

5.1.23 Fishing for food: simple changes in codend design improves the quality of fish products

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Fishing gears have negative impacts on seafood quality, especially on fish in the mixed trawl fishery targeting Nephrops (*Nephrops norvegicus*). In this fishery, which is worth about €80 millions in Denmark alone, the quality of fish and Nephrops can be significantly improved by simple gear changes. In this study, a vertically divided trawl codend was designed to separate fish from Nephrops during the fishing process by encourage fish to swim into the upper part by using a frame at the entrance of the lower part. Separate codends for fish and Nephrops provide the opportunity to selectively reduce small low-value fish, which will reduce catch weight and sorting time onboard the vessel. The upper and lower part of the codend consisted of 120 mm and 60 mm square mesh netting, respectively. For this vertically divided and a standard 90 mm diamond mesh codend, in which the catch was mixed, quality assessments were performed on the same batches of fish during three steps of the value chain: i) aboard the fishing vessel; ii) at the Fishermen's Collection Central, and iii) in the production plant. Four species of fish and fillets from fish caught in the upper part of the vertically divided codend were of significantly better quality for several of the assessed parameters

compared with those caught in the standard codend: The decrease in catch-related damages in the vertically divided codend is explained by little contact between fish and animals with hard or spiny surfaces due to successful separation of fish and Nephrops into the upper and lower parts of the codend, respectively, and by lower catch weight in the upper part compared with the standard codend. The decrease in damages may also improve quality indirectly by inflicting less stress to the fish and subsequently give better texture, which offers advantages such as pre-rigor filleting and fresher products for the market. Significant improvements in fish quality can potentially increase the catch value in nationally important fisheries.