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Skirts on salmon production cages reduced salmon lice infestations without affecting fish welfare

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Abstract

Blocking infective salmon lice larvae, that typically aggregate near the surface, from entering sea cages has become a widely-adopted preventive strategy in salmon aquaculture. The most prevalent shielding technique is fitting a skirt around the upper part of the cage. However, limited scientific data is available on the effects skirts have on lice levels, water quality and fish welfare. The present study compares lice infestation levels on farmed Atlantic salmon, oxygen saturation levels and fish welfare scores between cages with and without 10 m deep skirts from May to September at a commercial farm. The effectiveness of skirts at reducing lice infestations varied during the observation period, but at the last sampling 80 % less lice were found on the fish in skirt cages compared to in standard cages. From early July and onwards, oxygen levels inside the skirts were reduced by 5 to 35 percentage points saturation compared to standard cages. However, the lowest oxygen value registered was still above 70 % oxygen saturation. No differences in fish welfare scores and mortality between treatments were observed. Under the presented conditions, we therefore conclude that the skirts effectively reduced lice levels

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