

Post-trawling damage and mortality amongst brown shrimp (*Crangon crangon* L.) in the Flemish shrimp fishery

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The Flemish brown shrimp fisheries wish to diversify their offer by adding live brown shrimp (*Crangon crangon*) to their current product gamma. Until recently brown shrimp from Belgian fishing vessels have only been available as a cooked product that is being processed and boiled at sea. The shrimp is caught at night in a traditional manner using twin beam trawls with towing times that are typically one to two hours. The freshly caught live shrimp is mechanically sieved immediately after emptying the nets in order to separate it from unwanted by-catch. It is then cooked in seawater and stored on ice. This action is repeated after each tow till the break of dawn. The vessels then land their catch in the form of a pre-cooked shrimp in one of the Belgian fishing harbors after roughly twelve hours at sea.

In order to land live shrimp, sieved shrimp from the last tow are stored in shallow crates under atmospheric conditions. Brown shrimp can survive out of the water for many hours when kept under optimal conditions. However, research has revealed that the rotary sieves that are widely used to sort the catch can inflict a significant amount of damage to the shrimp, therefore reducing their ability to remain alive.

The shrimp's survival is compromised by both internal injuries and external wounds such as damage to the exoskeleton. In order to evaluate the survival rate amongst brown shrimp during and after handling on board recovery experiments were conducted where the shrimp were placed in tanks with natural seawater after landing.

The mortality amongst sieved shrimp may be as high as 90% when no care is taken to manipulate them accordingly, while a mortality as low as 20% is seen when great care is taken and the mechanical sieving step is replaced by manual sieving. In order to further develop the live brown shrimp as a new product in the Flemish fishery, every step during the early handling and sieving process must be executed following good handling practices to prevent damage and for live shrimp to be stored on board under optimal conditions.