



CASE STUDY

ULTRAAQUA
UV DISINFECTION SYSTEMS

LOCATION: NELSON, NEW ZEALAND

YEAR: 2018

SECTOR: AQUACULTURE

PURPOSE: CHINOOK SALMON RESEARCH

PARTNER: FRESH BY DESIGN

CHINOOK SALMON

Chinook salmon species are the largest in the Pacific salmon genus and is often referred to as King Salmon. It has gained popularity in the market due to a high amount of omega-3 fatty acids found in its flesh. However, fishing alone is not capable to meet the demand and because its numbers have dangerously declined in the wilderness, the fish producers were pushed to find another way to meet it. Today, the largest farmed Chinook Salmon producer in the world is New Zealand as it accounts for about half of the global production. Fortunately, New Zealand has placed high importance on keeping its aquaculture industry as environmentally-friendly as possible and, as a result, has been recognized as the most sustainable in the world by Global Aquaculture Performance Index in 2011 ¹.

CAWTHON INSTITUTE IN NEW ZEALAND

Cawthron Institute is New Zealand's largest independent science organisation, offering a broad spectrum of services to help protect the environment and support sustainable development of primary industries. Cawthron is a diverse organisation employing more than 275 scientists, laboratory technicians, researchers and specialist staff from 26 countries. Cawthron's scientists have expertise in aquaculture research, marine and freshwater resource management, food safety and quality, algal technologies, biosecurity and analytical testing. Its ground-breaking science is supported by substantial testing and research laboratories, state-of-the-art technology and a purpose-built aquaculture park².



"Our ULTRAAQUA UV units are integral parts of our RAS systems, they are trouble free and we have been impressed by their performance and durability in both freshwater and seawater. The UV sensor output is a great addition and helps with our routine water quality monitoring"

CHRIS ENSOR
AQUACULTURE OPERATIONS MANAGER,
CAWTHON INSTITUTE

CASE STUDY

ULTRAAQUA
UV DISINFECTION SYSTEMS

CHINOOK SALMON RESEARCH FACILITY

Together with Fresh By Design, ULTRAAQUA UV installed its UV systems in Chinook Salmon research facilities for the latest Cawthron Institute project - Finfish Research Centre (FRC). The FRC facility has 6 individual systems – four large feed trial systems and two smaller physiology systems that can be run on either freshwater or seawater. The facility was designed to conduct Chinook Salmon research from fry through to harvest size however, it can also be used for multiple fish species due to the flexibility of its design.

Each of the individual systems has 8000L or 2500L liter bespoke fiberglass tanks with dual drains and swirl separators for waste collection and analysis³.

ULTRAAQUA UV AT FRC

ULTRAAQUA UV systems are installed at different points across the facility. At the water entry point, one UV unit ensures no dangerous pathogens get in RAS through intake water. Additional two UV units are within production itself - for feed trial systems and physiology systems. They help to control the microbiology of the species and eliminate potentially dangerous microorganisms. The FRC facility wastewater treatment process includes: clarification, ozone treatment with UV being the final step before water release back into environment.

All ULTRAAQUA UV systems used in the facility are fitted with UV irradiance monitoring sensors providing superior disinfection and energy efficiency for the user. They are also made from polypropylene and polyethylene materials that are known for their excellent corrosion-resistant qualities.



SOURCES

¹ <http://web.uvic.ca/~gapi/results/browse/newZealand.html>

² <https://www.cawthron.org.nz/about/>

³ <https://freshbydesign.com.au/cawthron-institute-finfish-research-centre/>