Bord Iascaigh Mhara
Irish Sea Fisheries Board

Summary of MFV Mater Dei Trials in the Irish Sea

August 2013

Introduction

In June 2012 a number of technical measures were introduced by the Commission in the Celtic Sea area through Regulation (EU) 737/2012 which came into force in August 2012. The main objectives for the introduction of these measures were to protect juvenile whiting and haddock stocks. Many of the *Nephrops* vessels voiced their concerns that these measures have increased the workload for their crew as they would normally work a different gear configuration in the Irish Sea. This resulted in having to take off the Swedish grid and replace it with the 110mm Square Mesh Panel (SMP) when moving from the Irish Sea and going to the Smalls and vice versa when returning to fish in the Irish Sea. It was suggested to fishermen that they could attach both the Swedish grid and the SMP aft of the Swedish grid and this would leave their vessels compliant with regulations in both the Irish And Celtic Seas. The majority of fishermen weren't interested in this as this would mean losing their by-catch of fish in the Celtic Sea which is an essential component of their earnings. The fishermen who were interested were concerned that the turbulence caused as a result of having the grid incorporated in the gear would blow the fish out through the SMP positioned aft of the Swedish grid. Alternatively positioning the SMP immediately aft of the grid may have the opposite effect of increasing the water-flow through the grid and could result in a better catch. It was agreed by the Industry Science Partnership Group that BIM would carry out a short catch comparison trial to assess the impacts of incorporating a SMP aft of the Swedish grid.

Interestingly, Swedish *Nephrops* fishermen (from Grebbestad) often cut a hole in the top sheet to the rear of their grid in order to allow large *Nephrops* that have exited via the grid to reenter the codend. However, their fishery concentrates on large whole prawns and little if any tailing takes place.

Methods

The catch comparison method was used to assess the impact of incorporating the square mesh panel aft of the Swedish Grid.

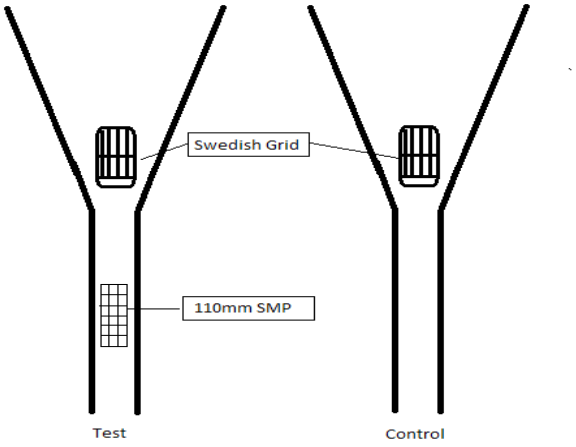


Fig 1 Net Diagram

The standard gear that the MFV Mater Dei was using was a 3m² SMP forward of the Swedish Grid and a 70mm cod end of double 4mm twine with a 160mm strengthening bag.

This was compared with the test gear which also had a 3m² SMP forward of the Swedish Grid and a 70mm cod end with double 4mm twine with a 160mm strengthening bag and included the Celtic Sea 110mm Panel positioned between the Swedish grid and codend at 9-12 m (see Fig.1).

It was slightly more complicated to carry out the comparison as the vessel was quad-rigging at the time of the trials. The two inside nets were catching equal amounts of *Nephrops* while the two outside nets were also catching equal amounts but more than the two inside nets. For the duration of the trials the starboard inside net was used as a test gear and the port inside net was used as the control gear.

Trials

The trials were carried out on board the 21m stern trawler the MFV Mater Dei based in Skerries. In total 4 days trials were carried out from the 2nd-5th August 2013 and 9 hauls were sampled.

The Mater Dei was using the Quad Rig which consisted of 4 18ftm identical nets with a fishing circumference of 380 x 80mm. The footrope was a grass rope, the top wings were constructed of 150mm mesh and the bottom wings constructed of 80mm mesh.

Figure 2 MFV Mater Dei

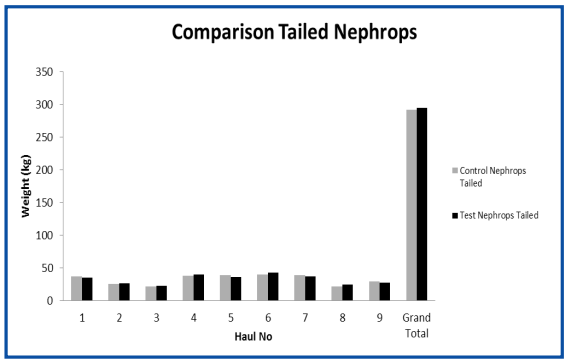
During the trials it was obvious that there was very little fish by-catch through the *Nephrops*. This is unlikely to be a consequence of having the grids incorporated as frequently *Nephrops* catches during the summer are not mixed with high by-catches of fish.

Figure 3 Area Fished (VIIa)

Bulk catches in the inner nets (Control and test) were consistently equal throughout the trials. As the *Nephrops* were sorted by the crewmen the catches from the test net were kept separate so that the overall weights of tailed and whole prawns could be compared in both the control and test gear. There were no individual prawns measured. As the catch was being sorted the fish by catch was picked, sorted and measured. As already stated fish by-catch was minimal during the trials.

Results

As always these trials were carried out over a short period of time and to ensure a more statistically robust dataset additional hauls should be carried out. The summary results show that there is little or no difference in catches of *Nephrops* between the control gear and test gear. The following graph shows the comparison between tailed and whole *Nephrops*. Another objective of the trials was to ascertain the effectiveness of having an SMP aft of the grid and whether or not the incorporation of a Swedish grid should supersede the SMP regulations. It was impossible to establish the effect the grid or SMP had on Gadoids during the trials as there were very little caught.



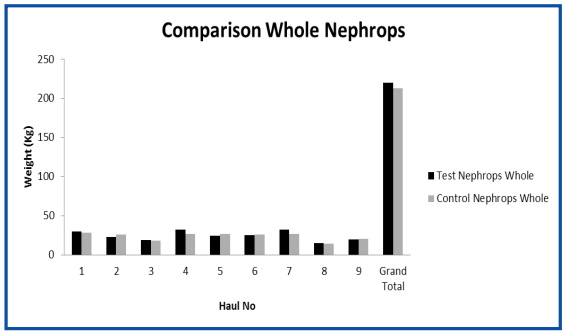


Figure 4 Comparison of Tailed Nephrops

Discussion

These trials were carried out with the 110mm SMP aft of the Swedish grid and showed that there are no significant losses of *Nephrops*. As there was little fish on the ground during the trials it was difficult to establish whether there is any advantage in having both a SMP and a Swedish grid incorporated into the gear at the same time, or should the Swedish grid supersede the SMP.

Conclusions

1. **No significant losses of *Nephrops***
2. **Minimal fish by-catch discards**
3. **As expected small amounts of fish by-catch landings < 1% mainly consisting of witches**