



Oyster Farming and its Environmental Benefits

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DESCRIPTION

Oyster farming is a type of aquaculture (or Mariculture) in which oysters are grown for commercial purpose (for their edible pearls, shells, and inner organ tissue). Oysters are a highly prized sea food that is considered a delicacy in the United States, Europe, and Japan, among other places. In some parts of India, there is an increasing demand for oyster flesh. The 'oyster' is regarded to be the most well-known marine animal in science. It is one of the most widely grown plants. The Romans were the first to devise basic techniques of gathering oyster seeds and raising them for food, dating back to the first century BC. The Japanese pioneered farming techniques that produced excellent results. It is only recently that people have become aware of the enormous potential for oyster cultivation in the tropics. Its development under tropical conditions is presently receiving serious attention.

Four environmental benefits of oyster farms

Oyster farms provide essential environmental benefits to coastal seas and estuaries by organically improving the water, air, and species that make up neighboring ecosystems. This, in turn, benefits the local community's environmental and economic well-being. Oyster farms provide four environmental advantages:

Filtration of water: Water is moved in and out of the gills of farmed oysters and other shellfish, which trap solid particles in the water. The animal eats the solid particles and then excretes the cleaner, unused water. Oysters remove excess nutrients, sediment, and other pollutants from waterways through the simple process of feeding, allowing sunlight to benefit entire ecosystems.

Removal and cycling of nitrogen: Oysters absorb nitrogen from the water surrounding them when feeding. Oysters that have been harvested carry this surplus nitrogen with them, removing it from the environment. Oysters also help to cycle nitrogen back into the water, where it is needed to support other species such as phytoplankton, through their feces.

Recycling of carbon dioxide: Some of the carbon dioxide present in the atmosphere is dissolved in streams. This carbon dioxide is taken and stored, and processed by oysters, with some

of it being released as waste and transformed into sediment. Many species of deposit-feeding creatures rely on this oyster-processed carbon for their survival.

Construction of habitat: Many aquatic life forms require a hard, sturdy surface to cling on and thrive. The presence of oysters and other shellfish leads to the formation of a firm bottom substrate, which is ideal for mussels, barnacles, anemones, and other creatures. Oyster reefs are also used by a variety of fish species to lay eggs and defend themselves from predators.

Oyster farming methods

In North America, there are four basic methods for raising oysters. Rack and Bag Cultured, Longline Cultured, Suspended Tray or Suspended Lantern Cultured Beach or Bottom Cultured (or Intertidal Cultured). The flavor profile, texture, and shell features of oysters are all affected differently by each procedure. Bag to Beach and Tumbling are two more variants. Bag to Beach is a hybrid of Rack and Bag and Beach cultivation methods. Suspended oysters are tumbled to promote shell strength and meat texture in a version of Suspension Cultivation called Tumbling.

Bottom or beach cultured oysters: Beach/Bottom Cultured Oysters, also known as Intertidal Cultured Oysters, are oysters grown on tidal beaches with rocky or sandy bottoms. These oysters are used to resisting the tides, clamping shut during low tides to protect themselves from predators and preserve their "liquor".

Rack-and-bag culture: Oysters are placed in oyster grow-out bags and then fastened to a steel rebar rack in rack-and-bag culture. This strategy is heavily reliant on an area's tidal range. Low tides would be required in the area for farmers to have access to the bags.

Suspended tray cultured oysters: Oysters grown in suspension are the prima donnas of the oyster world. They spend their entire lives hanging in deep water, shielded from predators, muck, sand, and silt, in mesh trays or Japanese lantern-shaped nets. Examples of suspension tray cultured oysters include: Chef's Creek, Emerald Cove, Pearl Bay, Sinku, and Snow Creek.

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Received: 01-Feb-2022, Manuscript No. CSSB-22-16365; **Editor assigned** 03-Feb-2022, PreQC No. CSSB-22-16365 (PQ); **Reviewed:** 17-Feb-2022, QC No. CSSB-22-16365; **Revised:** 21-Feb-2022, Manuscript No. CSSB-22-16365 (R); **Published:** 28-Feb-2022, DOI: 10.35248/2332-0737.22.10.04

Citation: Fernandes T (2022) Oyster Farming and its Environmental Benefits. *Curr Synth Syst Biol*.10:004

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Bag to beach cultured oysters: The bag to beach oyster farming method combines two oyster growing technologies. During the last 6 months before harvesting, rack and bag oysters are removed from their pampered surroundings and placed in a beach culture environment. This helps them "toughen up," resulting in stronger, less brittle shells and firmer meats. Barron Point, Hammersley, and Little Skookum are examples of bag to beach cultivated oysters.