

The new aquaculture business

KITZ Smart Aquaculture

—Providing a new service with 3 solutions—

Since June 2012, KITZ Corporation has started KITZ Water Solutions, a group which combines and introduces water solution technologies and services of KITZ Group's companies.

We are pleased to announce that KITZ Water Solutions has succeeded in building a RAS farm which reconditions the water to optimize fish culturing by using radical reaction^{*1} and the long-term cultivation of sea bream while using a remote monitoring and an automatic control system.

^{*1} Refers to a reaction where radicals (free radicals) are involved in the process of an organic reaction

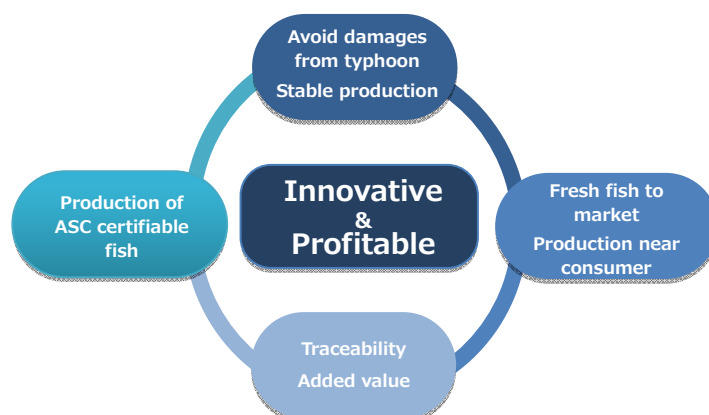
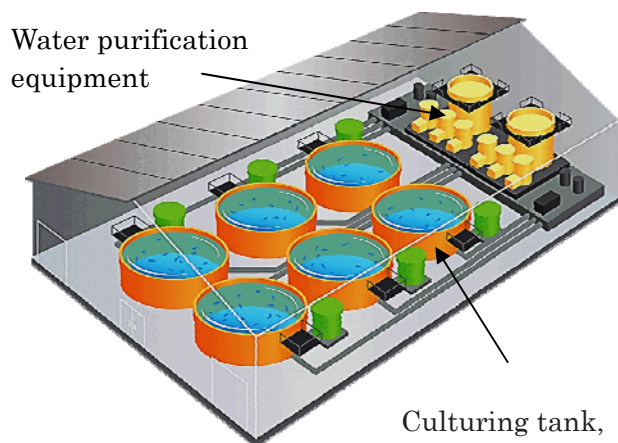
■ Current state of the world aquaculture market

Due to the growing demand and the lack of natural resources in the fisheries market, it is estimated that in 2015 farmed fish will account for about half of the fish which is produced in the market and is expected to accelerate further^{*2}. In recent years, farming fish in RAS (Recirculating Aquaculture System) has become very popular in the US and Europe. This is because RAS allows for the farmer to rear fish indoors on land where the fish are unaffected by both natural disasters such as typhoons and marine pollution such as the red tide. Also, it ensures traceability, reduces manpower and the possibility of the fish being certified by the ASC^{*3} is very high.

^{*2} Food and Agriculture Organization of the United Nations (FAO)

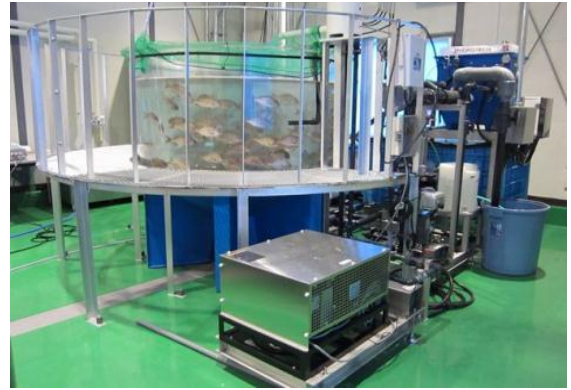
^{*3} Aquaculture Stewardship Council: certification and labelling program for responsibly farmed seafood. Following the London Olympics, the Rio 2016 Organizing Committee for the Olympic and Paralympic Games has announced that all seafood served to the athletes, officials, press and at the onsite restaurants will be ASC certified at the 2016 Rio Games.

【Image of Recirculating Aquaculture System(RAS) farm】



■ Long-term cultivation of sea bream while using a remote monitoring and an automatic control system

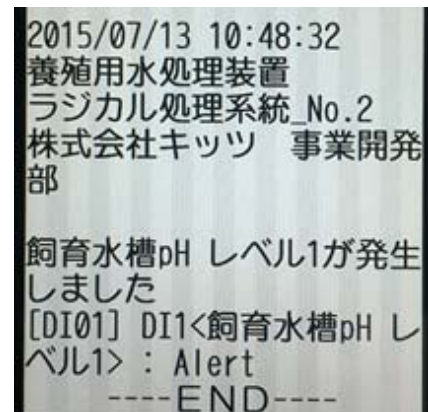
As released in July of 2014, we have been successful in developing a new water purification technology. With that technology we have built our own RAS farm in our Chino Plant (located in Nagano Prefecture). We have so far been successful at culturing red sea bream with no medication for 141 days (as of Oct. 21, 2015). Furthermore, the RAS facility is equipped with our newly developed automatic control and remote monitoring system.



【Inside of RAS facility (KITZ Chino plant)】



【Remote monitoring screen】



【Notification via email about the level 1 pH alert in the culturing tank】

■ Three solutions that "KITZ Smart Aquaculture" can provide

Based on the results that we have achieved, we plan to go into the expanding aquaculture market in 2016 by providing three solutions. They are engineering (water purification technology, optimized facility design and construction management), management (automatic control and remote monitoring, maintenance of the facility and breeding know-how), and consulting (market research, development of a business plan and operation/management training). We aim to provide total support from the conceptual planning stage to construction to operational management for anyone who is considering stepping into the aquaculture business.

By using a highly automated system, stable production of high quality fresh fish in a location close to the consumption area will be possible. Also, by building a processing plant nearby, the production of fish that ensures the quality and safety is possible. By combining all the three solutions together, a chance for new business can be highly expected.

【The 3 solutions】



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