

Square mesh panels in demersal trawls: does lateral positioning enhance fish contact probability?



Square mesh panels (SMPs) are often integrated into trawl sections ahead of diamond-mesh codends to improve release efficiency of undersized individuals of some species. Often, these release panels are integrated into the top panel of the trawl. This is particularly true for some mixed-trawl fisheries in western European Atlantic waters, where a diamond-mesh codend with a mesh size of only 70 mm can be applied, on the condition that an SMP with a mesh size of at least 100 mm is integrated into the upper panel of the trawl. The purpose of this SMP is to avoid catching undersized hake, for which the codend of 70 mm diamond mesh has been shown to have insufficient release potential. However, some studies have demonstrated this configuration to have poor release efficiency because most of the hake simply do not make contact with the SMP. Based on these poor results, we tested the release efficiency using 10 m long SMPs, integrated into the sides of the trawl in the last tapered section of the belly. The system is supplemented by a pentagon-shaped device, mounted in the belly to guide fish towards the SMPs. Based on the data collected we

quantified the contact probability, i.e. the fraction of individuals that, during their travel towards the codend, came into contact with the SMPs to be size selected by them. Analysis revealed that 62% of hake (*Merluccius merluccius*), 44% of four-spotted megrim (*Lepidorhombus boschii*), 51% of Norway lobster (*Nephrops norvegicus*), and 41% of blackmouth catshark (*Galeus melastomus*) made contact with the SMPs. Therefore, the contact probability estimated for side long escape panels (SLEP) by far exceeded that of SMPs integrated into the top of the gear. Based on these promising results, SLEP might be a potential tool for improving species and size selection also in other trawl fisheries where the traditional use of SMP's is not effective.

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