



Growing eco-friendly fish faster with LED lighting

The challenge

The Kingfish Company has a clear mission: become a leader in the sustainable production of premium marine seafood. Their proprietary recirculating aquaculture systems (RAS) use seawater and 100% renewable energy to deliver a healthy, antibiotic-free delicacy: the Dutch Yellowtail or Kingfish. It is the world's first Yellowtail farm making use of a RAS, and the only land-grown Yellowtail, certified by the Aquaculture Stewardship Council (ASC) & Best Aquaculture Practices (BAP). The company worked with Signify to design an effective Philips LED lighting system for their needs. "During the on-growing stage, the fish need enough light to see the other fish and their food, and a long day to optimize their growth and feed conversion ratio," says Kees Kloet, COO The Kingfish Company. "And the lighting system needs to withstand our harsh saltwater environment."



In our closed ecosystem, we control the lighting and other environmental factors to produce a superb quality fish that is a safe and sustainable alternative to ocean caught fish."

Kees Kloet, COO Kingfish Zeeland

The solution

"We chose Signify because of their expertise and credibility. They were the first to offer LED lighting in aquaculture, and do long-term research in this area," says Kloet. The set-up has three LED lights above each tank and a proven light recipe for growing fish to promote steady growth via a controlled system. The fish can see each other and their food, dusk and dawn are simulated very well and the fish experience an endless summer via the software driven control system. The slow ramp up and deep dimming capabilities reduce stress and promotes optimal growth for this highly active fish.

Key benefits

- Energy-efficient lighting system for cost-effective production
- Optimized light intensity promotes consistent growth
- Proven research-based light recipe for growing fish helps reduce stress in fish





Benefits

“Our concept has been developed, based on sustainability and respect for our fish and the environment,” says Kloet. The team spent many years working with Wageningen University in the Netherlands, just to select the right fish species. Their eco-friendly facility uses no antibiotics or vaccines, green energy, heat exchangers and a sophisticated water treatment and recycling technology to clean the water before discharging it back into the sea.

“Signify’s LED lighting fits our whole philosophy because it is energy-efficient. It allows us to harvest eggs year-round in our hatchery and create the conditions for consistent and healthy growth in our on-growth tanks. The LEDs provide uniform lighting that is crucial for optimal growing conditions and eliminate seasonal influences. The modules stand up well to the humidity and harsh saltwater,” says Kloet.

“To achieve success, you have to get all aspects right in the RAS, and light is one of them. With our concept, we’ve achieved 30%-40% higher production than we had designed for. These results give us confidence as we scale up our production.” The company is planning to scale up from its current 1200 metric tons (MT) capacity in the Netherlands and plans on further expanding in Europe and to develop its first site in the U.S.

“As our world’s supply of ocean caught fish is at its limit, The Kingfish Company is putting more safe and sustainable choices on the menu that satisfy everyone’s taste.”

Kees Kloet, COO The Kingfish Company

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www.philips.com/aquaculture
Write us an e-mail:
aquaculture.info@signify.com

