

CASE STUDY

RO | UF | MBR

Cultivation
Oita, Japan

RO/NF UF MBR Chemicals

TORAY

Toray Ultrafiltration (UF) Membrane Technology Demonstrates Reliability at Oyster Farming Sites

BACKGROUND

Oysters "Higata Bijin," a brand name oyster cultivated at the Nakatsu Branch of the Oita Prefecture Fisheries Cooperative Association, are cultivated in baskets hanging in the mud flat. The oysters are cultivated in baskets suspended on tidal flats, and each oyster is grown in a single-seeded state. Bivalves like oysters are known to accumulate and concentrate in their bodies substances that cause food poisoning when inhaled from seawater. Therefore, the production, preservation, and shipping of oysters must meet strict standards set by the government.

CHALLENGE

Raw oysters require "purification" to remove impurities from their bodies before shipment. This process is carried out in a special tank called a "purification tank." The water in the tank must be free of pathogens and other impurities. Generally, ultraviolet (UV)-cidal devices are known to be used to purify water. However, since it is necessary to properly control the amount of UV radiation and other conditions depending on the turbidity in the tank, we have been searching for a more reliable method.

RESULTS

Toray UF is now used to purify water. Toray UF is a hollow-fiber filtration membrane made of PVDF and is highly regarded in the market for its high durability and stable operation over the long term. Toray UF's 0.01 μm pore size physical filtration can remove pathogens and viruses of larger sizes, and the use of UV sterilization in combination with UV sterilization has made the process even more reliable. Unlike sterilization methods that use chemicals, this method leaves no residue. So, the use of this method in aquaculture is highly appreciated. Therefore, Toray UF has been used for over 10 years and continues to deliver safe, reliable, and delicious food.

(Sterilization rate: 99.9999% * Result of challenge test with *Bacillus atrophaeus*)

CONDITION

Toray UF : HFU-1020AN \times 2 unit

Capacity : 130m³/day

Cleaning : 1 time/day

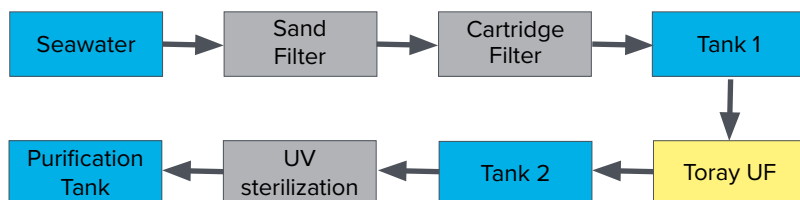


Figure 4: Membrane filtration system design



Figure 1: Aquaculture baskets hanging in mudflats



Figure 2: "Higata-Bijin"



Figure 3: Toray UF unit

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