

Top quality trawl captured fish

The overall goal for CRISP (WP 5) is to contribute to, and develop, the competitive power of the trawling fleet by implement new technology and knowledge.



Future trawler with live storage on board may be based on a standard hull 80 meters long and 17 meters wide. Photo: Rolls-Royce Marine.

The focus is on the processing, from when the fish is in the trawl at the seabed until the processed and finished raw material is packed and in storage.

Today, trawling is facing an increasing demand for effectiveness and still involves many demanding physical tasks. With regard to target areas in the technological development, the focus has been on reducing fuel consumptions by means of vessel design and more efficient gear technology.

Catch handling

However, not much effort has been invested into catch handling and product quality. Therefore, the present strategic initiative is to put emphasis on a common goal of improving the quality of fish, in

order to establish and increase the value of trawl-captured fish.

The Center for Research-based Innovation in Sustainable fish capture and Processing technology (CRISP), will contribute to the establishment of live storage- and automatization systems in the processing line on board the trawling fleet.

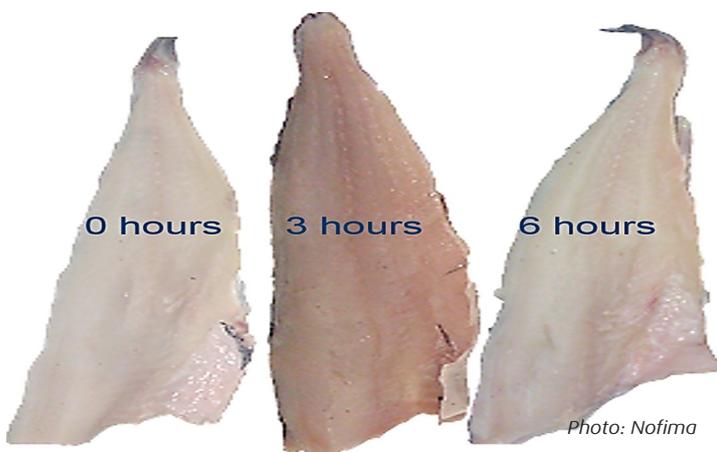
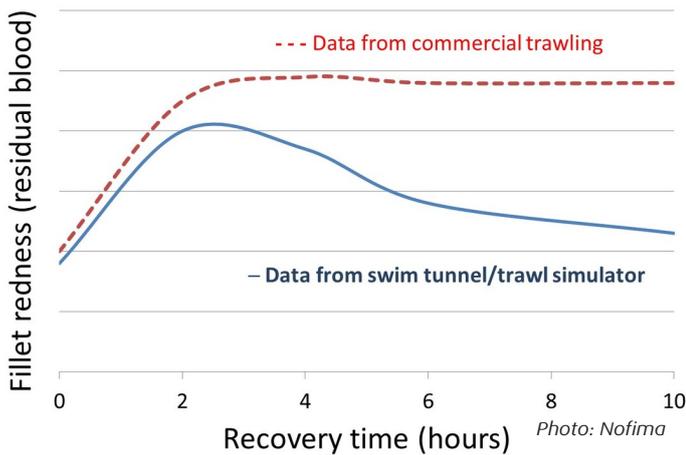
This is a necessary step to gain economic, safe, first-class stable quality and efficient fish processing. To ensure an effective and stable quality in the handling, as well as a viable production on board, this project has identified possible technology/equipment that can be used – as well as which ones need to be developed for

Capture and handling practices to optimize quality of trawl captured fish

the future processing on board trawlers.

Quality

The quality of the fish is strongly dependent on how the fish is handled post capture. Too few crew members, combined with high capture efficiency, limits the ability to produce high quality products.



Fish should be allowed to recuperate for at least 6 hours to secure good quality raw material.

The fish are exposed to a number of stressors during trawling – such as swimming to exhaustion, crowding in the trawl cod end, severe barotrauma and lack of controlled killing and bleeding. It is not unusual that large hauls of fish can be kept in

storage bins for hours before bleeding and gutting. Often, the last fish in the storage bin have been dead long before bleeding, and this leads to insufficient exsanguination and muscle discoloration.

A swim tunnel has been custom-made and serves as a trawl simulator, to provide an experimental setup for swimming trials with groups of large fish. This makes it possible to study the cumulative effect of swimming and crowding on the physiology and quality of fish in a controlled environment.

Several ship-owners are considering installing pumping facilities and live storage tanks onboard, when refurbishing old boats or building new ones.

Nevertheless, before this can be implemented onboard in trawlers today, it is of great importance to gain new knowledge partly to determine when and how the fish can be slaughtered and partly to understand the fish tolerance, fatigue, recovery, blood flow and why and where blood is in the body at any given time.

Written by: Stein Harris Olsen, Heidi Nilsen, Kjell Larssen, Ragnhild A Svalheim og Kjell Ø. Midling.

Contact



Stein Harris Olsen

Scientist
Phone: +47 77 62 90 85
Email: stein.olsen@nofima.no

Nofima carries out research and development for the fisheries, aquaculture and food industries.

Tel: +47 77 62 90 00 | post@nofima.no | www.nofima.no