OPEN ACCESS Freely available online

ISSN: 2155-9546
Journal of Aquaculture Research & Development

Perspective

Impact of Marine Pearl Culture on Coastal Ecosystems

Groell Kim*

Department of Aquaculture Research, Aalto University, Espoo, Finland

DESCRIPTION

Pearls often referred to as the "teardrops of the sea," have been coveted for their exquisite beauty and rarity for centuries. While natural pearls have always held a different place, the development of marine pearl culture techniques has revolutionized the pearl industry. This article delves into the world of marine pearl culture, exploring the history, methods, environmental impact, and the beauty that emerges from the nurturing of these oceanic gems. The concept of pearl culture is not new. For centuries, humankind has been captivated by pearls. Historically, pearls were found in the wild, primarily in freshwater mussels and marine oysters. The most sought-after pearls were those discovered by chance in nature, as they were often rare and valuable. Marine pearl culture, as we know it today, began in the early 20th century when Kokichi Mikimoto, a Japanese entrepreneur, successfully cultured pearls using the akoya oyster, *Pinctada fucata*. This innovative breakthrough marked the birth of the modern pearl farming industry. The first step in marine pearl culture involves selecting the appropriate species of oysters. Different types of oysters produce pearls with unique characteristics. Common oyster species used in pearl farming include the akoya oyster, Tahitian black-lipped oyster, and the South Sea pearl oyster. To initiate the pearl development process, a small bead, often made of mother-of-pearl or another suitable material, is carefully inserted into the oyster's mantle tissue, along with a small piece of mantle tissue from a donor oyster. This irritates the oyster, leading it to form layers of nacre around the inserted nucleus, resulting in a pearl. After nucleation, the oysters are carefully placed in pearl farms where they are suspended in the water column or attached to lines or nets. They are regularly monitored for their health, growth, and pearl development. The duration of cultivation varies depending on the type of pearl desired, ranging from several months to several years. Once the pearls have developed, they are harvested. This process is done with precision to ensure the oyster is not harmed. After harvesting, the pearls are cleaned and graded based on their size, shape, luster, and surface quality. Pearl farms can affect the seabed and coastal ecosystems where they are located. The placement of structures in the water can lead to the alteration of local habitats, potentially impacting other marine species and biodiversity. Some pearl farms may use chemicals to control pests and diseases in oyster populations. The release of these chemicals into the surrounding waters can have adverse effects on marine ecosystems. There is also the risk of cultivated oysters escaping from farms and potentially interfering with native oyster populations. To meet the demand for pearls, there is the temptation to over-harvest oysters, which can lead to population declines and loss of genetic diversity. Efforts to mitigate these environmental concerns include sustainable aquaculture practices, improved farm management, and the development of technologies to minimize the use of harmful chemicals. Cultured pearls come in various shapes, sizes, and colors, each with its unique charm. Akoya Pearls typically cultured in Japan, are known for their high luster and smooth surfaces. They are often white or cream-colored and are prized for their round shape. Tahitian pearls are cultured in French Polynesia, Tahitian pearls are renowned for their dramatic dark colors, including shades of black, green, and peacock blue. Their unique colors and sizes make them highly sought after. South Sea pearls are cultured in the warm waters of the South Pacific, these pearls are among the largest and most valuable. They come in various shades, from white and gold to silver and deep hues like pistachio. While not marine, freshwater pearls are cultivated in rivers, lakes, and ponds. They are known for their diversity of shapes and colors, and they are a more affordable option for pearl enthusiasts. Keshi pearls are accidental pearls that form in oysters as a byproduct of the culturing process. They are typically small and irregular in shape but possess a unique, organic beauty.

Correspondence to: Groell Kim, Department of Aquaculture Research, Aalto University, Espoo, Finland, E-mail: Knedmei@gmail.com

Received: 16-Oct-2023, Manuscript No. JARD-23-23837; **Editor assigned:** 18-Oct-2023, Pre QC No. JARD-23-23837 (PQ); **Reviewed:** 01-Nov-2023, QC No JARD-23-23837; **Revised:** 08-Nov-2023, Manuscript No. JARD-23-23837 (R); **Published:** 15-Nov-2023, DOI: 10.35248/2155-9546.23.14.813

Citation: Kim G (2023) Impact of Marine Pearl Culture on Coastal Ecosystems. J Aquac Res Dev. 14:813.