamaño, el equipo incorpora un convertidor de potencia (4) a cuya entrada se dispone un rectificador (2) a través del que se alimenta eléctricamente, y a cuya salida se establecen previo filtrado (6) una pareja de electrodos (7-7''), que pueden estar integrados en un arpón (8) o ser físicamente independientes. El convertidor de potencia (4) está asociado a un módulo de control (12), que puede materializarse en un ordenador portátil, una agenda electrónica, un teléfono móvil o cualquier dispositivo similar que permita la instalación en su seno de un determinado software de control del equipo a través del que seleccionar, de forma manual o automática, cualquier tipo de onda a la salida de los electrodos (7-7''), en función del tamaño y tipo de especie acuática a aplicar la descarga eléctrica. El equipo incorpora una serie de sensores (9) de corriente y tensión para el registro de datos y protección del equipo.

COMPOSICIONES Y METODOS A UTILIZAR EN ACUICULTURA
Número de publicación:
ES2182963 T3 (16.03.2003)
También publicado como:
EP0804069 A1 (05.11.1997)
EP0804069 A4 (17.03.1999)
EP0804069 B1 (11.09.2002)
WO9620589 A1 (11.07.1996)

Solicitante:
OMS INVESTMENTS, INC. (US)
824 MARKET STREET MALL SUITE 102A,WILMINGTON, DELAWARE 19801
CIP: ***A01G33/00*** *(2006.01)* ***A01K61/00*** *(2006.01)* ***C05C9/02*** *(2006.01)* ***C05G3/00*** *(2006.01)* ***C05G5/00*** *(2006.01)*

Resumen:
EN METODOS DE TRATAMIENTO DE ACUICULTURA SE UTILIZAN COMPOSICIONES FERTILIZANTES DE LIBERACION CONTROLADA QUE LIBERAN UN FERTILIZANTE A UNA VELOCIDAD CONTROLADA DURANTE UN PERIODO PROLONGADO DE TIEMPO CON LO QUE LOS NUTRIENTES SE LIBERAN DE FORMA EFICIENTE Y EFECTIVA EN ECOSISTEMAS ACUATICOS CERRADOS TALES COMO ESTANQUES, LAGOS, CUENCAS Y OTROS ENTORNOS ACUOSOS DURANTE UN PERIODO DE TIEMPO PARA AUMENTAR EL CRECIMIENTO DE POBLACIONES DE ALGAS FITOPLACTONICAS EN EL AGUA Y PROMOVER ASI LAS POBLACIONES DE VIDA MARINA.

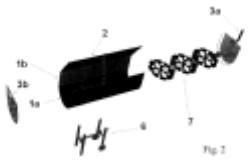
ACUICULTURA DE GUSANOS MARINOS.
Número de publicación:
ES2254850 T3 (16.06.2006)
También publicado como:
EP1380206 A1 (14.01.2004)
EP1380206 B1 (07.12.2005)

Solicitante:
SEABAIT LIMITED (GB)
WOODHORN VILLAGE,ASHINGTON, NORTHUMBERLAND N
CIP: ***A01K67/033*** *(2006.01)*

Resumen:
Método para conservar larvas de poliqueto (Polychaeta) que comprende enfriar rápidamente las larvas que se han desarrollado hasta la fase en la que tienen tres parapodios que presentan cerdas bien desarrollados, y conservar o almacenar las larvas en condiciones criogénicas.

COMPOSTADOR DE SUBPRODUCTOS ANIMALES NO DESTINADOS AL CONSUMO HUMANO (SANDACH) PROCEDENTES DE LA ACUICULTURA
También publicado como:
WO2012038560 A1 (29.03.2012)
Solicitante:
UNIVERSIDAD DE CÁDIZ (ES)
C/Ancha, 16 E-11001, Cádiz, ESPAÑA
CIP: ***C05F17/02*** *(2006.01)*

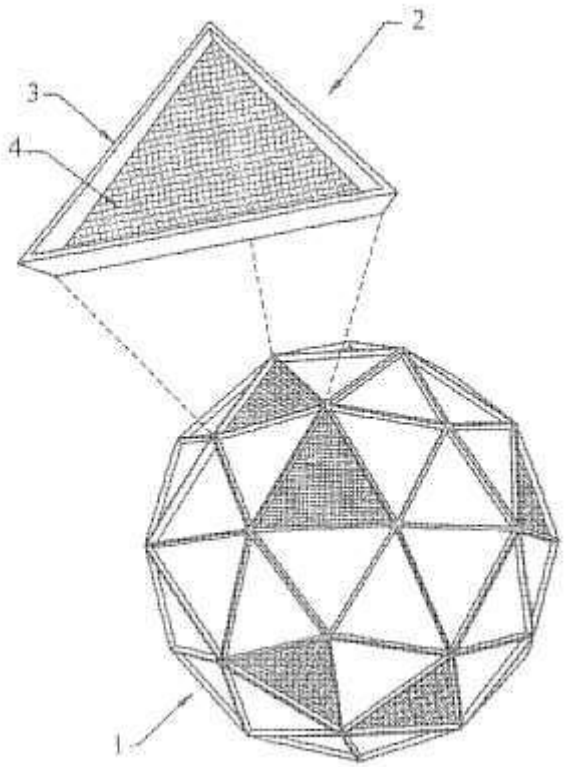
Resumen:
Compostador de subproductos animales no destinados al consumo humano (SANDACH) procedentes de la acuicultura. Permite tratar de manera limpia, segura y eficiente pequeñas cantidades de residuos (hasta 0,5 m



RECINTOS DE CONTENCIÓN PARA ACUICULTURA DE PECES DE ALETAS
Número de publicación:
ES2395165 T3 (08.02.2013)
También publicado como:
EP1806964 A2 (18.07.2007)
EP1806964 A4 (23.01.2008)
EP1806964 B1 (11.01.2012)
WO2006050386 A2 (11.05.2006)
WO2006050386 A3 (14.06.2007)

Solicitante:
Ocean Farm Technologies, Inc. (100.0%) (US)
114 Higgins Road North Searsmont, ME 04973 ESTADOS UNIDOS DE AMERICA
CIP: ***A01K61/00*** *(2006.01)*

Resumen:
Un recinto de contención (1) para acuicultura de peces de aletas, comprendiendouna estructura de soporte,



una red unida a la estructura de soporte y que define un volumen de contención para contener peces conaletas,

en el que la estructura de soporte y la red están configuradas para formar un recinto de tamaño suficiente paraservir como un recinto de contención para peces con aletas nadando,

en el que la red comprende una pluralidad de paneles de red desmontables (2), en donde cada uno de lospaneles de red tiene forma de un polígono;

en el que cada uno de los paneles de red desmontables (2) comprende una parte discreta de red flexible (4)unida a lo largo de su perímetro a al menos tres vigas estructurales sustancialmente rígidas (3) unidas en susextremos para definir la forma poligonal, y

en el que los paneles de red desmontables (2) están configurados para ser desmontables del recinto decontención con la pieza de red flexible (4) permaneciendo unida a las al menos tres vigas sustancialmenterígidas,

en el que la pluralidad de paneles de red (2) proporciona la estructura de soporte para una mayor parte delrecinto de contención,

en el que los paneles de red contiguos (2) se unen fijando conjuntamente vigas contiguas (3), y

en el que los paneles (2) están conformados de modo que una viga (3) de un panel se extiende generalmenteparalela y adyacente a una viga de un panel contiguo.

PROCESO Y SISTEMA PARA LA FABRICACIÓN DE ACIETES NATURALES OZONIZADOS Y SU APLICACIÓN EL TRATAMIENTO EN HUMANOS, ANIMALES, VEGETALES Y EN ACUICULTURA

También publicado como:
WO2013040721 A1 (28.03.2013)
Solicitante:
HERNÁNDEZ PAVÉZ, José Octavio (CL)
Avda Consistorial 2780 Peñalolén, 7940624 Santiago, CHILE
Otro/s solicitante/s:
SILVA VARGAS, Victor Eugenio (CL)
CIP: ***C11C3/00*** *(2006.01)* ***A01N65/12*** *(2009.01)* ***A61K36/28*** *(2006.01)* ***A61K36/48*** *(2006.01)* ***A61K36/899*** *(2006.01)* ***A61P31/04*** *(2006.01)* ***A61P31/10*** *(2006.01)* ***C11C3/08*** *(2006.01)*

Resumen:
Los aceites naturales son primeramente tratados con alcoholes en presencia de un catalizador alcalino en un reactor, tras los cual se sedimentan, separándose una fase orgánica constituida por ésteres de ácidos grasos que son tratados en un evaporador al vacío para eliminar los alcoholes y posteriormente en un reactor mediante burbujeo con una mezcla de ozono y oxígeno durante un tiempo que garantice la obtención de un aceite ozonizado con un índice de peróxido mayor de 400 meq/kg de aceite. Los aceites obtenidos por el proceso y sistema se utilizan para aplicaciones terapéuticas como tratamiento de micosis e infecciones bacterianas o virales en humanos, animales, o en vegetales tales como oídio o botritis y en la lucha de Saprolegnia spp. en acuicultura.

INVERNADERO PARA LA ACUICULTURA DE TILAPIA

Número de publicación:
ES2414354 A2 (18.07.2013)
También publicado como:
ES2414354 R1 (23.07.2013)
ES2414354 B1 (08.07.2014)
Solicitante:
FUNDACION PARA LAS TECNOLOGIAS AUXILIARES DE LA AGRICULTURA (100.0%) (ES)
SEDE CIENTIFICA DEL PARQUE CIENTIFICO-TECNOLOGICOS DE ALMERIA. CAMPUS DE LA UNIVERSIDAD DE ALMERIA 04120 ALMERIA Almería ESPAÑA
CIP: ***A01K61/00*** *(2006.01)* ***A01G9/14*** *(2006.01)*

Resumen:
La presente invención hace referencia a un invernadero para la acuicultura, especialmente para la acuicultura de la tilapia, que presenta unas condiciones térmicas propicias para el cultivo de dicha especie, teniendo en cuenta el balance energético en los estanques que se encuentran en el interior del mismo.

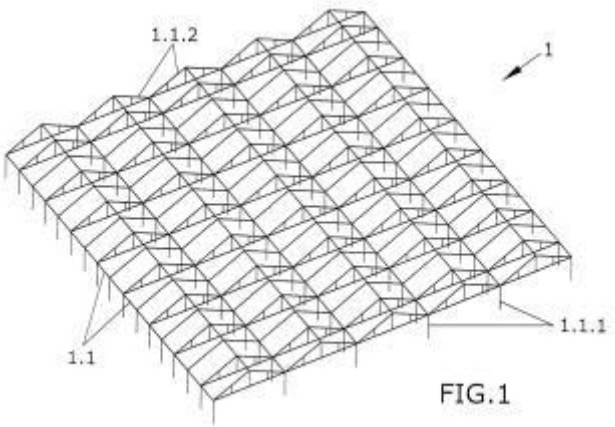


FIG.1

RED DE ACUICULTURA CON DIFERENTES DENSIDADES DE PESO

Número de publicación:
ES2426768 T3 (25.10.2013)
También publicado como:
EP2230898 A1 (29.09.2010)
EP2230898 B1 (05.06.2013)
WO2009089971 A1 (23.07.2009)
Solicitante:
NV BEKAERT SA (100.0%) (BE)
BEKAERTSTRAAT 2 8550 ZWEVEGEM BELGICA

CIP: ***A01K61/00*** *(2006.01)*

Resumen:
Una red de acuicultura, caracterizada porque dicha red de acuicultura comprende tres partes, estando dichaspartes dispuestas horizontalmente, una parte inferior, una parte intermedia y una parte superior, teniendo dicha parteinferior una densidad de peso que es menor que la densidad de peso de dicha parte intermedia, teniendo dicha parteintermedia una densidad de peso que es menor que la densidad de peso de dicha parte superior.

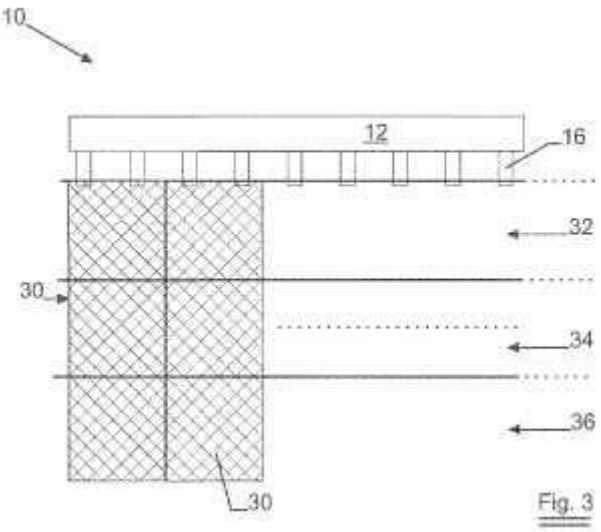


Fig. 3

MÉTODO PARA PREPARAR ALIMENTACIÓN DE ACUICULTURA

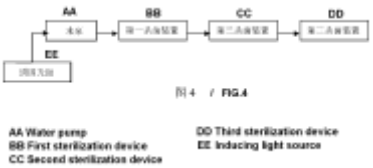
Número de publicación:
ES2435940 T3 (26.12.2013)
También publicado como:
EP2503909 A1 (03.10.2012)
EP2503909 B1 (16.10.2013)
WO2011064538 A1 (03.06.2011)
WO2011064538 A8 (03.05.2012)
Solicitante:
Seafarm Products AS (100.0%) (NO)
Krekane 12 5725 Vaksdal NORUEGA
CIP: ***A23N17/00*** *(2006.01)* ***A23K1/18*** *(2006.01)*

Resumen:
Un método de preparación de alimentos pelletizados de acuicultura para administración a animales acuáticos criados o "cultivados", cuyo método comprende: hacer circular agua en un conducto de bucle (2; 32); introducir pellets alimenticios de acuicultura en el agua que circula en dicho conducto de bucle (2; 32) por lo que se exponen dichos pellets a cambios de presión y se hace por ello que dichos pellets resulten impregnados con agua; y recuperar pellets alimenticios de acuicultura impregnados con agua desde dicho conducto de bucle (2; 32).

SISTEMA DE ESTERILIZACIÓN DE ACUICULTURA

Número de publicación:
ES2532889 A2 (01.04.2015)
También publicado como:
ES2532889 R1 (12.05.2015)
ES2532889 B2 (02.11.2015)
WO2014026551 A1 (20.02.2014)
Solicitante:
STP CO., LTD. (100.0%) (CN)
No.40, Weixin Road, Industrial Park Suzhou 215000 Jiangsu CHINA
CIP: ***C02F1/30*** *(2006.01)* ***A01K61/00*** *(2006.01)* ***C02F1/48*** *(2006.01)*

Resumen:
Sistema de esterilización de acuicultura.

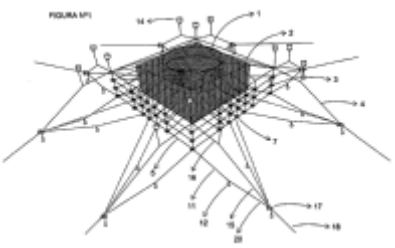


Un sistema de esterilización para acuicultura comprende una fuente de luz de inducción, una bomba de agua y al menos un dispositivo de esterilización. La fuente de luz de inducción se dispone alrededor de una entrada de agua de la bomba de agua. Una salida de agua de la bomba de agua está en comunicación con una entrada del dispositivo de esterilización. Una salida del dispositivo de esterilización está en comunicación con un cuerpo de agua. Mediante fototaxia biológica, se implementa el enriquecimiento de microrganismos en un sistema de cultivo. La esterilización se realiza usando un método de ionización, un método de radiación ultravioleta o un método de campo eléctrico con pulsos de alta tensión para asegurar la alta eficacia de esterilización y reducir simultáneamente un impacto sobre el entorno del acuicultivo tanto como sea posible, asegurando de esta manera la producción y calidad de los productos acuáticos.

SISTEMA RETICULADO DE FONDEO PARA ACUICULTURA

También publicado como:
WO2017075727 A1 (11.05.2017)
Solicitante:
BUSCHMANN SCHIRMER, Walter Francisco Alfredo (CL)
Ruta 5 Sur, Km. 1028, s/n, Sector Alto Bonito Puerto Montt, CHILE
CIP: ***A01K61/00*** *(2017.01)* ***B63B21/00*** *(2006.01)* ***B63B21/04*** *(2006.01)* ***B63B35/00*** *(2006.01)* ***B63B35/26*** *(2006.01)* ***F16G11/00*** *(2006.01)*

Resumen:
Sistema de reticulado de cabos o cuerdas para jaulas de cultivo de peces, formado por una estructura flotante de la cual pende y circunda una red pecera que encierra un volumen de agua para el cultivo de peces, una red protectora contra depredadores o también denominada red lobera, dispuesta a una distancia desde la red pecera y rodeando todo el perímetro de ésta, donde el sistema de reticulado se encuentra unido y es parte de un sistema de fondeo de la jaula, y se encuentra configurado por una serie de cabos, cuerdas o líneas horizontales y verticales vinculados entre sí para formar un entramado de cabos, cuerdas o líneas.



DISPOSITIVO DE ANALISIS MORFOMETRICO DE IMAGENES PARA DESARROLLAR ESTRATEGIAS DE ALIMENTACION EN ACUICULTURA.

Número de publicación:
ES2289940 A1 (01.02.2008)
También publicado como:
ES2289940 B1 (16.12.2008)
Solicitante:
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)
CIP: *A01K61/00 (2006.01) G01B11/04 (2006.01)*

Resumen:
Dispositivo de análisis morfométrico de imágenes para desarrollar estrategias de alimentación en acuicultura.

La presente invención es un equipo que permite establecer una estrategia de alimentación en una explotación piscícola gracias a la evaluación de su estado nutricional y a la determinación de su potencial de crecimiento.

Previamente al estudio de una población concreta, el equipo permite desarrollar un modelo de crecimiento de referencia para la especie en cuestión, para lo que el equipo establece relaciones alométricas entre los datos obtenidos de las imágenes, que analiza y procesa mediante técnicas estadísticas de análisis multivariante.

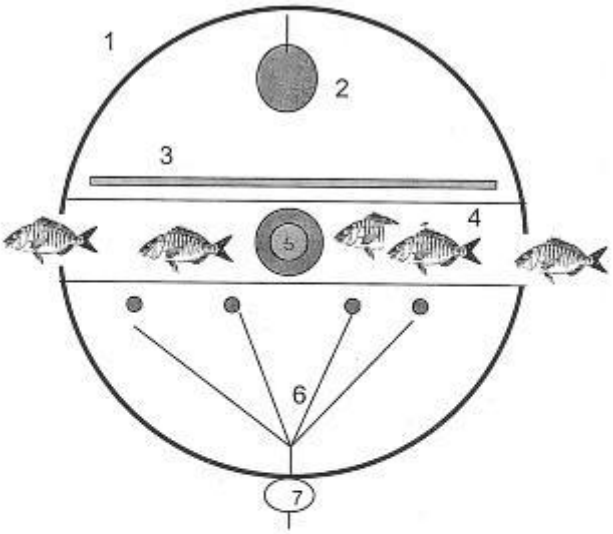


Figura 1. Vista lateral (Perfil)

PLATO DE AMARRE DE JAULAS FLOTANTES PARA ACUICULTURA
Número de publicación:
ES1054441 U (16.07.2003)
También publicado como:
ES1054441 Y (01.11.2003)
Solicitante:
QUINTAS Y QUINTAS ESPAÑA, S.L. (ES)

CIP: *A01K61/00 (2006.01)*

Reivindicaciones:
1. Plato de amarre de jaulas flotantes para acuicultura, el conjunto comprende un plato principal de amarre y un platillo de seguridad fabricados en acero galvanizado, que se caracterizan porque dicho plato principal es una pieza discoidal (8) provisto de diversas hendiduras radiales en forma de tridente distribuidas en cuatro grupos idénticos (16, 23, 24, 25) con terminaciones circulares a 270º, y una hendidura rectangular central; y porque el platillo de seguridad (9) es de forma discoidal con un agujero central circular (22) para las correspondientes líneas de amarre (4) y fondeo (5) respectivamente.

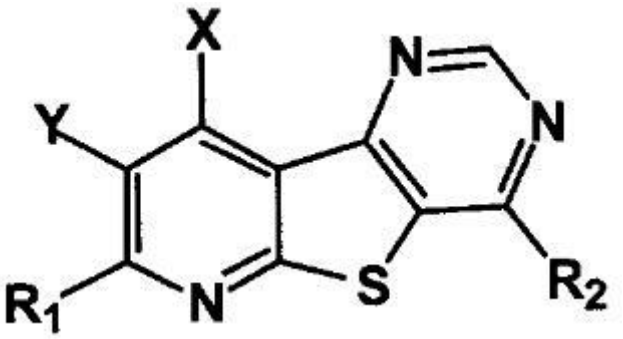
2. Plato de amarre de jaulas flotantes para acuicultura, según la reivindicación anterior, los medios de sujeción se caracterizan porque en el caso de las líneas de amarre (4) y fondeo (5) la unión entre plato (8) y cabo (4) se efectúa mediante tramos de cadena galvanizada (20) que se pasan por las hendiduras (16, 23, 24, 25) del plato donde son fijados por el platillo de seguridad (9) y seconectan al cabo de fondeo (5) o amarre con grillete (19); en el caso de las líneas de entramado (3) se efectúa con grillete; y en el caso de la cadena (11) de la boya (12) se efectúa con un bulón roscado de acero galvanizado con tuerca y pasador de seguridad (13, 14, 15) permitiendo unos puntos de unión flexibles con un óptimo ángulo de salida de cada línea del plato.

PIRIDOTIENOPIRIMIDINAS SUSTITUIDAS DE FORMULA GENERAL I COMO ANTIPROTOZOARIOS PARA ACUICULTURA Y PROCEDIMIENTO DE PREPARACION.

Número de publicación:
ES2234438 A1 (16.06.2005)
También publicado como:
ES2234438 B2 (01.08.2006)
Solicitante:
UNIVERSIDADE DE SANTIAGO DE COMPOSTELA (ES)

CIP: *A61K31/4375 (2006.01) A61K31/519 (2006.01) A61K31/53 (2006.01) A61P33/02 (2006.01) C07D471/04 (2006.01) C07D495/14 (2006.01)*

Resumen:
La presente invención se refiere al procedimiento de preparación de piridotienopirimidinas sustituidas de fórmula general I y a sus aplicaciones en acuicultura para el tratamiento de la scuticociliatosis en moluscos, crustáceos y peces.

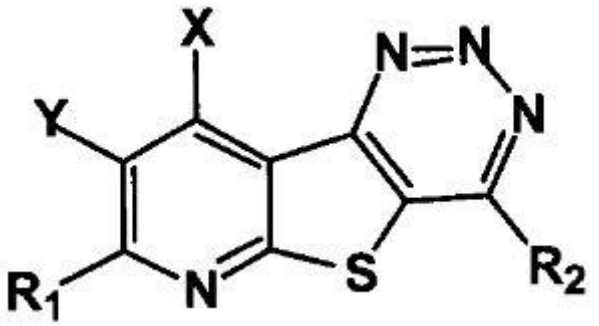


PIRIDOTIENOTRIAZINAS SUSTITUIDAS DE FORMULA GENERAL I COMO ANTIPROTOZOARIOS PARA ACUICULTURA Y PROCEDIMIENTO DE PREPARACION.

Número de publicación:
ES2234439 A1 (16.06.2005)
También publicado como:
ES2234439 B2 (01.11.2006)
Solicitante:
UNIVERSIDADE DE SANTIAGO DE COMPOSTELA (ES)

CIP: *A61K31/4375 (2006.01) A61K31/519 (2006.01) A61K31/53 (2006.01) A61P33/02 (2006.01) C07D471/04 (2006.01) C07D495/14 (2006.01)*

Resumen:
La presente invención se refiere al procedimiento de preparación de piridotienotriazinas sustituidas, de fórmula general I, y a sus aplicaciones en acuicultura para el tratamiento de la scuticociliatosis en moluscos, crustáceos y peces.



TUBOS FLOTADORES PARA LA CONSTRUCCION DE ESTRUCTURAS ARTICULADAS PARA ACUICULTURA MARINA

Número de publicación:
ES1065238 U (16.07.2007)
También publicado como:
ES1065238 Y (16.10.2007)
Solicitante:
SERRANO NARVAEZ,ALBERTO (ES)

Otro/s solicitante/s:
DOCTOR LOPEZ DE PABLOS,JOSE MARCIAL
CIP: *A01K61/00 (2006.01)*

Reivindicaciones:
1. Tubos-flotadores para la construcción de estructuras articuladas para acuicultura marina, caracterizado por estar constituido por un tubo de Polietileno de alta resistencia para presiones internas de 10 kgs/cm^2, y diámetros que pueden variar desde 250 hasta 500 milímetros, en cuyos extremos van soldados sendas "piezas de cierre", también fabricadas en plástico (PEAD), con la función de hacer estanco el tubo y permitir el acoplamiento de otros tubos flotadores. (Figs 1, 2 y 3).

2. Tubos-flotadores para la construcción de estructuras articuladas para acuicultura marina, según la reivindicación anterior, caracterizados porque la disposición de las "piezas de cierre" (Fig. 2 y 3), permiten tanto un acoplamiento longitudinal como transversal de los tubos, formando: líneas, T"s o cruces, y manteniendo todos los tubos-flotadores el mismo plano o línea de flotación, sin superponerse y ello de un modo sencillo y rápido por medio de un solo tornillo y tuerca (Figs. 4 y 5).

3. Tubos-flotadores para la construcción de estructuras articuladas para acuicultura marina, según las reivindicaciones anteriores, caracterizados porque en las piezas de cierre, llevan 2 brazos (superior e inferior) para la sujeción de redes de protección (fig 2.1).

4. Tubos-flotadores para la construcción de estructuras articuladas para acuicultura marina, según las reivindicaciones anteriores caracterizados por una disposición de los mismos en forma de escalera (Figs 6 y 7) de la que se sujetan horizontalmente, por ambos extremos, una malla rectangular, con el cultivo objeto de la producción de acuicultura (1).

PROCEDIMIENTO PARA PREPARAR PIENSOS PARA ACUICULTURA.

Número de publicación:
ES2193893 A1 (01.11.2003)
También publicado como:
ES2193893 B2 (01.06.2004)
Solicitante:
INSTITUTO ESPAÑOL DE OCEANOGRAFIA (ES)

CIP: *A23K10/14 (2016.01) A23K10/18 (2016.01) A23K10/30 (2016.01) A23K50/80 (2016.01)*

Resumen:
Procedimiento para preparar piensos para acuicultura, que se basa en la utilización de harinas de macroalgas procedentes de cultivo intensivo y cuya composición ha sido modificada en vivo por medios naturales, para obtener, mediante un protocolo compuesto por tratamiento químico-físico, ataque enzimático y digestión bacteriana, un biotransformado de alta asimilabilidad, en el que parte de los polisacáridos estructurales han sido transformados en biomasa bacteriana respetando la estructura y composición celular.

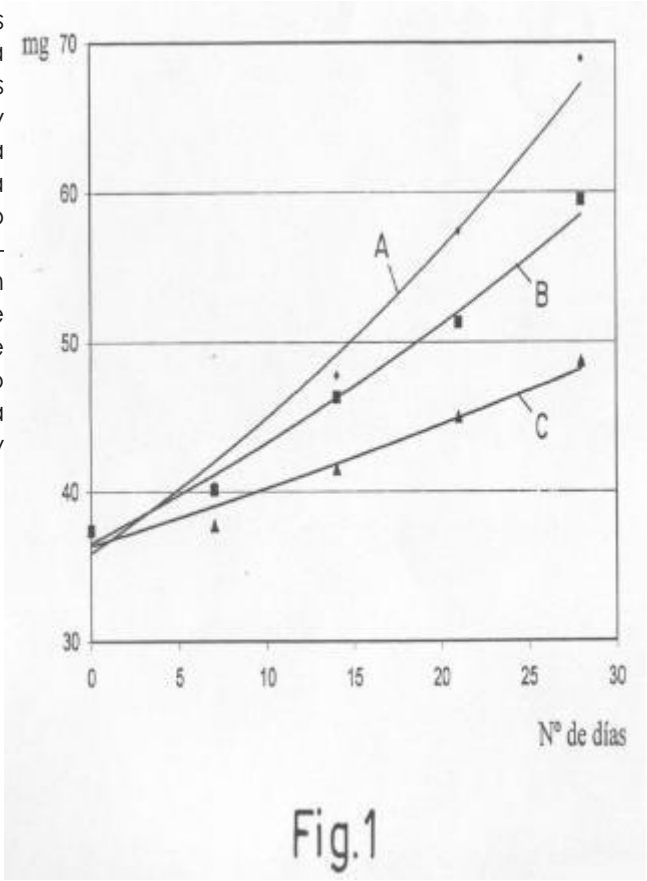


Fig.1

PIENSO Y PROCEDIMIENTO DE ALIMENTACION PARA PECES DE PIEL ROSADO-ROJIZA PROCEDENTES DE LA ACUICULTURA, PARA OBTENER EN LOS MISMOS UNA COLORACION Y APARIENCIA EXTERNA SEMEJANTE A DICHOS ORGANISMOS CUANDO SON OBTENIDOS DIRECTAMENTE DEL MAR MEDIANTE PESCA EXTRACTIVA.

Número de publicación:
ES2304835 A1 (16.10.2008)
También publicado como:
ES2304835 B1 (23.10.2009)
Solicitante:
UNIVERSIDAD DE LAS PALMAS DE GRAN CANARIA (ES)

CIP: *A23K50/80 (2016.01) A23K10/22 (2016.01) A23K20/179 (2016.01)*

Resumen:
La presente invención proporciona un pienso para peces de piel color rosado-rojiza procedentes de la acuicultura para asemejar dichos peces, en la coloración de la piel y en la apariencia corporal, a los peces de la misma especie obtenidos del mar directamente mediante pesca extractiva.

Un aspecto de la presente invención se refiere a proporcionar un nuevo pienso para peces de piel color rosado-rojiza procedentes de la acuicultura, que comprende lípidos fisiológicamente aceptables y una sustancia fisiológicamente aceptable de astaxantina esterificada.

Otro aspecto de la invención se refiere al uso. Un uso particular sería aquel en donde los peces son bocinegros (Pagrus pagrus) y de besugo (Pagellus bogaraveo).

UTILIZACION DEL ALGA ISOCHRYSIS GALBANA EN ACUICULTURA Y PARA OBTENCION DE ACIDOS GRASOS POLIINSATURADOS

Número de publicación:
ES2088366 A1 (01.08.1996)
También publicado como:
ES2088366 B1 (01.03.1997)
Solicitante:
UNIVERSIDAD DE ALMERIA (ES)

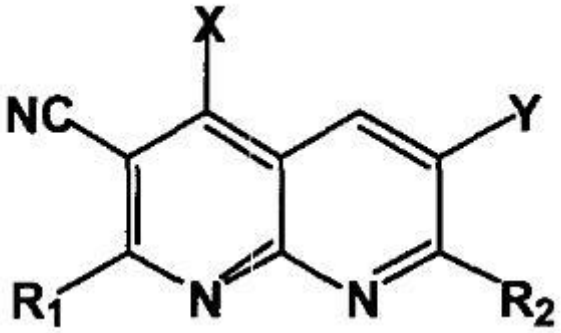
CIP: *A23K50/80 (2016.01) C12N1/12 (2006.01) C12P7/64 (2006.01)*

Resumen:
Microalga marina y su empleo en acuicultura y en la obtencion de acidos grasos poliinsaturados. Una cepa de la microalga marina isochrysis galbana, depositada en la ccap con el numero de deposito ccap 927/15 es capaz de producir elevadas cantidades de acidos grasos poliinsaturados, especialmente de acido eicosapentaenoico (epa) y de acido docosahexaenoico (dha). La cepa microalgal crece adecuadamente a una temperatura de 18 c a 25 c, en un ph de 7 a 9,5, preferentemente a un ph de 7,65 a 8,00. La cepa microalgal, cultivada a 20 c en un fermentador de 5 litros agitado por paletas y con iluminacion continua, produce epa en una cantidad de, al menos, 39,5 mg por gramo de materia seca. Esta cepa es adecuada para su empleo en acuicultura (alimentacion de larvas de peces y moluscos) y en la obtencion de epa y/o de un aceite rico en epa y en dha necesarios para la nutricion y salud humanas.

NAFTIRIDINAS CON ESTRUCTURA GENERAL I COMO ANTIPROTOZOARIOS PARA ACUICULTURA Y PROCEDIMIENTO DE PREPARACION.

Número de publicación:
ES2208093 A1 (01.06.2004)
Solicitante:
UNIVERSIDADE DE SANTIAGO DE COMPOSTELA (ES)
CIP: *A61K31/4375 (2006.01) A61K31/519 (2006.01) A61K31/53 (2006.01) A61P33/02 (2006.01) C07D471/04 (2006.01) C07D495/14 (2006.01)*

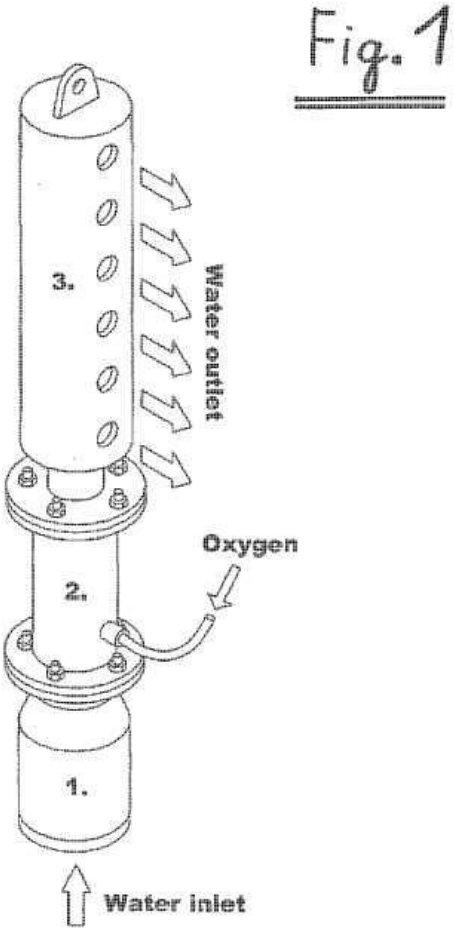
Resumen:
La presente invención se refiere al procedimiento de preparación de 1,8-naftiridinas de fórmula general I, diferentemente sustituidas en las posiciones 2, 3, 4, 6 y 7, y a sus aplicaciones en acuicultura para el tratamiento de la scuticociliatosis en moluscos, crustáceos y peces.



OXIGENACIÓN EN ACUICULTURA

Número de publicación:
ES2570305 T3 (17.05.2016)
También publicado como:
EP2198704 A1 (23.06.2010)
EP2198704 B1 (17.02.2016)
Solicitante:
LINDE AG (100.0%) (DE)
CIP: *A01K63/04 (2006.01)*

Resumen:
Dispositivo de acuicultura para suministrar gas a agua en jaulas, depósitos o estanques marinos, que comprende una bomba (1) y un disolvedor (2) para contactar el gas con el agua, y una salida de agua (3), en donde la bomba (1) es una bomba sumergida (1) que succiona directamente agua de la jaula, estanque o depósito, y en donde se establece una conexión directa de la bomba (1) y el disolvedor (2) para crear una unidad sumergible, caracterizado por que el gas es oxígeno presurizado o aire presurizado enriquecido en oxígeno, por que el disolvedor (2) es un disolvedor venturi (2), por que la bomba (1) y el disolvedor (2) están combinados en un alojamiento sellado y por que el dispositivo comprende un gancho o cáncamo u otra construcción mecánica, fija o ajustable, para colgar el dispositivo.



11. Anexo III. Fichas de proyectos de I+D

Acrónimo:	DEVOTES
Título:	DEVelopment Of innovative Tools for understanding marine biodiversity and assessing good Environmental Status.
Financiado por:	FP7-ENVIRONMENT
Topic:	ENV.2012.6.2-3 - Innovative Tools for Understanding and Assessing Good Environmental Status (GES) of Marine Waters ('The Ocean for Tomorrow')
Web:	http://www.devotes-project.eu/
Resumen:	The objectives are to: (i) improve our understanding of human activities impacts (cumulative, synergistic, antagonistic) and variations due to climate change on marine biodiversity, using long-term series (pelagic and benthic). This objective will identify the barriers and bottlenecks (socio-economic and legislative) that prevent the GES being achieved (ii) test the indicators proposed by the EC, and develop new ones for assessment at species, habitats and ecosystems level, for the status classification of marine waters, integrating the indicators into a unified assessment of the biodiversity and the cost-effective implementation of the indicators (i.e. by defining monitoring and assessment strategies). This objective will allow for the adaptive management including (a) strategies & measures, (b) the role of industry and relevant stakeholders (including non-EU countries), and (c) provide an economic assessment of the consequences of the management practices proposed. It will build on the extensive work carried out by the Regional Seas Conventions (RSC) and Water Framework Directive, in which most of the partners have been involved (iii) develop/test/validate innovative integrative modelling tools to further strengthen our understanding of ecosystem and biodiversity changes (space & time); such tools can be used by statutory bodies, SMEs and marine research institutes to monitor biodiversity, applying both empirical and automatic data acquisition. This objective will demonstrate the utility of innovative monitoring systems capable of efficiently providing data on a range of parameters (including those from non-EU countries), used as indicators of GES, and for the integration of the information into a unique assessment The consortium has 23 partners, including 4 SMEs (close to 17% of the requested budget) and 2 non-EU partners (Ukraine & Saudi Arabia). Moreover, an Advisory Board (RSC & scientific international scientists) has been designed,to ensure a good relationship with stakeholders

Acrónimo:	EUROMARINE
Título:	Integration of European marine research networks of excellence - Euromarine
Financiado por:	FP7-ENVIRONMENT
Topic:	ENV.2010.2.2.1-3 - Coordination actions to support FP6 NoEs durable integration
Web:	http://www.euromarinenetwork.eu/
Resumen:	EuroMarine is a coordination action that seeks to develop and implement an agreed framework for the long-lasting and durable co-operation between research institutions that were partners in FP6 marine Networks of Excellence in order to achieve further integration of marine research in Europe. Particular areas for cooperation will be: research programming, joint development and use of data bases, training and mobility of researchers, joint programming and use of research infrastructures. The objective is to provide an agreed frame for strong institutional commitment to this durable collaboration. The ultimate aim will be the sustainable integration of marine research and a significant contribution to the structure of the ERA.

Acrónimo:	NeXOS
Título:	Next generation, Cost-effective, Compact, Multifunctional Web Enabled Ocean Sensor Systems Empowering Marine, Maritime and Fisheries Management
Financiado por:	FP7-ENVIRONMENT
Topic:	OCEAN 2013.2 - Innovative multifunctional sensors for in-situ monitoring of marine environment and related maritime activities
Web:	http://www.nexosproject.eu/
Resumen:	As stated by the marine research decision makers in Europe in the "Ostend Declaration" in 2010, a major challenge is to support the development of a truly integrated and sustainably funded European Ocean Observing System. This will be achieved with more long-term measurements of key parameters but is impaired by the costs and lack of reliability of ocean sensors in general. The NeXOS project aims to improve the temporal and spatial coverage, resolution and quality of marine observations through the development of cost-efficient innovative and interoperable in-situ sensors deployable from multiple platforms, and Web Services for key domains and applications. This will be achieved through the development of new, low-cost, compact and integrated sensors with multiple functionalities including the measurement of key parameters useful to a number of objectives, ranging from more precise monitoring and modelling of the marine environment to an improved assessment of fisheries. Seven new compact, cost-efficient sensors will be developed, based on optical and acoustics technologies, addressing a majority of descriptors identified by the Marine Strategy Framework Directive for Good Environmental Status. Two of the new sensors will specifically contribute to the Common Fisheries Policy with variables relevant for an Ecosystem Approach to Fisheries. All new sensors will respond to multiplatform integration, sensor and data interoperability, quality assurance and reliability requirements. These will be specified for each new sensor system. All new sensors will be calibrated, integrated on several

types of platforms, scientifically validated and demonstrated. One of the main objectives of NeXOS will finally be to enhance the competitiveness of European SMEs in the ocean sensor market. To this end, sensor requirements and specifications will be assessed at an early phase of the project for market penetration

Acrónimo:	**PERSEUS**
Título:	Policy-oriented marine Environmental Research in the Southern EUropean Seas
Financiado por:	FP7-ENVIRONMENT
Topic:	OCEAN.2011-3 - Assessing and predicting the combined effects of natural and human-made pressures in the Mediterranean and the Black Sea in view of their better governance
Web:	http://www.perseus-net.eu/site/content.php
Resumen:	The overall scientific objectives of PERSEUS are to identify the interacting patterns of natural and human-derived pressures on the Mediterranean and Black Seas, assess their impact on marine ecosystems and, using the objectives and principles of the Marine Strategy Framework Directive as a vehicle, to design an effective and innovative research governance framework based on sound scientific knowledge. Well-coordinated scientific research and socio-economic analysis will be applied at a wide-ranging scale, from basin to coastal. The new knowledge will advance our understanding on the selection and application of the appropriate descriptors and indicators of the MSFD. New tools will be developed in order to evaluate the current environmental status, by way of combining monitoring and modelling capabilities and existing observational systems will be upgraded and extended. Moreover, PERSEUS will develop a concept of an innovative, small research vessel, aiming to serve as a scientific survey tool, in very shallow areas, where the currently available research vessels are inadequate. In view of reaching Good Environmental Status (GES), a scenario-based framework of adaptive policies and management schemes will be developed. Scenarios of a suitable time frame and spatial scope will be used to explore interactions between projected anthropogenic and natural pressures. A feasible and realistic adaptation policy framework will be defined and ranked in relation to vulnerable marine sectors/groups/regions in order to design management schemes for marine governance. Finally, the project will promote the principles and objectives outlined in the MSFD across the SES. Leading research Institutes and SMEs from EU Member States, Associated States, Associated Candidate countries, non-EU Mediterranean and Black Sea countries, will join forces in a coordinated manner, in order to address common environmental pressures, and ultimately, take action in the challenge of achieving GES.

Acrónimo:	EURO-BASIN
Título:	European Union Basin-scale Analysis, Synthesis and Integration
Financiado por:	FP7-ENVIRONMENT
Topic:	ENV.2010.2.2.1-1 - North Atlantic Ocean and associated shelf-seas protection and management options – collaboration with US & Canada
Web:	http://www.euro-basin.eu/
Resumen:	EURO-BASIN is designed to advance our understanding on the variability, potential impacts, and feedbacks of global change and anthropogenic forcing on the structure, function and dynamics of the North Atlantic and associated shelf sea ecosystems as well as the key species influencing carbon sequestering and ecosystem functioning. The ultimate goal of the program is to further our capacity to manage these systems in a sustainable manner following the ecosystem approach. Given the scope and the international significance, EURO-BASIN is part of a multidisciplinary international effort linked with similar activities in the US and Canada. EURO-BASIN focuses on a number of key groups characterizing food web types, e.g. diatoms versus microbial loop players; key species copepods of the genus Calanus; pelagic fish, herring (Clupea harengus), mackerel (Scomber scombrus), blue whiting (Micromesistius poutassou) which represent some of the largest fish stocks on the planet; piscivorous pelagic bluefin tuna (Thunnus thynnus) and albacore (Thunnus alalunga) all of which serve to structure the ecosystem and thereby influence the flux of carbon from the euphotic zone via the biological carbon pump. In order to establish relationships between these key players, the project identifies and accesses relevant international databases and develops methods to integrate long term observations. These data will be used to perform retrospective analyses on ecosystem and key species/group dynamics, which are augmented by new data from laboratory experiments, mesocosm studies and field programs. These activities serve to advance modelling and predictive capacities based on an ensemble approach where modelling approaches such as size spectrum; mass balance; coupled NPZD; fisheries; and "end to end" models and as well as ecosystem indicators are combined to develop understanding of the past, present and future dynamics of North Atlantic and shelf sea ecosystems and their living marine resources.

Acrónimo:	AQUAMED
Título:	The future of research on aquaculture in the Mediterranean region
Financiado por:	FP7-KBBE
Topic:	KBBE-2009-1-4-11 - Consolidate alliances with the Mediterranean in the field of aquaculture - Mandatory ICPC (Mediterranean Partner Countries)
Web:	http://www.aquamedproject.net/
Resumen:	The fast development of the Mediterranean aquaculture (freshwater, marine) is confronted to a set of difficulties e.g. inadequate production systems and competitiveness, interaction and space competition with other users and the need for a proper

	integration in the coastal zones, possible negative impact on the environment and negative image of the product quality. Aquaculture development in the Mediterranean countries is contrasted in terms of importance of the sector, domestic market demand, typology of the industry, and research and development structures and capacities. Consequently, a strategy for a knowledge-based development of the activity has to be implemented using a flexible and concerted approach. To deliver practical results, the AQUAMED project will be based on a four step process consisting in (1) mapping and setting a database of all relevant information (about policies, research and socio-economy) in each partner country, (2) identifying common situations and constraints between countries, (3) grouping countries confronted to similar driving forces in order to foster information exchanges and formulate more focussed science based recommendations and (4) setting up of a multi-stakeholder platform to promote a research organisation and an revolving implementation plan aiming at the sustainable development of aquaculture. The platform will be organised to be self-sustainable after the end of the project. It will be instrumental to rationalising research programming in order to avoid duplication, fragmentation and dispersion of research efforts, and to stimulate a long-term cooperation and coordination among policy makers, aquaculture industry and RTD performers in the Region. The Project consortium, covering most of the situations of the aquaculture sector met in Mediterranean, will put the emphasis on the participatory approach, the dissemination of the outcomes of the AQUAMED activities and the sustainability the multi-stakeholder platform.

Acrónimo:	**COFASP**
Título:	Strengthening cooperation in European research on sustainable exploitation of marine resources in the seafood chains- ERANET
Financiado por:	FP7-KBBE
Topic:	KBBE.2012.1.2-13 - Strengthening cooperation in European research on sustainable exploitation of marine resources in the seafood chains
Web:	http://www.cofasp.eu/
Resumen:	Research and innovation are central elements in the Europe 2020 Strategy and it is recognised that bioeconomy is an important element of the Strategy. DG RTD has issued a European Strategy "Innovating for sustainable growth: a bioeconomy for Europe" paving the way to a more innovative, resource efficient and competitive society that reconciles food security with the sustainable use of renewable resources, while ensuring environmental protection. COFASP will directly address actions envisaged within fisheries, aquaculture and seafood: 1) to enhance scientific knowledge and innovation reinforcing advice on fisheries management supporting decision making and strengthening an ecosystem-based fisheries management as central principle of the revised Common Fisheries Policy; 2) to implement the EU Strategy for the Sustainable Development of Aquaculture through development of strategic guidelines and implementation of national strategic aquaculture plans; and 3) to

	promote consumption of safe, nutritious and healthy European seafood and ensure traceability of seafood from net and cage to plate. Based on the earlier ERA-NET MariFish and the running ERA-NET SEAS-ERA, focusing on capture fisheries, aquaculture and seafood processing including distribution to consumers the objectives of COFASP are: 1. To lay the basis for exploitation according to the precautionary principles and to enhance innovation in and competitiveness of the primary sectors fisheries and aquaculture as well as subsequent seafood processing and distribution to the consumer 2. To define the science, information and data necessary to underpin the revision of the CFP and to ensure its successful implementation by designing complementary national research programmes and outlining monitoring and information/data sharing systems needed.
Acrónimo:	**MARINEBIOTECH**
Título:	CSA (Coordinating) in Marine Biotechnology
Financiado por:	FP7-KBBE
Topic:	KBBE.2011.3.2-01 - Marine biotechnology ERA-NET preparatory action
Web:	http://www.marinebiotech.eu/
Resumen:	"Marine biotechnology has the potential to provide a major contribution towards addressing some of the most pressing societal challenges including environmental degradation, human health and delivering sustainable supplies of food and energy. The main goal of the CSA will be to prepare the foundation for a potential ERA-NET in the area of Marine Biotechnology which will require: a) Gaining better understanding of the Marine Biotechnology landscape in Europe and beyond. To this end the consortium envisages carrying out an analysis of the current landscape (research effort, infrastructures, stakeholders, strategies and programmes, gaps and barriers to cooperation). b) Mobilisation of key stakeholders: extending the partnership of funding agencies and European Stakeholders. To this end the consortium envisages pro-active engagement with relevant and potentially interested funding agencies and stakeholders through development of appropriate fora, the organisation of information sessions, workshops and other project activities. c) Sketching the contours of future cooperation between funding agencies in the area of Marine Biotechnology. To this end the consortium envisages workshops involving the extended network of funding agencies and representative governmental organisations to set the stage for the set-up of appropriate cooperation tools to develop joint programmes and pool resources for collaborative research on a European scale. d) Managing information relevant to marine biotechnology research, technology development and innovation, and making this available via a dedicated web-site (including Wiki pages), newsletters, reports and briefing documents."

Acrónimo:	MG4U
Título:	Marine Genomics for Users
Financiado por:	FP7-KBBE
Topic:	KBBE.2010.3.2-02 - Learning from research projects: specific dissemination action to potential users in marine genomics - Call: FP7-KBBE-2010-4
Web:	http://www.mg4u.eu/
Resumen:	Marine waters provide resources and services estimated at 60% of the total economic value of the biosphere. The application of cutting-edge genomic approaches has generated significant new understanding the marine environment. Rapid progress will continue given the fast rate of technological development in this field. Methods and information are sufficiently mature for direct application to achieve a more competitive European economy, and the generation of knowledge economies in the marine sector. Applications include improving the efficiency of characterisation and mining of marine diversity for biotechnology products and processes that will contribute to the welfare of mankind in a sustainable and environmentally compatible manner. Marine genomics knowledge has enormous potential to assist organisations involved in governance and sustainable management of the marine environment and its resources. However, the direct utility of marine genomics in developing commercial advantage, and in general problem solving is not understood by many decision makers in government and industry. A large amount of valuable marine genomics knowledge is inaccessible to users or exists in non-user-friendly contexts. Marine Genomics 4 Users (MG4U) responds to the specific call "Learning from research projects: specific dissemination to potential users in marine genomics" designed to address this critical bottleneck. The call was generated since it is crucial that putative end-users are aware of both the potential of genomics approaches and the state-of-the-art developments that have taken place in recent EU and other research programmes for genomics to be exploited effectively end users. MG4U brings together a project consortium containing both scientific excellence and knowledge management specialists to design an innovative and realisable project that can have a measurable impact on the current situation and become a best practice example of effective knowledge transfer.

Acrónimo:	VECTORS
Título:	Vectors of Change in Oceans and Seas Marine Life, Impact on Economic Sectors
Financiado por:	FP7-KBBE
Topic:	Ocean.2010-2 - Vectors of changes in marine life, impact on economic sectors
Web:	http://www.marine-vectors.eu/
Resumen:	Marine life makes a substantial contribution to the economy and society of Europe. VECTORS will elucidate the drivers, pressures and vectors that cause change in marine life, the mechanisms by which they do so, the impacts that they have on ecosystem structures and functioning, and on the economics of associated marine sectors

and society. VECTORS will particularly focus on causes and consequences of invasive alien species, outbreak forming species, and changes in fish distribution and productivity. New and existing knowledge and insight will be synthesised and integrated to project changes in marine life, ecosystems and economies under future scenarios for adaptation and mitigation in the light of new technologies, fishing strategies and policy needs. VECTORS will evaluate current forms and mechanisms of marine governance in relation to the vectors of change. Based on its findings, VECTORS will provide solutions and tools for relevant stakeholders and policymakers, to be available for use during the lifetime of the project.

The project will address a complex array of interests comprising areas of concern for marine life, biodiversity, sectoral interests, regional seas, and academic disciplines as well as the interests of stakeholders. VECTORS will ensure that the links and interactions between all these areas of interest are explored, explained, modelled and communicated effectively to the relevant stakeholders. The VECTORS consortium is extremely experienced and genuinely multidisciplinary. It includes a mixture of natural scientists with knowledge of socio-economic aspects, and social scientists (environmental economists, policy and governance analysts and environmental law specialists) with interests in natural system functioning. VECTORS is therefore fully equipped to deliver the integrated interdisciplinary research required to achieve its objectives with maximal impact in the arenas of science, policy, management and society.

Acrónimo:	**ECOAQUA**
Título:	Research and Technology to enhance excellence in Aquaculture development under an Ecosystem approach
Financiado por:	FP7-REGPOT
Topic:	ERACHAIRS-2013-1 - Any research topic covered by the EU FP7
Web:	http://ecoaqua.ulpgc.es/
Resumen:	The main objective of EcoAqua is to integrate outstanding researchers in the Universidad de Las Palmas de Gran Canaria (ULPGC) to foster research excellence in Sustainable Aquaculture under a Ecosystem Approach. The newly hired ERA Chair research team will contribute to develop and strengthen the S&T research potential and capacities of ULPGC, underpinning a better integration into the ERA. After the 5 years implementation of EcoAqua, the ULPGC will push up the boundaries of its extant research lines, have an enhanced research capacities on aquaculture and its environmental interactions, through its University Research Institute in Sustainable Aquaculture and Marine Conservation, as well as play an active role in the development of the European Blue Economy, contributing to the Outermost Regional Sustainable Development. The ERA Chair, the associated research personnel and the staff of the ULPGC Research Groups in Aquaculture and in Biodiversity and Conservation will secure new additional research equipments and start new research studies, such as marine spatial planning and site

selection, increase animal performance during life-cyle, including egg and larval quality, better fish health and welfare, new aquaculture species under climate change scenarios, genetic improvement of productive, health and animal welfare traits, fundamental knowledge to understand the interactions between farmed and wild stocks, including wildlife, etc., all of them related to a better integration of Aquaculture and the Environment, taking into consideration the fragile marine ecosystem of the Outermost Regions, such the Canary Islands. In parallel, these outstanding scientists will build up a network of concerned partners inside the ERA (including the Outermost Regions, ORs) as well as other International partners, such as the Marine Programme of IUCN, to consolidate excellence research on diverse topics, such as sustainable feeds and ingredients, IMTA, marine protected areas and aquaculture production, use and develop best practices to optimize prevention methods, stock enhancements, manage and transfer aquaculture/conservation knowledge to stakeholders, etc., related to the sustainable developmente of the aquaculture sector in european waters.
The EcoAqua will conduct an annual Summer Course on "Ecosystems-based Approach for the Sustainable Development of Aquaculture" to train and exchange information among ERA members (including ORs and Overseas Countries and Territories – OCTs) on current issues dealing with marine spatial planning, ecosystem interactions and aquaculture development in coastal areas. In the second year, EcoAqua will organize an International Workshop to provide the discussion forum for the application of an Ecosystem-based approach in ORs and OCTs as well as an International Conference on "Challenges in the Environmental Management of Coastal and Marine Areas". The third year, an International Conference on "Marine Spatial Planning, Sustainable Growth and Biodiversity Conservation in Island Systems" will be organized with the participation of relevant actors from EU (such as DG Mare/DG RTD) and elsewhere (e.g. FAO, UN Barbados Programme of Action, IUCN, …). Another networking activity of EcoAqua will be the Sustainable Aquaculture Technological Platform and the Aquaculture Cluster within the ULPGC, that will promote knowledge transfer in marine areas, strategic for economic development of the Canary Islands and coastal areas of the ORs and other territories of Europe. The Sustainable Aquaculture Technological Platform (with a steering committee) wil provide applied results for use by researchers and coastal stakeholders including decision makers, SME, and NGOs, to ensure the sustainable management of aquaculture in ORs, taking into consideration new funding schemes such as Horizon 2020, ICP and other Structural Funds.

Acrónimo:	**EMBRC**
Título:	European Marine Biological Resource Centre preparatory phase
Financiado por:	FP7-INFRASTRUCTURES
Topic:	INFRA-2010-2.2.5 - EMBRC (European marine biological resource centre).
Web:	http://www.embrc.eu/

Resumen:	The Preparatory Phase for a pan-European MARINE BIOLOGICAL RESOURCE CENTRE(EMBRC) research Infrastructure. This application focuses on the technical, legal, governance, and financial issues to prepare a memorandum of understanding to begin to construct EMBRC. It will build on existing Marine Biological Institutes and Research Centres which will be complemented with innovative components and properly embedded into European scientific, ethical, legal and societal frameworks. The preparative phase of EMBRC will provide the proof of concepts for a key resource to increase excellence and efficacy in Marine Biological Research and secure competitiveness of European research and industry in a global context. This distributed pan-European infrastructure will provide access to model marine organisms and related genomic resources. It will promote access for both research and training. The main costal marine laboratories will be embedded within this RI to provide access to model marine organisms and their ecosystems together with modern technology and 'omic' platforms.

Acrónimo:	**MERMAID**
Título:	Innovative Multi-purpose off-shore platforms: planning, Design and operation
Financiado por:	FP7-TRANSPORT
Topic:	OCEAN.2011-1 - Multi-use offshore platforms
Web:	http://www.vliz.be/projects/mermaidproject/
Resumen:	"European oceans will be subject to massive development of marine infrastructure in the near future. The most obvious is the energy facilities e.g. offshore wind farms, exploitation of wave energy, expansion of electricity connections, and also further development and implementation of marine aquaculture. This will also lead to an increased need for marine infrastructure to support installation and the on-going operation of the facilities. However both economical costs and environmental impact have to be reduced in order to increase the feasibility of the use of ocean space. Marine structures for offshore wind farms and aquaculture have to be installed at various sites and on much larger scale than earlier implementation of offshore structures in order to fulfil EU strategies (1) for reduction of fossil-based energy and (2) to become a major player in sustainable aquaculture. However the feasibility is much more sensitive to the costs of structures and the installation of the structures than for instance Oil & Gas facilities. Novel innovative design concepts should address different physical conditions in order to make the best use of the ocean space. Going from deep water (north of Spain) to shallow water with high morphological activity (the Wadden sea) and further to inner waters like the inner Danish/Baltic areas and the Adriatic sea changes the focus from a strong physical aspect to environmental impact. This will make it possible to develop, test and integrate different technologies but also to address site specific challenges. Both for offshore renewables and for aquaculture a substantial part of the costs is variable cost related to operations and maintenance of the plants. It is obvious that optimization of the use of ocean

space for different purposes might benefit from shared resources such staff allocation, transportation of staff and material from and to the platforms, use of forecasting systems, ships etc."

Acrónimo:	OPEC
Título:	OPerational ECology: Ecosystem forecast products to enhance marine GMES applications
Financiado por:	FP7-SPACE
Topic:	SPA.2011.1.5-03 - R&D to enhance future GMES applications in the Marine and Atmosphere areas
Web:	http://marine-opec.eu/
Resumen:	OPEC will undertake research and development to develop Operational Ecology to augment the capabilities of the GMES Marine Service. Using the Marine Service as a framework, OPEC will OPEC will contribute 'to the establishment of innovative new GMES products or applications by' establishing the infrastructure for the performance of ecology in the European Regional Seas by implementing a prototype regional ecological Marine Forecast System in 4 European Regions (NE Atlantic Baltic, Mediterranean and Black Seas, which include hydrodynamics, lower (plankton) and higher trophic (e.g. fish) and biological data assimilation. OPEC will deliver 'new products' in terms of rapid environmental assessments as well as hindcasts for environmental management by providing regular 'geo-spatially referenced' error quantified information products (ECV's and indicators of GES) for European Coastal Seas in both lower and higher trophic levels. By assessing the potential spatial and temporal scales of predictability of seasonal forecast appropriate to both lower and higher trophic levels OPEC will also lay the foundations for the next generation of operational ecological products. In doing so OPEC will provide high quality 3D ecosystem indicators covering a range of temporal and spatial scale appropriate for different policy needs as new service aimed at supporting policy, environmental management and other downstream services by providing error quantified hindcast estimates of the state of the environment in the recent past systems. OPEC will contribute directly to policy requirements such as the MSFD, CFP, the monitoring of climate change and to the assessment of mitigation and adaptation policies. Through engagement with SME's, OPEC will implement new water quality related data products and delivery systems for implementation in downstream services. In addition OPEC will define and deliver the S&T Roadmap and make recommendations for future data requirements for Operational Ecology.

Acrónimo:	REMCAP
Título:	Resource Efficient Maritime Capacity
Financiado por:	FP7-REGIONS
Topic:	REGIONS-2012-2013-1 - Transnational cooperation between regional research-driven clusters
Web:	http://www.remcap.eu/

Resumen:	The global maritime market is on a strong growth trajectory, and this project aims to harness that growth to create economic and employment benefits for Europe. On the one hand, growth is driven by commercial megatrends such as demand for marine/offshore renewable energy, fish products and emerging potential for 'blue biotech' products; on the other hand, there is high demand for efficient use and management of the ocean resource, as described in the EU Integrated Maritime Strategy. Increasing Europe's innovation capacity in maritime resource efficiency will underpin successful exploitation of these growth opportunities. Traditionally, the maritime industries have been slow to explore how demands for resource efficiency would impact on them. Fish stock depletion and rising fuel costs have, of course, risen quickly up the political and commercial agendas, and shipping companies as well as builders and engine manufacturers have invested in improving fuel efficiency. However, the wider needs for maritime resource efficiency are posing challenges which in many cases lack viable solutions. Emerging marine activities (for example in exploiting marine renewable energy) are presenting new opportunities for innovation, but are also highlighting areas where further improvements in resource efficiency need to be achieved. European member states contain a number of Regional Research Driven Clusters (RRDCs) which are active in the fields of maritime development and marine & coastal resource management. This project will add significant value to this existing cluster infrastructure, via three main approaches that will support their long-term development and sustainability: • Facilitating interaction and knowledge exchange between RRDCs each focused on its world-class strengths (Smart Specialisation); • Raising the effectiveness of RRDCs by strengthening shared approaches to innovation support • Using RRDC activities to stimulate involvement of supply chain companies

Acrónimo:	**SFS**
Título:	Sea For Society
Financiado por:	FP7-SIS
Topic:	SiS.2011.1.0-1 - Mobilisation and Mutual Learning (MML) Action Plans on societal challenges
Web:	http://seaforsociety.eu/np4/home.html
Resumen:	Sea for Society (SFS) has brought together a multidisciplinary partnership of 21 partners from 11 countries representing marine research institutes, funding agencies, science museums and aquaria, CSO's, NGO's, higher education institutes, business networks, to implement a MMLAP to address Specific Challenge 3: Marine Resources, inland activities & sustainable development. SFS will mobilise researchers, marine and terrestrial actors, CSO's and individual citizens and youth in a mutual learning, open dialogue and joint action process to consider key questions, extract cross-cutting issues and propose challenge-driven solutions.

Ten 'geographical forums' across Europe will involve economic stakeholders, environmental organisations, local authorities, the public-at-large, and youth in a participatory process to identify challenges and barriers of coastal and marine ecosystem services vis-à-vis societal needs. While these actors may have very different and even conflicting perspectives, collective reasoning sessions will lead to co-authored recommendations for facing up to the challenge. Key questions will be considered in the context of 'ocean ecosystem services' with an emphasis on relating complex biodiversity to 'lived experiences' in order to bridge how everyday human behaviour interplays with science. The open dialogue process will lead to further empowerment of stakeholders and citizens to take action at a local, national and European level to tackle marine societal challenges.
Public Engagement in Research (PER) as it relates to European maritime policy is at the core of the process. Sustaining the MMLAP will be important in designing the SFS mechanisms: for partnership, interaction, PER, empowerment and redressing marine societal challenges. Face-to-face and web-based open dialogue will enrich the new concept of the "Blue Society" and improve the governance of research related to the oceans and seas.

Acrónimo:	**CACHE**
Título:	CAlcium in a CHanging Environment
Financiado por:	FP7-PEOPLE
Topic:	FP7-PEOPLE-2013-ITN - Marie-Curie Action: "Initial Training Networks"
Web:	http://cordis.europa.eu/project/rcn/109120_en.html
Resumen:	Anthropogenic driven climate change is a global problem that will increasingly affect our world and it is essential that we train our future scientists in multidisciplinary approaches to enable them to tackle such complex problems. This ITN examines environmental calcium mobilisation and deposition in marine molluscs, species that have been highlighted as being particularly at risk under future climate change scenarios due to the acidification and warming of the World's oceans. However, surprisingly little is known about how these animals regulate calcium to produce a shell, how these processes might be affected when the environmental conditions change and what the consequences are at the population level. This lack of knowledge significantly impacts on our abilities to accurately predict future biodiversity and the consequences for the commercial aquaculture industry. We aim to remedy this knowledge deficit with this ITN. We will take an in-depth comparative approach, using four of the EU's most important commercially exploited molluscan species as model organisms and examine natural variation in shell production in combination with experimental manipulations to quantify adaptive potential and identify novel genes/proteins that underpin responses to environmental change. By embedding our projects in natural population surveys, we will gain an unprecedented understanding of the level of phenotypic plasticity that operates in bivalve shell

production: an essential prerequisite for understanding their resilience to environmental perturbation. The resulting data will also be integrated into models aimed at predicting future aquaculture scenarios and will lead into efforts at biomimic exploitation for sustainable building materials, providing a genuinely innovative inter-sectoral approach, which will directly contribute to the EU Blue Economy and EU aspirations for sustainable opportunities via "Blue Growth".

Acrónimo:	**CERES**
Título:	Climate change and European aquatic RESources
Financiado por:	H2020-EU.3.2. - SOCIETAL CHALLENGES - Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy
Topic:	BG-02-2015 - Forecasting and anticipating effects of climate change on fisheries and aquaculture
Web:	https://ceresproject.eu/
Resumen:	CERES advances a cause-and-effect understanding of how future climate change will influence Europe's most important fish and shellfish populations, their habitats, and the economic activities dependent on these species. CERES will involve and closely cooperate with industry and policy stakeholders to define policy, environment, social, technological, law and environmental climate change scenarios to be tested. This four-year project will: 1. Provide regionally relevant short-, medium- and long-term future, high resolution projections of key environmental variables for European marine and freshwater ecosystems; 2. Integrate the resulting knowledge on changes in productivity, biology and ecology of wild and cultured animals (including key indirect / food web interactions), and 'scale up' to consequences for shellfish and fish populations, assemblages as well as their ecosystems and economic sectors; 3. Utilize innovative risk-assessment methodologies that encompass drivers of change, threats to fishery and aquaculture resources, expert knowledge, barriers to adaptation and likely consequences if mitigation measures are not put in place; 4. Anticipate responses and assist in the adaptation of aquatic food production industries to underlying biophysical changes, including developing new operating procedures, early warning methods, infrastructures, location choice, and markets; 5. Create short-, medium- and long-term projections tools for the industry fisheries as well as policy makers to more effectively promote blue growth of aquaculture and fisheries in different regions; 6. Consider market-level responses to changes (both positive and negative) in commodity availability as a result of climate change; 7. Formulate viable autonomous adaptation strategies within the industries and for policy to circumvent/prevent perceived risks or to access future opportunities; 8. Effectively communicate these findings and tools to potential end-users and relevant stakeholders.

Acrónimo:	MARIBE
Título:	Marine Investment for the Blue Economy
Financiado por:	H2020-EU.3.2. - SOCIETAL CHALLENGES - Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy
Topic:	BG-05-2014 - Preparing for the future innovative offshore economy
Web:	https://maribe.eu/
Resumen:	MARIBE is a Horizon 2020 project that aims to unlock the potential of multi-use of space in the offshore economy (also referred to as Blue Economy). This forms part of the long-term Blue Growth (BG) strategy to support sustainable growth in the marine and maritime sectors as a whole; something which is at the heart of the Integrated Maritime Policy, the EU Innovation Union, and the Europe 2020 strategy for smart, sustainable growth. Within the Blue Economy, there are new and emerging sectors comprising technologies that are early stage and novel. These are referred to as Blue Growth sectors and they have developed independently for the most part without pursuing cooperation opportunities with other sectors. MARIBE investigates cooperation opportunities (partnerships, joint ventures etc.) for companies within the four key BG sectors in order to develop these companies and their sectors and to promote the multi-use of space in the offshore economy. The sectors are Marine Renewable Energy, Aquaculture, Marine Biotechnology and Seabed Mining. MARIBE links and cross-cuts with the Transatlantic Ocean Research Alliance and the Galway Statement by reviewing the three European basins (Atlantic, Mediterranean, and Baltic) as well as the Caribbean Basin. The project begins with an assessment of the current Blue Growth economy. A socio-economic study of the various Blue Growth sectors will be undertaken. Existing business models will be mapped according to best practice methodology, cognisant of their value chains. The technical and non-technical challenges of the business will be identified and proposals made for their mitigation. Key FP7 projects that focus on multi-use of space and multi-use platforms will also be assessed. The consortium will draw on this study to identify key opportunities for synergistic collaboration. It will examine 24 sectoral combinations in total and 12 of those with high potential will be developed further. To do this, MARIBE will work with selected EU-funded consortia (particularly those involved in the Oceans of Tomorrow projects) to develop cross-sectoral projects. It will also work with a range of academic and industry partners to develop projects within 5 additional sectoral combinations that present potential for synergistic collaboration. The MARIBE partners will take a hands-on approach to developing collaboration, brokering partnerships where necessary and assisting with the creation of the business plans and implementation plans required to secure investment for these 12 projects.

Acrónimo:	OCEANFISH
Título:	Open Ocean Fish farms
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2. - SOCIETAL CHALLENGES - Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy //
Topic:	BG-12-2015 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/198394_en.html
Resumen:	Gili Ocean Technologies aims to become the leading off-shore (Open Ocean) aquaculture company. This will be achieved through the operation of fish farms as well as through the delivery of turn-key projects for other fish farmers based on our extensive off-shore fish farming expertise and advanced technologies. Aquaculture is rapidly growing. The FAO estimates that aquaculture will grow to over 62% of the worldwide supply of fish protein by 2030.However, the currently near-shore aquaculture faces significant problems e.g. relatively slow growth rate for the fish, high death rates, low stocking densities in the cages and intensive use of antibiotics in order to fight diseases. In addition, significant pollution in the coastal areas is very common as there is hardly any dispersing of organic matter in the ocean. This impacts the local ecology as well as the industry itself. OCEANFISH aims to finalize the development and start the commercialisation of the various technologies necessary to transform Gili's existing Subflex Classic systems to advanced and sophisticated open ocean systems improving growth rates, reducing ecological impact and providing the aquaculture industry with the tools necessary to meet the market demands. This is a significant market opportunity. To capture this opportunity, the OCEANFISH project aims to 1) increase the cost-efficiency of the Subflex aquaculture platform, 2) enable real off-shore farming, 3) enable growth of additional fish species and 4) commercialize the technology. The OCEANFISH system is a flexible submerged system of cages. The original technology was developed with the Technion, Israel's leading technological university. OCEANFISH is an excellent example of how humans can take better advantage of oceans in a highly sustainable manner and at the same time solve significant ecological challenges.

Acrónimo:	PrimeFish
Título:	Developing Innovative Market Orientated Prediction Toolbox to Strengthen the Economic Sustainability and Competitiveness of European Seafood on Local and Global markets
Financiado por:	H2020-EU.3.2. - SOCIETAL CHALLENGES - Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy
Topic:	BG-10-2014 - Consolidating the economic sustainability and competitiveness of European fisheries and aquaculture sectors to reap the potential of seafood markets
Web:	http://www.primefish.eu/
Resumen:	The overall aim of PrimeFish is to improve the economic sustainability of European fisheries and aquaculture sectors. PrimeFish will gather data from individual production companies, industry and sales organisations, consumers and public sources. The data will be related to the competitiveness and economic performance of companies in the sector; this includes data on price development, supply chain relations, markets, consumer behaviour and successful product innovation. The large industry reference group will facilitate access to data on specific case studies. A data repository will be created, and PrimeFish will join the H2020 Open Research Data Pilot to ensure future open access to the data. The effectiveness of demand stimulation through health, label and certification claims will be evaluated and compared with actual consumer behaviour. PrimeFish will assess the non-market value associated with aquaculture and captured fisheries as well as the effectiveness of regulatory systems and thereby provide the basis for improved societal decision making in the future. The collected data will be used to verify models and develop prediction algorithms that will be implemented into a computerized decision support system (PrimeDSS). The PrimeDSS, together with the underlying data, models, algorithms, assumptions and accompanying user instructions will form the PrimeFish Decision Support Framework (PrimeDSF). The lead users, typically fishermen, aquaculture producers and production companies, will be able to use the PrimeDSF to improve understanding of the functioning of their markets and in setting strategic plans for future production and innovation which in turn will strengthen the long term viability of the European fisheries and aquaculture sectors. This will also benefit consumers, leading to more diversified European seafood products, enhanced added value, novel products and improved information on origin, certification and health claims.

Acrónimo:	TAPAS
Título:	Tools for Assessment and Planning of Aquaculture Sustainability
Financiado por:	H2020-EU.3.2. - SOCIETAL CHALLENGES - Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy
Topic:	SFS-11b-2015 - Consolidating the environmental sustainability of European aquaculture
Web:	http://tapas-h2020.eu/

Resumen:	Aquaculture is one of five sectors in the EU's Blue Growth Strategy, aimed at harnessing untapped potential for food production and jobs whilst focusing on environmental sustainability. TAPAS addresses this challenge by supporting member states to establish a coherent and efficient regulatory framework aimed at sustainable growth. TAPAS will use a requirements analysis to evaluate existing regulatory and licensing frameworks across the EU, taking account of the range of production environments and specificities and emerging approaches such as offshore technologies, integrated multi-trophic aquaculture, and integration with other sectors. We will propose new, flexible approaches to open methods of coordination, working to unified, common standards. TAPAS will also evaluate existing tools for economic assessment of aquaculture sustainability affecting sectoral growth. TAPAS will critically evaluate the capabilities and verification level of existing ecosystem planning tools and will develop new approaches for evaluation of carrying capacities, environmental impact and future risk. TAPAS will improve existing and develop new models for far- and near-field environmental assessment providing better monitoring, observation, forecasting and early warning technologies. The innovative methodologies and components emerging from TAPAS will be integrated in an Aquaculture Sustainability Toolbox complemented by a decision support system to support the development and implementation of coastal and marine spatial planning enabling less costly, more transparent and more efficient licensing. TAPAS partners will collaborate with key industry regulators and certifiers through case studies to ensure the acceptability and utility of project approach and outcomes. Training, dissemination and outreach activities will specifically target improvement of the image of European aquaculture and uptake of outputs by regulators, while promoting an integrated sustainable strategy for development.

Acrónimo:	**Accordion Bioreactor**
Título:	An innovative high capacity Accordion bioreactor technology for high performance and low cost microalgae production
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2.3. - Unlocking the potential of aquatic living resources H2020-EU.3.2.5. - Cross-cutting marine and maritime research
Topic:	SMEInst-08-2016-2017 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/207132_en.html
Resumen:	Access to vital raw ingredients for food/feed production is an increasing challenge in several industries. Biopharmia is a Norwegian company focusing on cultivation of microalgae through its development of a proprietary bioreactor. Through years of expertise and collaborations with experts in the field of microalgae growth, Biopharmia have developed and patented the Accordion bioreactor, a proven and efficient platform for industrial scale production of high quality microalgae, at lower energy and decreased production cost, compared to other

solutions. This technology aims to strengthen Europe's position in the microalgae market, which is currently weak due to cheaper, low quality foreign competitors. The technology describes the unique wave configuration comprising the frame work of the bioreactor, which contributes to higher productivity and lower cost of production and investment when compared to competing technologies. The modular design of this closed system greatly minimises the risk of contamination and can be easily adapted to large scale production. Biopharmia need to undertake the proposed innovation project to develop and further test the Accordion technology with multiple algae strains. The company has a close collaboration with the University of Arizona (UA) and has demonstrated the efficiency and productivity of its bioreactors through extensive testing at UA. Biopharmia has supplied biomass to a number of entities in Norway with very good results. Biopharmia has Letters of Intent about supply of biomass to two Norwegian customers in different segments, food supplements and aquaculture. In 2012 the company raised €1 million in private venture capital from IFE Venture. Biopharmia intends to establish initial production using the Accordion technology for the clients the company have an LOI with before expanding production.

Acrónimo:	**BLUE IODINE**
Título:	Boost BLUE economy trough market uptake an innovative seaweed bioextract for IODINE fortification
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2. - SOCIETAL CHALLENGES - Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy
Topic:	BG-12-2014-1 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/196245_en.html
Resumen:	The main objective of the project is to produce in a cost effective way new high quality seaweed iodine products and become market leaders in this niche market. The expected revenue in 5 years will be 3,3 million euro and we expect to increase our staff in 20 people. Iodine deficiency is one of the three most common nutritional deficiencies and is spread all over the world and 40% of the world's population remains at risk for iodine deficiency. Seaweed is the most reliable source of natural iodine. However, seaweed creation is dominated by larger players, mainly from Asia. Our strategy is not to compete with them, but target for a niche market that is yet incipient - high quality seaweed creation for the development of natural protein products, rich in essential aminoacids and natural iodine. The seaweeds created in the fish aquaculture farms are autochthonous from our region and have a high iodine content and a high degree of stability. They are better than the products in the market (iodine composition 30% higher and vitamin C 300% higher than usually commercialized seaweed products) and with

	our already tested innovative biorefinary process we will be able to put the product in the market at a competitive price (10% to 30% lower).A nutritional analysis has been done. The biorefinary process has been developed for small production. This has now to be better defined in order to process a higher amount of products. UBQ is a high-tech company, and are specialized in the production of natural extracts obtained from marine seaweed. For the 1st stage project, the objectives are to study the: 1.1. Refinement of the nutritional and biochemistry analysis of the selected seaweed 1.2. Requirements for upscale the innovative biorefinary process for a higher production 2.1. Refinement of the Market analysis at EU and global level 2.2. Business Plan, including defining in detail the prices, commercialization strategy, possible partnership.

Acrónimo:	**BlueAquality**
Título:	Blue Aquality
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2.3. - Unlocking the potential of aquatic living resources H2020-EU.3.2.5. - Cross-cutting marine and maritime research
Topic:	SMEInst-08-2016-2017 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/207950_en.html
Resumen:	BlueAquality will improve EU aquaculture, making it more competitive and more effective by providing an "Industry-Wide-Computing" metasystem to help fish farmers, other aquaculturists, and all other players in the aquaculture-web (e.g. suppliers of feed, equipment, logistics, consultancy, veterinary-services and medicines, the processing industry, wholesalers and consumers; public authorities, universities, and NGO's). These constitute tens of thousands of SME's and many larger organisations. BlueAquality will provide added value at an affordable price, giving increased and more efficient production with reduced environmental impact, enhanced transparency, improved information flow to consumers, better adaptation to market trends, reduced administration burdens, improved information-exchange to/from authorities and other stakeholders. This Phase 1 feasibility study will determine the optimum market approach for success. This will include market assessment and appraisal of which partners should be included in phase 2 in order to achieve a meta-system with the best and broadest possible coverage, thus ensuring the best impact.

Acrónimo:	BMX-11
Título:	Providing Antifouling Additives for Marine Paints Inspired by Nature and Engineered for Industries
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2.3. - Unlocking the potential of aquatic living resources H2020-EU.3.2.5. - Cross-cutting marine and maritime research
Topic:	SMEInst-08-2016-2017 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/211134_en.html
Resumen:	Any object submerged in water is subject to fouling, such as boats, oil drilling platforms and aquaculture equipment. To prevent fouling, companies who own submerged assets use antifouling paints (i.e. the use of antifouling paints is estimated to prevent 25% of fuel consumption of the world fleet). However, 90% of existing antifouling paints are toxic and current solutions are not 100% effective. Plus, the most used antifouling additive – copper - is characterized by high price volatility. Biomimetx has recently discovered a unique bacterium that secretes high levels of molecules that can be used as natural antimicrobials and algaecides. This compound can be produced through an optimized fermentation process (Internationally patented by us) that ensures high yield. The outcome of the Phase 2 project will be the first marine antifouling paint containing a non-toxic antifoulant additive (BMX-11) on the market. BMX-11 is 100% biodegradable, cost effective and fully efficient against all elements of biofouling. We aim to address the global market of biocide additives for marine paints estimated in at least €2.8 billion in 2016. BMX-11 has the potential to be highly disruptive also because it allows the creation of non-toxic paints that can be certified for non-professional use. This means that BMX-11 can enable the DYI market of antifouling paints. Biomimetx was founded in 2013, and our current team of 9 professionals has been awarded 400k€ in Portuguese research grants and 1,8M€ in Venture Capital to pursue the market rollout of BMX-11 and co-finance the present Phase 2 project.

Acrónimo:	CryoPlankton
Título:	A replacement of the sub-optimal live feeds used at hatcheries today with a new cryopreserved live diet for the improved and efficient production of juveniles in marine aquaculture
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2. - SOCIETAL CHALLENGES - Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy
Topic:	BG-12-2014-1 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/194751_en.html

Resumen:	The most important innovation in marine fish aquaculture is the improvement of survival rate and development during the larval stage of the fish. Reasons are that the current nutritional quality of most common live food organisms (rotifers and Artemia nauplii) is inadequate leading to high mortality, deformations and sub-optimal growth during the larval phase of these fish species which limit the overall production. This project's primary objective is to cryopreserve targeted natural zooplankton harvested from the sea, which will be revived for the use as live feed organisms in marine aquaculture. The SME Planktonic has succeeded in cryopreserving marine crustacean nauplii in relatively large scale (entities of up to 200 ml), and to revive them as free swimming organisms (revival rate up to 90%). Because fish larvae are evolutionary adapted to graze on these plankton organisms, it is believed and also documented that it is an optimal diet with respect to nutritional value and performances on the fish growth and survival. Present cryopreservation protocols owned by Planktonic will be further optimized for large scale fish larvae cultivation of both current successful aquaculture species (sea bream and sea bass) and those with requirements of prey of high nutritive value and appropriate size in their early larval phase (e.g. bluefin tuna, long fin yellow tail and Ballan wrasse). Logistics systems for economically feasible shipping of the cryopreserved product within and outside the EU will be assessed, besides procedures for removing market barriers. The world-wide market of Artemia nauplii and rotifers is estimated to about 450 million €. Planktonic is aiming at 10% of this market, which will result in a turnover of 45 million €. Planktonic will in the proposed project perform a feasibility study with the focus of a business plan, potential partners to succeed with the commercialization and evaluate different technologies for up-scaling of the production.

Acrónimo:	**CryoPlankton2**
Título:	Cryopreservation of marine planktonic crustacean nauplii for innovative and cost-effective live feed diet in fish juvenile aquaculture
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2. - SOCIETAL CHALLENGES - Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy
Topic:	BG-12-2015 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/200101_en.html
Resumen:	The SME Planktonic has succeeded in cryopreserving marine crustacean nauplii (hereafter called CryoProduct) in large user-friendly entities, and to revive them as live individuals after thawing. The ease-of-use CryoProduct meets the nutritional requirements of fish larvae. A doubling in growth rate and a 25-30% shortening of the live feed period compared to a diet of the suboptimal live feed

diets commonly used at marine hatcheries have been demonstrated (large-scale industrial trial, TRL6). With a well-functioning feeding protocol to be developed in the project period, it is expected that performances of the fish larvae will be even better. It will be put effort on optimizing the cryopreservation protocols to achieve a CryoProduct with even better quality than today for improving the performances of fish juveniles. A bio-security evaluation will be performed, and a screening of microorganisms will be needed for the registration of the CryoProduct. To successfully launch the CryoProduct into the EU market, it will be of major importance to scale up the production, to establish efficient logistic systems, identify end-users needs and to provide a reliable commercialisation plan for the best possible market introduction. As the CryoProduct has outstanding performances compared to today's alternatives, we expect a market share of 50% of the live feed market on a longer term. This corresponds to a revenue of more than 100 million €. As the market grows 3-4% per year, the market size will double in about 20 years. It is a considerable aquaculture production in the EU. If the product meet the expectations, it will most probably be a major contribution to realize the production potential of marine fish in aquaculture in the EU. This will result in many thousand new jobs, and primarily in the Mediterranean region. The business innovation project fits well to the business strategy of Planktonic, and to the Horizon2020 SME-2 programme under the topic BG-12-2015.

Acrónimo:	**ENTOMICSBLUEGROWTH**
Título:	Investigating the commercial feasibility of a novel biological enhancement technology for creating a sustainable, high value, insect-derived protein supplement for the EU aquaculture market
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2.3. - Unlocking the potential of aquatic living resources H2020-EU.3.2.5. - Cross-cutting marine and maritime research
Topic:	SMEInst-08-2016-2017 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/210438_en.html
Resumen:	The FAO estimates that to we need to produce 70% more food by 2050 to sustain the world's growing population. Aquaculture is a promising source of nutrition and food security due to relatively low resource requirements, accessibility for operators in the developing world and an increasing global demand for quality protein. During the last three decades, world aquaculture production increased from 5 million to 63 million tons, and represents an increasingly large component of human protein consumption. However, intensive aquaculture of carnivorous fish species – like salmon and trout – requires large inputs of unsustainable feed ingredients like fishmeal from wild-caught forage fish as far away as Chile, due to its high protein and oil content. Thus, feed costs can

comprise up to 75% of an aquaculture operation's overall cost in the EU. In addition, intensive aquaculture continues to be plagued by the incidence of disease and lice infestation – exacerbated by stressful conditions such as overstocking and poor water quality, and requiring the industry to respond with harmful antibiotic and chemical interventions.

Entomics' innovative technology enables the production of novel insect-derived protein feed that is sustainably grown from waste substrates at low cost, and presents a viable substitute for fishmeal given similar protein and omega-3 oil profiles. More importantly, our patent-pending processing technology enhances this protein feed with key biological characteristics that promote enhanced growth and overall fish health. We currently produce this feed in a Pilot facility, and are conducting fish feeding trials to test efficacy in different species.

The purpose of this study is to investigate the commercial feasibility and technical scalability of our novel processing technology, with the aim of bringing this high-value, sustainable aquaculture feed to the European market.

Acrónimo:	**Fishtimator**
Título:	Continual Acoustic Based Multifunctional Cage Mounted Fish estimator Deigned To Reduce Feed Waste, Fish Mortality, and Predator and Fish Escape Control.
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2. - SOCIETAL CHALLENGES - Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy
Topic:	BG-12-2015-1 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/198011_en.html
Resumen:	The growing demand for sea food has resulted in the depletion of natural fisheries and it is estimated that 62% of the sea food will come from aquaculture farms by 2030. The profitable operation of aquaculture farms is being hindered by unbalanced and un-predictive fish feed amount, unreliable biomass estimation, fish escape and fish mortality. Fish feed alone represents 50% of the total operating costs of the fish pans and cages. Permanent and accurate estimation of fish size and weight is of significant importance in the fish farming industry for the provision of key data with which feeding, grading and harvesting operations are controlled. Ocean Tools Aquaculture (OTAQ) is an industry leader in providing predator control and acoustic technologies for the aquaculture industry. Our solution is to develop an acoustic based permanent in-cage biomass estimator system (FISHSTIMATOR) that will deal with the problems being faced by aquatic fish farmers. The solution is intended to reduce fish feed waste by 3-5% by giving recommended amount of feed that matches the number of fish

	and their growth rate. Fish mortality and escape due to predators, anomalies in the cage structure and thieves will be eliminated by close monitoring of the cage environment. FISHSTIMATOR will be sold to farmers at €26'000 per cage and leased for €13'000 per cage. With this pricing model we envisage to clinch to 16% of the global aquaculture monitoring market which is estimated to reach €5.24 billion at a compound annual growth rate of 5.24% by 2020 (3% of €175billion - global aquaculture market) and increase our revenue from €2.5M to €84M by 2022. In Phase 1 we will validate FISHSTIMATOR prototype, develop Intellectual Property strategy, and carry out a market study, search and recruit partner and draft a business plan in a period of 6 months. In Phase 2, we will finalise the design and operability of FISHSTIMATOR allowing us to match the requirements of the targeted customers.

Acrónimo:	**ICE2LAST**
Título:	Innovative stunning technology based on a natural anesthetizing agent in ice to improve animal welfare and extend shelf-life of farmed fish
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2.3. - Unlocking the potential of aquatic living resources H2020-EU.3.2.5. - Cross-cutting marine and maritime research
Topic:	SMEInst-08-2016-2017 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/205129_en.html
Resumen:	CUBI-PLAYA S.L. is a Spanish SME dedicated to ice manufacture, currently employing 39 people. We are specially targeted to the fish sector. We supply high quality ice to fisheries, aquaculture companies and fish processing factories, with the result of a close working relationship with main stakeholders. It is well known that stress situations adversely affect muscle quality, especially during the last period of fish life: slaughter. Traditional slaughtering process involves the death by asphyxia in ice or air, which exposes fish to substantial suffering over excessive periods of time. The distress suffered results in detriment of fish flesh quality and shelf-life, besides imposing avoidable suffering to fish. A pre-stunning phase is therefore recommended, to rapidly cause loss of consciousness and sensibility without pain. However, most of the slaughtering procedures used in fish farm conditions nowadays do not involve a stunning phase. In collaboration with experienced researchers, we have developed ICE2LAST, an integrated solution to speed up the stunning/sedation phase of farmed fish before slaughter, which results in a longer shelf-life and better flesh quality. Fish stunning is caused by an anesthetizing natural substance. When included into crush ice, it causes the complete stunning of the fish in less than 1 minute. By shortening the stunning process, fish flesh quality improves and its spoilage can be delayed more than 50%, compared to traditional slaughtering methods. ICE2LAST is a

cost-effective and easy to handle solution, whose implementation leads to enhance fish food quality, reduce fish losses and improves animal welfare.
EU is expected to increase its fish food domestic production, particularly through aquaculture promotion. With projections of a 4% annual growth in this sector, ICE2LAST can boost growth and employment in our company. Thanks to this new product we expect to employ 16 more people in Spain and overseas.

Acrónimo:	**IFASA**
Título:	Insects For a Sustainable Aquaculture
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2.3. - Unlocking the potential of aquatic living resources H2020-EU.3.2.5. - Cross-cutting marine and maritime research
Topic:	SMEInst-08-2016-2017 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/207144_en.html
Resumen:	Question: What is the main cost driver of aquaculture? Answer: Feed. As protein intake of farmed fish comes mainly from wild caught animals and transgenic soybean flours, feed cost accounts for up to 60% of sales. Overall, commercially available solutions are limited in quantity, nutritionally unsatisfactory, financially unbalanced and ecologically disastrous. Innovafeed is an ambitious start-up in the aquaculture industry, set to revolutionize how fish farmers and ingredient manufacturers apprehend feeding, by bringing economic and environmental sustainability to insect farming. IFASA's objective is to scale-up the innovative, sustainable, proprietary and cost-effective insect-based production technology the company has developed. It will allow the transformation of low-value agricultural by-products, into high quality nutrients for aquaculture, thereby answering the needs expressed by feed companies, fish and land farmers. This technology is based on Innovafeed's and its partners' long lasting expertise in optimizing an insect rearing process and obtaining a product answering fish nutritional needs, as embodied in a first lab-scale production unit able to produce small batches of insects. It also strongly benefits from the company's market proximity, as 85% of fish farmers already contacted have expressed a strong interest for the project and 12 asked to be supplied with some insect-based feed as soon as possible. During phase 1, Innovafeed will scale-up its farming unit by (a) optimizing the egg production and breeding systems, (b) pursuing regulatory and scientific lobbying initiatives, (c) refining its IP and business strategies, (d) testing the nutritional properties of its feed and (e) continuing on site tests to prepare for phase 2. The main deliverable will be an updated business plan enabling Innovafeed to seize this huge business opportunity. This feasibility study is an essential first step before large-scale industrial production.

Acrónimo:	MYSIS
Título:	A novel weaning diet to optimize performance of farmed shrimp larvae
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2.3. - Unlocking the potential of aquatic living resources H2020-EU.3.2.5. - Cross-cutting marine and maritime research
Topic:	SMEInst-08-2016-2017 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/208030_en.html
Resumen:	Shrimp are high-market value product with an increasing demand for global supply, currently representing 15 % of total globally traded fishery commodities and the second most traded commodity (both in value terms), following salmon. However, the shrimp farming industry is currently facing both production and environmental sustainability challenges. To tackle these challenges, project MYSIS aims at conducting a feasibility study to globally commercialize a disruptive weaning diet for shrimp larvae farmed in aquaculture. The technical feasibility of the MYSIS weaning diet was already validated at laboratory-scale, largely outperforming existing competitors by increasing larval growth performance, survival and disease resistance on the long-term. This novel weaning diet will therefore boost worldwide shrimp hatcheries and nurseries on the farming of high quality juveniles, representing enormous economic savings for these users due to its unforeseen biological effects and high cost-effectiveness, since its estimated price-range is not more than average of main competitors. The MYSIS diet refers to a multidisciplinary approach resulting from nutritional knowledge (super-premium quality ingredients that fulfil shrimp larvae nutritional requirements; food and feed sectors) and cutting–edge technologies (cold-extrusion and encapsulation; aquaculture and pharmaceutical sectors). To pursue in the innovation pathway to an industrial-scale demonstration and market deployment, this feasibility study contemplates an evaluation of intellectual property right protection and regulatory issues as well as the implementation of a robust market assessment and business plan. With project MYSIS, SPAROS expects to gain position as a key provider of forefront products and technology services in the global aquaculture market.

Acrónimo:	NEMAQUA
Título:	Nematodes as the world first pathogen free, ready-to-use and sustainable live feed for larval aquaculture industry
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2. - SOCIETAL CHALLENGES - Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy
Topic:	BG-12-2015-1 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth

Web:	http://cordis.europa.eu/project/rcn/198856_en.html
Resumen:	The project addresses the global need for a reliable mass production of a pathogen free live feed for the larval aquaculture industry. The new ready-to-use solution will be produced sustainably to supplement or replace Artemia, the most important current live feed. Mainly produced in USA, the only existing storage stable live feed, Artemia, is limited in supply, threatening future growth of the aquaculture industry. Hatcheries are eagerly looking for new ready-to-use and pathogen free solutions as all live feeds are potential carriers or vectors for diseases causing severe losses per year. E-nema has produced and successfully tested nematodes as live feed. This new protein feed, made in Europe, is produced in bioreactors using cost effective and readily available feedstock from land bound agriculture. Contrary to state of the art solutions no fish oil or fishmeal is required to enhance the feed to proper nutritional value. The storage stable new European live feed is ready-to-use within 1-hour rehydration in water, requiring minimal labour and facility. Existing live feeds are complicated to use, requiring treatment with chemicals, incubation periods and dedicated equipment. This consumes space, energy, skilled labour and produces waste. Manufactured under sterile conditions, the new feed eliminates the need for prophylactic or curative use of antibiotics in hatcheries. Hatcheries provide aquaculture farms with fingerlings that are then grown to market size in tanks, ponds or open water installations. Aquaculture is the fastest growing food production sector, requiring reliable feed sources to sustain this growth. A strong potential for sales into aquaculture of current and high-value emerging European aquatic species has been identified. Next step is to choose and verify methods for technical upscale as well as building an in depth researched business case. A high level investigation has so far found the project financially viable.

Acrónimo:	**NEPTUN**
Título:	Novel closed-cage system for high-value marine aquaculture
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2.3. - Unlocking the potential of aquatic living resources H2020-EU.3.2.5. - Cross-cutting marine and maritime research
Topic:	SMEInst-08-2016-2017 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/204299_en.html
Resumen:	The global demand for seafood is in a period of exceptional growth, making up 16% of all consumed animal protein, or 119m tonnes annually, expected to increase to 152m tonnes by 2030. Wild stocks, are near or beyond their sustainable limit, resulting in an annual production shortfall of ca. 30m tonnes by 2030. Farmed seafood provides a clear, viable alternative and consumer demand can thus drive a striking growth in aquaculture, if current technological and regulatory barriers can be overcome.

Currently marine aquaculture uses net-based open aquaculture systems (OAS) concentrating high numbers of fish in a confined area, leading to disease outbreaks (and transmission to wild stocks), pollution by fish sludge and chemicals used against diseases and algae growths, and from fish escapes, all threatening wild stocks and the local environment. The regulatory response varies but tends towards strict limits on production capacity, expected to tighten further in coming years, which, combined with the shortage of appropriate, sheltered in-shore seasites, act as a major barrier to further expansion and growth for European and global marine aquaculture.

To unlock aquaculture's potential for Blue Growth and jobs creation, alternative technologies must be brought to market; technologies that limit or eliminate the environmental impact of OAS in a cost-efficient way to preserve the environment while boosting the competitiveness and profitability of European marine aquaculture by allowing expansion. With NEPTUN, we will bring to market a cost-effective, closed-cage aquaculture system that combines an impermeable and durable fibreglass enclosure with an innovative hatch technology, optimising day-to-day management and operational control. The durable construction eliminates fish escapes while enablning a far higher degree of control of pathogens thus significantly lowering the need for pharmaceuticals and pesticides as well as reducing the economic risks from disease outbreaks.

Acrónimo:	**Qlice**
Título:	Environmentally-friendly system to combat sea lice in salmon farms
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2.3. - Unlocking the potential of aquatic living resources H2020-EU.3.2.5. - Cross-cutting marine and maritime research
Topic:	SMEInst-08-2016-2017 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/205275_en.html
Resumen:	The problem: Feeding an expected global population over 9 billion by 2050 is a daunting challenge. Aquaculture can play a major role in acting on this challenge while also meeting the so needed sustainable growth in food production. Salmon farms have become very large nurseries for sea lice – the main pathogen affecting salmon in net-pens (sea cages) – materializing in a huge threat both to the salmon farming industry and to wild salmon populations. Money spent by the Norwegian salmon farming sector on combating sea lice surpassed €500 million in 2015. Uncontrolled sea lice infestations are also affecting wildlife because wild juvenile

salmon have to pass through the fish farms before they reach their offshore habitat.

The solution: The Qlice method is a novel and environmentally-friendly solution, consisting of a chemical agent (particulate calcium oxide) and a delivery system – aiming at combating sea lice infestations in salmon farming. Unlike other treatments, Qlice will exert a positive impact on the environment by buffering the seawater acidification caused by intensive farming activity, i.e. excess feeding and wastes. Our results have shown up to 81% reduction in in sea lice and no fish mortality this reduction is enough to keep sea lice levels well below the permitted limit (less than 0.5 female adult sea lice per salmon on the net-pens) by Norwegian authorities.

The market: Aquaculture production already exceeds 97 million metric tons (live weight), while the value of international aquaculture trade amounts to USD157 billion. The production of farmed salmon has grown more than 600% since the 1990' and it is currently growing at 6% compound annual growth rate. Total market size for Qlice in Norway (approx. 50% of the global market) is around or €150 million – the global market size should be twice this figure. We are in a strong position to exploit an addressable turnover exceeding € 203 million, five years after market introduction.

Acrónimo:	**SAKLAS**
Título:	Feasibility of Salmon and Kingfish Land-Based Aquaculture Systems, Phase 1
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2.3. - Unlocking the potential of aquatic living resources H2020-EU.3.2.5. - Cross-cutting marine and maritime research
Topic:	SMEInst-08-2016-2017 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/205096_en.html
Resumen:	SAKLAS will mature and validate a disruptive, cost-effective, and 100% sustainable Recirculating Aquaculture System [RAS] concept for farming two high-value fish species, Atlantic Salmon [AS] and Yellowtail Kingfish [YK], solving critical production problems related to current RAS-based farming methods. SAKLAS is a major operational and technical advance in the EU, offering reductions in investment and operational costs of 20-50% and 15% (respectively) higher and stable biomass densities (60-90 kg/m3) with lower mortality rates (8%) and reduced environmental impact (e.g. phosphorous release is minimized to 1.5 mg in 100 m3/h outlet water flow). These numbers make SAKLAS the unbeatable and first profitable RAS solution for AS and YK grow-out worldwide, opening doors for farming warm water fish species

(such as YK) in northern latitudes for the first time. We estimate that by the end of 2023 (5 years after project completion) we will have reached an accumulated revenue and profits of €95.6m and €26.3m, and generated at least 18 new full time employments [FTE].

At this state, a Phase 1 grant is sought to verify SAKLAS market potential, as well as its technical and economic viability. The main activities of our Feasibility Study are:

- To elaborate a market, competitor and IPR analysis.
- To perform cost assessment for optimal positioning of our products (AS and YK) in the market.
- To establish the requirements (technical, legal, etc.) for final the integration and testing of SAKLAS in a real operational environment, and to formulate a Project Execution Plan for implementation of the envisaged Phase 2 project.
- To evaluate investment requirements post Phase 2 project, secure financing sources, and develop a detailed Business Plan.

Acrónimo:	**SELAM**
Título:	Large-scale piloting and market maturation of a novel process for sustainable European lobster aqua- and mariculture
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2. - SOCIETAL CHALLENGES - Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy
Topic:	BG-12-2015 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/199205_en.html
Resumen:	The objective of SELAM is to commercialise and bring to market our exclusive and high-quality EU lobsters based on our disruptive and fully automated production process for lobster aqua and mariculture. The fully automated SELAM process is combining land-based aquaculture of hatched eggs through the larval (1-3) and juvenile (4-5) stages before released into sea-ranching ocean mariculture, where growth happens without human interference and at no cost. Combined with our novel business model for shellfish sea ranching this will allow us to bring a new product to the market – sustainable and high-quality farmed EU lobster with significant added value for the customer compared to existing wild-caught alternatives. The SELAM concept was developed during our Phase I-type Feasibility Study - the FP7 NEPHROPS project, GA286903 - where the outcome was a novel production process with optimal production parameters (feed, light, temperature & water quality) at TRL7. Now we seek to op develop our Commercialisation Plan and final Business Innovation Plan (BIP). We have assembled a highly competent team holding all required resources, skills, facilities and networks to advance SELAM into a successful commercial product.

To successfully introduce SELAM to the market, we have created 5 sequential and quantifiable Commercialisation Objectives focusing on overcoming remaining barriers hampering successful commercialisation:

1. Technology maturation, elevating our SELAM process from TRL7 to TRL8 (WP1)
2. Large scale piloting bringing SELAM to TRL9 (WP2)
3. Supply chain development, up- and downstream (WP3)
4. Product exploitation strategy development, market research and post-project funding (WP4)
5. Innovation management and BIP development, IP management and stakeholder engagement (WP5)

SELAM will significantly boost our growth - quantified as accumulated revenues exceeding €151m for the 10-years post project with accumulated gross profit €94.9m and employment growth of 52 FTEs.

Acrónimo:	**smartFEEsh**
Título:	Smart FEEding Systems for Hatcheries: Automatic central feeding system of live food and microdiets for farmed fingerlings
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2.3. - Unlocking the potential of aquatic living resources H2020-EU.3.2.5. - Cross-cutting marine and maritime research
Topic:	SMEInst-08-2016-2017 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/208016_en.html
Resumen:	Aquaculture has managed to grow and develop to the point where it has currently become one of livestock's most flourishing sectors worldwide. Aquaculture finds its main bottleneck in the process of larval rearing. The particular biological needs of the fingerlings transform this process into a very complex activity, where the parameters control and process variables have a huge direct impact on the survival, deformity rates and production cost. Hatcheries' manual feeding practices limit the feeding events possibilities and their precise dosage control on single rearing tanks. Feeding several times a day demands high labour costs and administering large amounts of food irregularly cause fouling issues. Every single marine or freshwater fish farm is suitable of automation, adjusting this according to their production volume and rearing species. Even when it is economically advantageous either to use live prey substitutes directly, or at least to minimize the duration of this period in the absence of a suitable microdiets with very fine particles, below 100 µm pellet size, the production process requires health standards and a methodological rigor that only automation, in its various aspects (monitoring and control parameters, power management) can offer to avoid manual biases. smartFEEsh solution aims to respond to aquaculture sector's need by improving hatcheries' processes, through implementing automatic feeders for living preys (NOVOFEED, with a selling price

	of €70K) and microdiets between 75-500 µm of grain size (SMARTFEED, with a selling price of €60K). The accumulated turnover of 5 years after market launch is estimated at €8.34 millions, with a net profit of €4.19 million by a 50% profitability ratio. Workforce will increase by 3 people.

Acrónimo:	**SubCage**
Título:	Submersible Tension Leg Fish Cage for Mariculture in Unsheltered and Offshore Areas
Financiado por:	H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument H2020-EU.3.2. - SOCIETAL CHALLENGES - Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy
Topic:	BG-12-2015-1 - Supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth
Web:	http://cordis.europa.eu/project/rcn/199502_en.html
Resumen:	Aquaculture has done reasonably well to supplement the expanding consumption of fish and seafood in the EU but has still been unable to have the desired impact because of the high set up, operating and maintenance costs; lack of space along the coastal shores; pollution and threats of diseases and eutrophication. Hence, we developed SubCage – a working proof of concept prototype to TRL 6 which is based on a patented Tension Leg Cage (TLC) technology capable of submerging fish cages to depths of up to 55 m at a controlled velocity based on the principle of wave ispersion. This prototype is a 12 m diameter fully submersible fish cage, which has been tested for 2 years in Crete using red porgy. This was successfully demonstrated as there were no issues during the operation and thus confirmed that SubCage satisfies all customer needs, such as: cost benefit solution for fish farming in unsheltered area; increase of fish quality; improvement of fish health and mortality rate. Despite the risk surrounding aquaculture in the unsheltered regions due to its environment; we proved that, by using SubCage, expanding production capabilities in such areas is feasible, commercially beneficial to farmers and can increase the value of the fish species. With the help of the SME instrument in scaling up our prototype to a 30-55 m diameter commercially acceptable fish cage, we would expect to contribute to an increase in fish price of up to 20% and additional increase in yield of up to 2% in comparison with surface cages. In comparison with competitor technologies, our prices will be several times lower by 30-40% as well as an estimated ROI being achievable in approximately 3 years. Within 5 years, we can humbly anticipate to enhance the production capacity of the EU by 2%. This translates to Refa Med Srl. deploying 402 SubCage units in the EU within 5 years, generating a revenue stream of over €80 million and helping create between 300 and 400 product-related full-time jobs.

Acrónimo:	ALGAE4A-B
Título:	Development of Microalgae-based novel high added-value products for the Cosmetic and Aquaculture industry
Financiado por:	H2020-EU.1.3.3. - Stimulating innovation by means of cross-fertilisation of knowledge
Topic:	MSCA-RISE-2015 - Marie Skłodowska-Curie Research and Innovation Staff Exchange (RISE)
Web:	http://www.algae4ab.eu/
Resumen:	Microalgae were always an exciting target for Aquaculture and Biotechnology, as they represent a largely untapped reservoir of novel and valuable bioactive compounds. ALGAE4A-B (ALGAE For Aquaculture and Beauty) project seeks to exploit the microalgae diversity, as a source for state-of-the art high-added-value biomolecules in aquaculture and cosmetics. The diversification of microalgae biomass production towards two independent applications will allow the microalgae industry to gain access to alternative markets in an uncertain, highly competitive and fast changing commercial environment. The project will combine both basic and applied multidisciplinary research in the fields of –omics technologies, biochemistry and applied biotechnology in order to: a) Develop and optimize of low input and application-based microalgae culture systems, b) Develop of "-omic" resources for both microalgae and fishes, c) Develop of downstream processing of high value added products from microalgae, with an emphasis in polysaccharides, proteins, enzymes, antioxidants, d) Develop, formulate and in vitro evaluate a new range of cosmetic and nutraceutical products for aquaculture. The implementation of the project will offer the industrial partners the opportunity to translate scientific research into well defined knowledge-based end products and analytical tools. Apart from scientific objectives the ALGAE4A-B will provide a platform for an efficient dissemination, transfer of knowledge and training between academic, commercial partners and society. Overall, ALGAE4A-B aspires to foster both the European capacity building and the strategic objectives of EU Blue Growth and Marine Biotechnology to harness the untapped potential of Europe's seas and coasts for training and sustainable growth.

Acrónimo:	BlueBRIDGE
Título:	Building Research environments for fostering Innovation, Decision making, Governance and Education to support Blue growth
Financiado por:	H2020-EU.1.4.1.3. - Development, deployment and operation of ICT-based e-infrastructures
Topic:	EINFRA-9-2015 - e-Infrastructures for virtual research environments (VRE)
Web:	http://www.bluebridge-vres.eu/
Resumen:	BlueBRIDGE responds to the Juncker Investment Plan opening funding opportunities for e-Infrastructures, innovating current practices in producing & delivering scientific knowledge advice to competent authorities & enlarges the spectrum of growth opportunities in distinctive Blue Growth areas. BlueBRIDGE builds on existing EU and International e-Infrastructures providing capacity building in interdisciplinary research

	communities of scientists, data managers & educators in academic institutions & industries focusing on 4 major challenges: 1) stock assessment 2) socio-economic performance analysis in aquaculture 3) fisheries & habitat degradation monitoring 4) education & knowledge bridging on protection & management of marine resources. BlueBRIDGE capitalizes on past investments and uses a proven e-Infrastructure connecting 1500+ scientists, integrating +50 repositories, executing +13,000 models & algorithms/month; providing access to over a billion quality records in repositories worldwide, with 99,7% service availability. BlueBRIDGE focuses on user needs, opening services & data to actors & liaising with competent agencies & SME Innovation Clusters. Major results include service-driven research environments addressing concrete challenges, data and a wide range of user defined Blue Growth indicators. BlueBRIDGE leverages a set of common services that together foster the realization of an innovative infrastructure-based approach for collaborative knowledge and data sharing, publishing, citation, traceability & trust concretely contributing to the e-Infrastructure Commons. BlueBRIDGE will be deployed in 30 months by an authoritative & complementary consortium with expertise in multiple scientific domains. It bundles forces from International Government Organizations, research institutes, industry, SMEs, education and computer science domains, establishing a network with a proven track in VREs & e-Infrastructures, marine, environmental & fisheries science & economy.

Acrónimo:	**Entrefish**
Título:	Sustainable entrepreneurship for stronger skills and new employment in fishery's and aquaculture's SMEs
Financiado por:	EMFF (European Maritime and Fisheries Fund)
Web:	https://ec.europa.eu/easme/en/sustainable-entrepreneurship-stronger-skills-and-new-employment-fishery-s-and-aquaculture-s-smes
Resumen:	Entrefish project wants to increase the skills, in terms of innovation and sustainability of SMEs enterprises in the fish and aquaculture sectors improving both the skills of the people working in the sector and attracting new high skilled workers, developing and supporting the needed multidisciplinary approach to sustainability (environmental, biological, social, economic, managerial aspects).

Acrónimo:	**FAIMMAC**
Título:	Fishery and aquaculture integrated management model along the Adriatic coasts
Financiado por:	EMFF (European Maritime and Fisheries Fund)
Web:	https://ec.europa.eu/easme/en/fishery-and-aquaculture-integrated-management-model-along-adriatic-coasts
Resumen:	The project aims to provide guidelines to guarantee an eco-friendly aquaculture development among research centres and economic operators to stimulate the sustainable production of flat

oysters in the Adriatic basin. The flat oyster integrated management strategy looks at converging with other socio-economic activities in sea coastal areas, promoting job creation, innovation and entrepreneurship in the blue economy of the Adriatic Sea.

Acrónimo:	**INvertebrateIT**
Título:	Disruptive and forward-looking opportunities for competitive and sustainable aquaculture
Financiado por:	EMFF (European Maritime and Fisheries Fund)
Web:	https://ec.europa.eu/easme/en/disruptive-and-forward-looking-opportunities-competitive-and-sustainable-aquaculture
Resumen:	The project aims at developing innovative approaches for the aquaculture sector, particularly using organic wastes for the production of invertebrates to be used for fish feed. The project will bring together public and private stakeholders across the Atlantic sea basin to develop a Joint Roadmap and Investment Plan, with a 5-10 year time frame

Acrónimo:	**MarTERA**
Título:	Maritime and Marine Technologies for a New ERA
Financiado por:	H2020-EU.3.2.5. - Cross-cutting marine and maritime research
Topic:	BG-05-2016 - ERA-NET Cofund on marine technologies
Web:	https://www.martera.eu/start
Resumen:	The overall goal of the proposed Cofund is to strengthen the European Research Area (ERA) in maritime and marine technologies and Blue Growth. The realisation of a European research and innovation agenda needs a broad and systematic cooperation in all areas of waterborne transport, offshore activity, marine resources, maritime security, biotechnologies, desalination, offshore oil & gas, fisheries, aquaculture etc. covering all relevant maritime and marine sectors and regions for a sustainable development of the maritime sector. Research and innovation activities in these fields cannot be tackled either at national levels alone, or solely by a single sector. Coordinated actions are required for the maritime industry to strengthen Europe's position in this important and complex economic field in a global market. The proposing consortium will organise and co-fund, together with the EU, a joint call for trans-national research projects on different thematic areas of Blue Growth. Furthermore, additional joint activities that go beyond this co-funded call are planned, in order to contribute to the national priorities as well as to the Strategic Research Agenda of JPI Oceans and WATERBORNE. With the cooperation of ERA-NET MARTEC and JPI Oceans, a broader variety of topics with a larger amount of funding will be available for the trans-national projects. Moreover, the focus of development in MarTERA is given to technologies (instead of sectors) due to their potentially large impact to a wide range of application fields. The proposal responds to the topic ERA-NET Cofund on marine technologies of the work programme 2016-2017 of the societal challenge 2 (Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bio-

economy) under Horizon 2020. Thereby it also contributes to the overall EU objective of building the ERA through enhanced cooperation and coordination of national research programmes.

Acrónimo:	**PerformFISH**
Título:	Consumer driven Production: Integrating Innovative Approaches for Competitive and Sustainable Performance across the Mediterranean Aquaculture Value Chain
Financiado por:	H2020-EU.3.2.3. - Unlocking the potential of aquatic living resources
Topic:	SFS-23-2016 - Improving the technical performance of the Mediterranean aquaculture
Web:	http://www.performfish.eu/
Resumen:	Gilthead sea bream and European sea bass are by volume the third and fourth most farmed fish species in the EU, while their collective value surpasses that of salmon, trout or mussel. These two species are farmed and contribute significantly to wealth and job creation in rural and coastal areas in all EU Mediterranean countries. However, production of sea bream/bass in the EU has remained stagnant for the last decade and the industry faces significant sustainability challenges. The overarching objective of PerformFISH is to increase the competitiveness of Mediterranean aquaculture by overcoming biological, technical and operational issues with innovative, cost-effective, integrated solutions, while addressing social and environmental responsibility and contributing to "Blue Growth". PerformFISH adopts a holistic approach constructed with active industry involvement to ensure that Mediterranean marine fish farming matures into a modern dynamic sector, highly appreciated by consumers and society for providing safe and healthy food with a low ecological footprint, and employment and trade in rural, peripheral regions. PerformFISH brings together a representative multi-stakeholder, multi-disciplinary consortium to generate, validate and apply new knowledge in real farming conditions to substantially improve the management and performance of the focal fish species, measured through Key Performance Indicators. At the core of PerformFISH design are, a) a link between consumer demand and product design, complemented with product certification and marketing strategies to drive consumer confidence, and b) the establishment and use of a numerical benchmarking system to cover all aspects of Mediterranean marine fish farming performance. Created knowledge and innovative solutions will underpin the developed code of conduct and good practices and will foster modernization through capacity building of the Mediterranean aquaculture workforce.

CTN

centro
tecnológico
naval y del mar

marine
technology
centre

www.ctnaval.com