



UCSC

OTT | UCSC

OFICINA DE TRANSFERENCIA TECNOLÓGICA
DIRECCIÓN DE INNOVACIÓN

Bivalnet

GROWTH SYSTEM FOR CULTIVATION OF MITYLIDAE

UNIVERSIDAD CATÓLICA DE LA SANTÍSIMA CONCEPCIÓN



Technology Overview



Bivalnet technology is a cultivation mesh screen for mitylidae aquaculture (mussels) or other bivalve molluscs, to be used in marine protected and non-protected areas, which allows to reduce dislodgments of mussels, increasing production. The framework configuration of sleeves units improves mussels growth and production yield per area of water used. Bivalnet can be used in a cultivation system with controlled submersible flotation, minimizing the negative effects on production in non-protected areas, and increasing productivity compared to traditional long-line system (see figure).

Benefits



- Allows to maximize the yield per unit of area of aquaculture system.
- Increases production yields by 1.9 times per line compared to traditional long-line system.
- Reduces maintenance costs by 20%.
- Reduces the fattening time for mitylidae by five months.
- Reduces mollusc dislodgments, because the framework design prevents rope entanglement with neighboring rows.
- Its optimized design allows mussel aquaculture in exposed coastal areas of intense waves action, where there is less contact with toxins than in areas of the coastal edge with traditional culture.

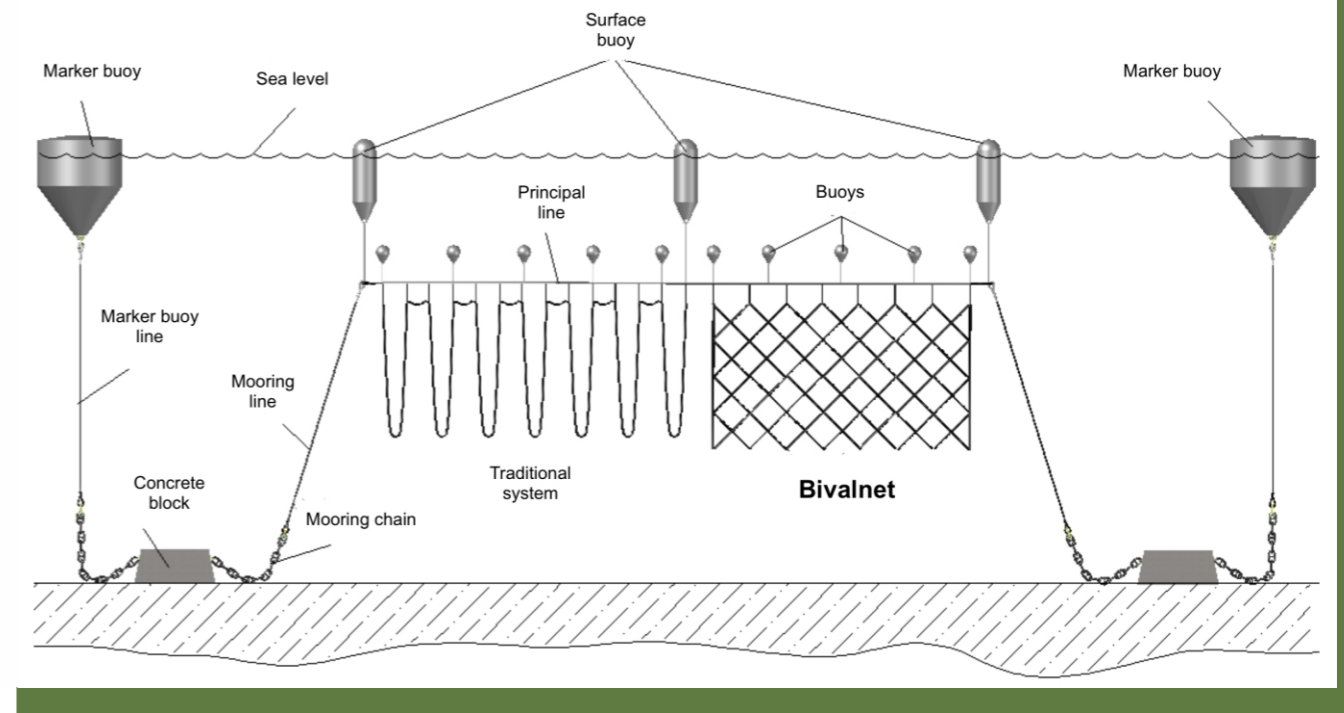
Technology Description



Bivalnet is a cultivation mesh screen, that maximizes the aquaculture production and prevents entanglements between ropes compared to the traditional system (see figure). The framework is connected to a mother line by fastening ropes, which are connected to a flotation system. This system contains mooring arrangements that alternately attach each rope with the adjacent rope, forming rhombuses and an interior free area, which together creates the cultivation framework. Due to the weight of this configuration, the system is kept in vertical position, achieving a higher stability in ropes against the sea current.

The construction of the cultivation mesh screen defines the maximum free interior area of the rhombus, which can fluctuate between 400 to 4,900 cm², by allowing the use of ropes from 4 to 15 cm in diameter. In addition, the shape of the rhombus can be defined by decreasing the maximum free interior area of the rhombus. This technology can be installed in the traditional systems of long-line or rafts for aquaculture mussels, which is joined by a mother line to a flotation structure and an anchoring system (see figure).

Bivalnet allows to expand the mussels cultivation industry to new marine areas which increases; industrial production, efficiency in the use of suitable areas for aquaculture mussels, and the productivity of farmers; and decompress those areas with high aquaculture concentration, contributing to a sustainable growth of the mussel aquaculture industry.





Intellectual Property



Patent holder: Universidad Católica de la Santísima Concepción, Chile.
This technology is protected by a Utility Model in the following countries:

- **Chile:** N° 549, patent granted.
- **Spain:** U201830107, patent granted.
- **New Zealand:** N° 739475, patent granted.
- **Canada:** N° 010984-0025, patent application.

Technology Development State



TRL 7: large-scale prototype with industrial tests validated in a real-operational environment, well integrated with other systems.

Business Opportunity



Technology available for licensing.

Researchers



Christian Díaz Peralta

Fishing Engineer,

Master in Business Administration,

Research field: Aquaculture Engineering, Development of small and medium scale aquaculture.

<https://ingenieria.ucsc.cl/persona/christian-diaz-peralta/>

Catterina Sobenes Vennekool

Fishing Engineer,

Master in Economics of Natural Resources and the Environment,

Doctor in Environmental Sciences,

Research field: Hydroecology for the sustainability of aquatic species, Aquaculture, Environment.

<https://ingenieria.ucsc.cl/persona/catterina-sobenes-vennekool/>

Contact



UCSC Technology Transfer Office

Email: ott@ucsc.cl

Phone: +56 41 234 5105

Web: ott.ucsc.cl

