Northwest Atlantic Fisheries Organization

Serial No. N4102 **NAFO SCR Doc. 99/43**

SCIENTIFIC COUNCIL MEETING – JUNE 1999

Preliminary Results from an Experiment with Shrimp Trawl Fitted with a Size Selective Grid

Sørin Havmand[1] and Kristian Zachariassen[2]

[1] Vónin trawlmakers, Álaker, FO-100 Tórshavn, Faroe Islands.
[2] Fisheries Laboratory of the Faroes, P.O.Box 3051, FO-110 Tórshavn, Faroe Islands

Introduction

Grid sorting in shrimp trawling has been a standard procedure in the last decade. The main aim has been to reduce by-catches of non-target fish species, mainly undersized redfish. By introducing a sorting grid that reduces catches of small sized shrimp it is possible to protect shrimp recruits while at the same time increase the value of the catches.

The Nordic Council of Ministers has funded experiments on grid sorting of shrimps as has the Canadian Government. Faroese commercial shrimp trawlers have conducted experiments with grids that reduce the catches of small shrimp. Though some success has been reported such systems are not yet in general use. In May 1999 an experiment with a size sorting grid system was conducted in a co-operation between the Faroese trawlmaker company Vónin, the Canadian commercial shrimp trawler Atlantic Enterprise and the Fishery Laboratory of the Faroes.

Material and Methods

The experiment was made on the Canadian trawler Atlantic Enterprise (68 m, 5000 hp), a stern trawler with two trawl lanes on the deck which makes the vessel suitable for alternate trawl haul experiments. The experiments were carried out with two originally identical “Cosmos 3000 meshes” shrimp trawls fitted with a fish-sorting grid. The size-sorting grid was fitted on one trawl and an unaltered trawl was used for comparison. The dimensions of the frame were 2.50 m by 1.30 m and bar spacing 12, 13 or 15 mm. The general rigging is shown Fig. 4. The trawl doors are “Perfect” trawl doors (11m², 4200 kg). During the experiment the alternate trawl haul method was used. Seven different designs were tried out.

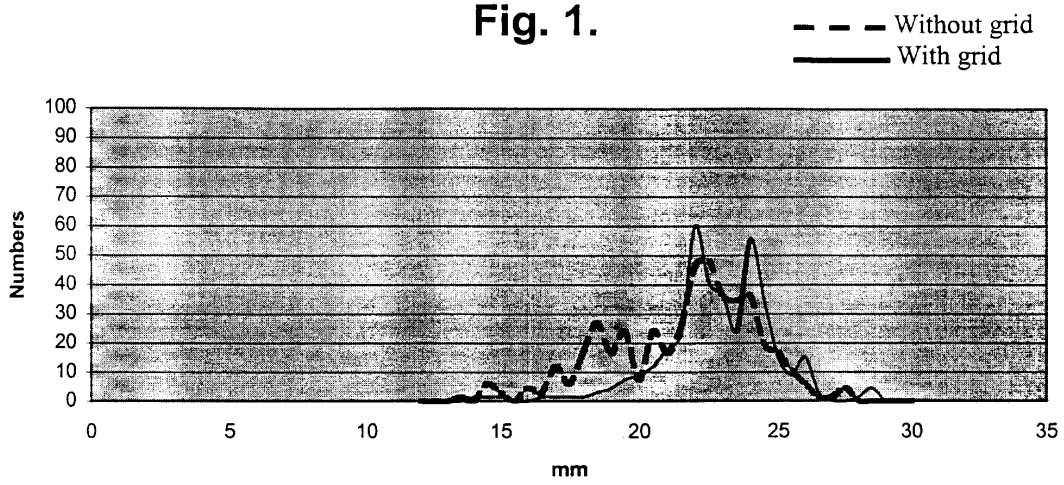
Results and Discussion

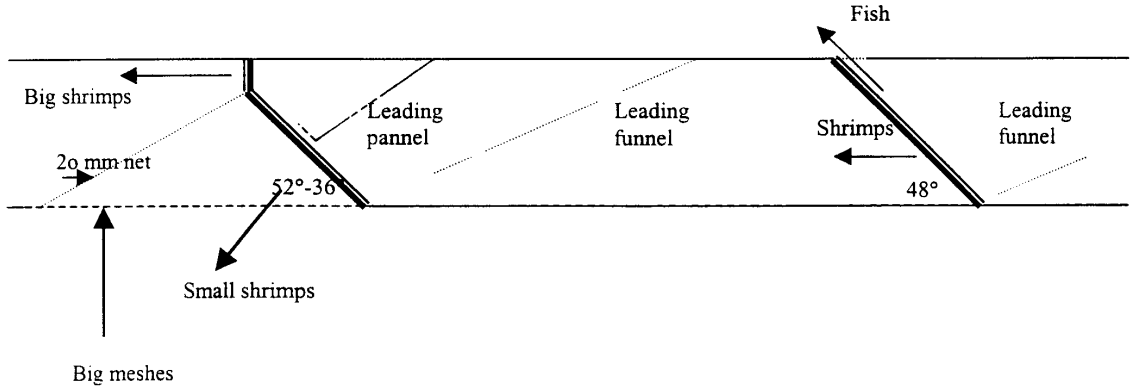
The results of experiments with the three most effective designs are shown in Figs. 1, 2 and 3. The results indicate a considerable reduction in the catch of small sized shrimps when the size-sorting grid was fitted in the trawl compared to the ordinary trawl. The number of trawl hauls with each design are too few too draw a firm conclusion, however, the results clearly indicate the possibilities of the size-sorting grid system, which in addition to enhancing the value of a given qouta also would be of great value in stock conservation. Further experiments with this type of grid are planned and based on the results so far some modifications will be made to the trawl design especially with regard to grid angle and the design of the grid. Including video recording of the experiment would help in assessing the working and behaviour of the size-sorting grid and further the process of constructing an optimal design.

Acknowledgement

We would like to thank Mr. Gerald Brothers who made it possible for the ship to get a permission to carry out the experiments. The co-operation with the captain, the crew and the observer was brilliant. We got all the help we asked for from them.

Fig. 1.





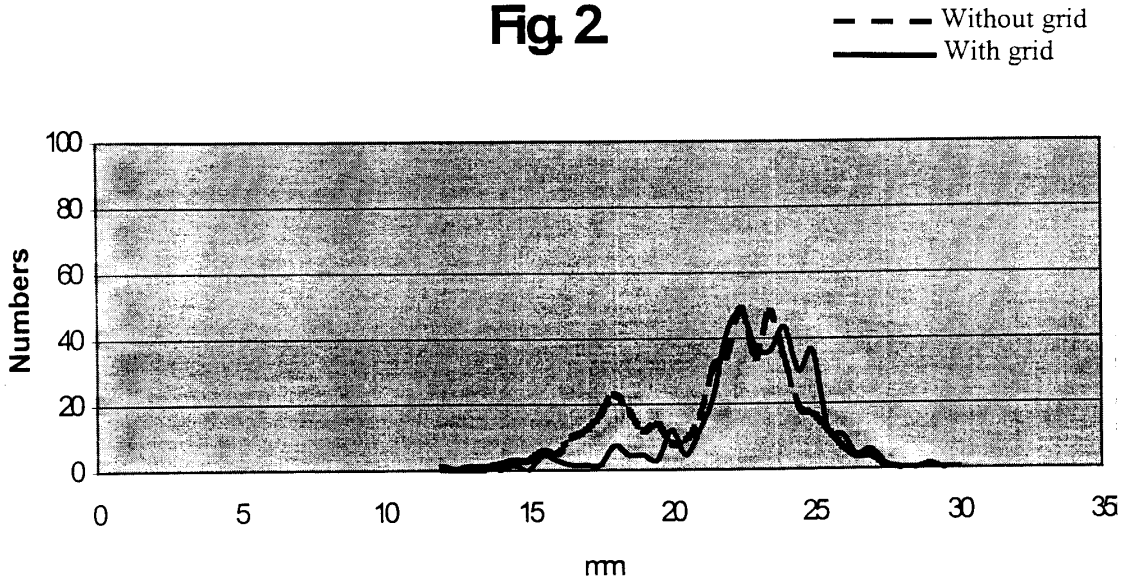
Distance between the bars: 15 mm.

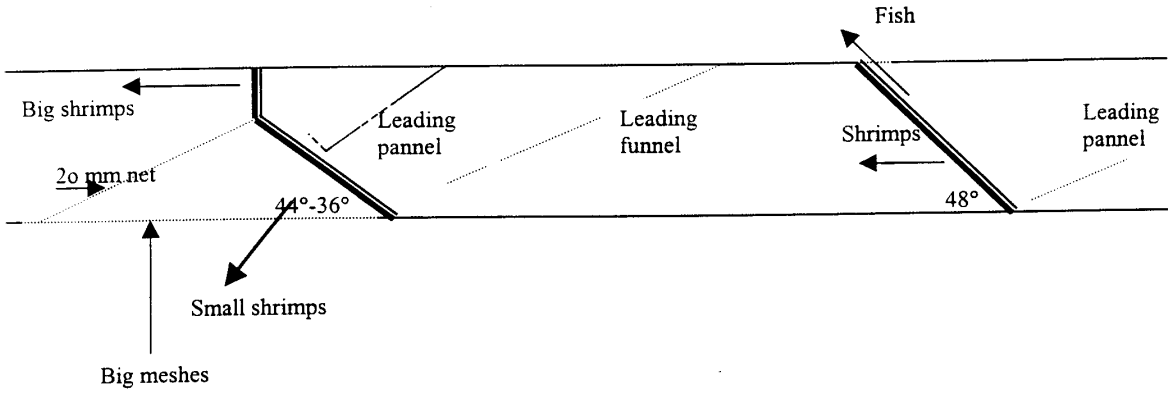
Grid angle: 52° - 36°.

No. of haul without sizesorting grid: 2.

No. Of haul with sizesorting grid: 2.

Fig. 2



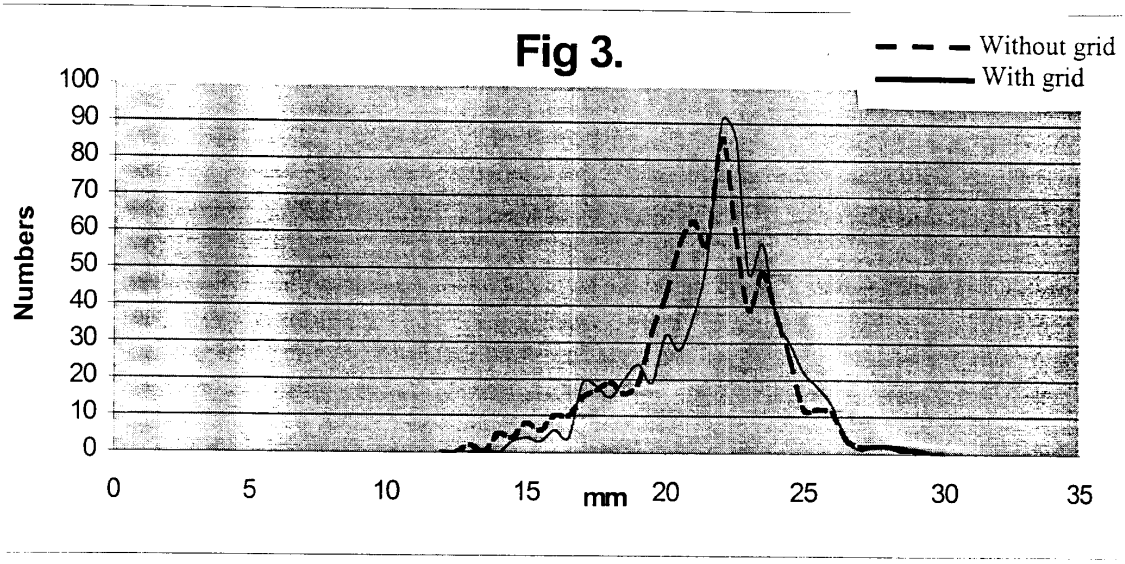


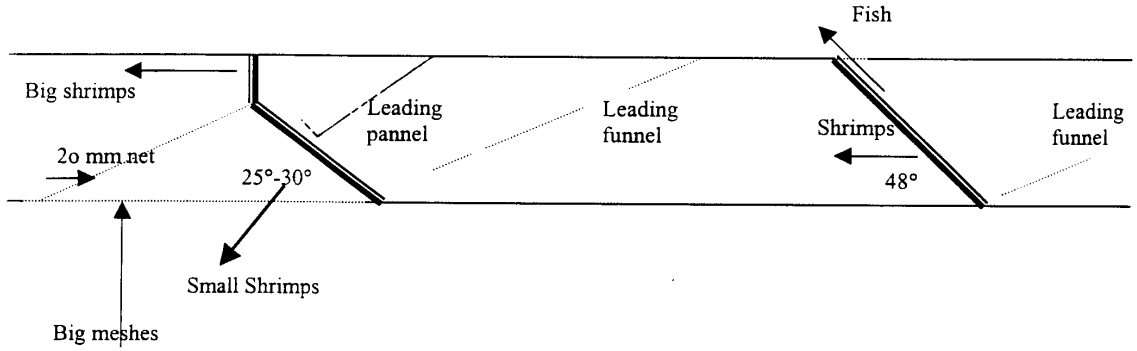
Distance between the bars: 15 mm.

Grid angle: 44° - 36°

No. of haul without sizesorting grid: 2.

No. Of haul with sizesorting grid: 2.





Distance between the bars: 13 mm

Grid angle: 25° - 30°

No. of haul without sizesorting grid: 3.

No. Of haul with sizesorting grid: 3.

FIGURE 4. General rigging.