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## ARMOUR-PLATED NETS FOR THE SALMON FARMING INDUSTRY?



*'World's strongest fibre' to be used in trials*

*Material used in bullet resistant  
armour and cockpit doors of aeroplanes*

A new net material for Scotland's salmon farmers is being pioneered in Sutherland and the Western Isles and could play a major role in further improving performance on containment in the aquaculture industry.

The first in a series of trials is being hosted by Loch Duart Ltd at one of its main production sites in Badcall Bay, Scourie, under the auspices of a new industry-wide research and development project co-ordinated and part-funded by Scottish Salmon Producers' Organisation (SSPO).

A second experiment is also due to commence shortly, which will be conducted on the Isle of Harris by Marine Harvest Scotland. The total cost of the trials and commercial evaluations is over £100,000.

Other partners and funders in the project include the Scottish Government, fibre manufacturers DSM Dyneema, mesh material producer Badinotti and net manufacturer Boris Net Company Ltd.

The high strength, lightweight Dyneema fibre is to be used, which is up to 15 times stronger than quality steel on a weight for weight basis, and is described as the 'world's strongest fibre'.

Standard nets used in the aquaculture industry are mainly made from nylon or similar materials. Advances in technology have led to an approximate two-fold increase in the tensile strength of this new net material.

Invented by DSM, the material has a unique combination of properties and is used in applications including bullet resistant armour, cockpit doors of aeroplanes, racing sails, safety gloves for the metalworking industry and cables for tanker mooring.



With 14 new nets now in place and the first smolts (young fish) put to sea in April, Nick Joy, Managing Director of Loch Duart, said: “We are delighted to be contributing to this project both financially and by proving this material in the field. The strength of this netting should benefit our production in many ways. Our record on escapes has not matched our high ideals and this material could be the answer. It is reputed to be less prone to abrasion and inclined to resist the deposition of marine growth. We hope these benefits will also yield better growing conditions for our fish.”

Alan Sutherland, Managing Director of Marine Harvest Scotland added: “This is an extremely important project to be involved in and one the salmon farming industry and stakeholders will be watching closely. The benefits of using this type of material appear to be very clear and we are hopeful that its application will greatly assist in improving the secure containment of our stocks.”



The net trials are part of the industry’s ‘Demonstration Project’ which is a programme of research and development initiatives. SSPO Chief Executive Sid Patten said: “This project is one part of a much wider strategy created to demonstrate the industry’s commitment to further improving its performance on containment.

“More than twice as expensive as conventional nets, this represents a significant investment to investigate the potential effectiveness of the novel net material. An evaluation of suitability and commercial viability will be carried out over a full production cycle and disseminated to the whole of the industry,” added Patten.

Welcoming the announcement, Andrew Wallace, Managing Director of the Rivers and Fisheries Trusts of Scotland and Association of Salmon Fishery Boards, said: "High standards of containment of farmed salmon are important to fish farmers for obvious business reasons but also to wild fisheries to avoid problems associated with hybridisation with wild stocks.

"It is extremely encouraging to see such a significant investment in this issue and pioneering new technology to address the problem. We look forward to working with the industry on this project and to seeing the results," he added.

**Notes to editors:**

1. The overwhelming majority of salmon farms have never experienced a breach of containment. During the last two years over 70million smolts (young fish) were put to sea. In 2007 the breaches of containment where salmon are known to have escaped represented less than 0.2% of the total amount of farmed salmon in Scottish waters.
2. A recent analysis of the causes of reported breaches of containment in 2006 in Scottish aquaculture revealed that an estimated 35% of incidents were the direct result of predation (principally seal attack).
3. The performance of the Dyneema material will be assessed for a number of factors through one complete marine phase production cycle, which is typically two years. Although principally an assessment of the functional capability, the performance of the stock held in the new nets will be assessed for several parameters and compared with salmon produced using the current standard system of nets.
4. Dyneema is an ultra strong polyethylene fibre, which floats on water and is extremely durable and resistant to moisture, UV light and chemicals. It is an important component in ropes, cables and nets in the fishing, shipping and offshore industries. Further information on DSM Dyneema is available at [www.dyneema.com](http://www.dyneema.com) and [www.asaferplacetogrow.com](http://www.asaferplacetogrow.com).
5. An international company, Boris Nets specialises in the design and manufacture of nets and netting support systems for various markets including the aquaculture, fishing and construction industries. During trials in the bream farming industry, where the fish are known to eat the nets, the Dyneema fibre manufactured by Boris Nets have proven to be of a much higher resistance. For further information, visit <http://www.borisnet.co.uk/>.

6. Loch Duart Ltd is an independent, Scottish-owned salmon producer based in Sutherland. Loch Duart employs 60 people and produces 3,600 tonnes of salmon annually. Customers include leading restaurants and retailers at home and abroad. Loch Duart has a number of unique farming methods including low density farming, full-year fallowing, swim-throughs and sustainable feed to ensure lean, fit fish. It was the first fish farm worldwide to achieve RSPCA Freedom Food approval, and is managed on the belief that welfare and taste are inextricably linked.
  
7. Marine Harvest (Scotland) Ltd employs 360 staff across farming, processing, distribution and sales activities. The business currently produces 32,000 tonnes of farmed Atlantic salmon per annum. With operations along the west coast of Scotland and on the Western Isles, Marine Harvest (Scotland) Ltd is one of the biggest producers of high-quality Scottish salmon.
  
8. Scottish Salmon Producers' Organisation aims to represent salmon farming in regulatory and political matters. Industry members from mainland Scotland, Western Isles, Orkney and Shetland have joined together to ensure that the industry's contribution to Scotland's social, economic and commercial landscape is promoted, recognised and rewarded by its stakeholders.

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For further information, contact Ken Hughes, Scottish Salmon Producers' Organisation, 01738 587006 or 07974 173 739.