



**MINOUW**

# Case study results

## 1.4 - Sea bottom trawl, Catalonia

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RESEARCH & INNOVATION

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## SUMMARY

In the Catalan Sea, experiments were performed with artificial lights (blue and green) deployed on Norway lobster trawl fishery. A decrease of biomass percentage of both commercial and discarded fraction has been detected when comparing control hauls with hauls with lights. Number of experimental hauls must be carried out to statistically test the results and determine if there is a real effective effect.

## CASE STUDY RESULTS

### Type of intervention

To test the use of lights in trawl Fisheries targeting *Nephrops norvegicus*

### Aim of the experiment

To establish whether the use of the lights to traditional bottom trawlers improves species selectivity and reduces regulated discards and general unwanted catches

### Main activities carried out

Experimental fishing trials were conducted to assess the possible reduction in discards. The bottom trawl used was the commercial gear used in the CS 1.4 with 40 mm mesh size for nephrops target species métier.

The experiments consisted in deploying different hauls: using no light as control fishery, as routinely used by local fishers, hauls using one with green lights and other with blue lights.

The hauls were an average duration of 2 hours and deployed at the same depth approximate 360 m.

Catches were identified on the three categorized fractions: commercial, regulated discards and general unwanted species. Differences in percentages in the standardized (g/hour) catches of the three fractions were assessed.

General statistics among the three different configurations (control-no light, blue light and green light) were not possible due the few experimental hauls deployed.

### Main result

- The experimental hauls with blue and green lights had a no significant increase in commercial catch rates of nephrops
- When compare the three hauls by a MDS analysis differences on total catches

were observed, even more evident was observed when only regulated discard species were compared

The use of blue and green lights showed a decrease of total biomass catch, significant between control and green light and between blue and green and corresponds to a decrease of the three fractions: commercial, regulated discards and general unwanted captures.

Furthermore, the effect of blue light on discard regulated showed a significant biomass reduction compared with control biomass. Green light evidences no significant differences

The general unwanted catches has no differences between control and lights

In general, a biomass decrease in g/h of regulated discard of Norway lobster, greater forkbeard and blue whiting was observed when compared percentages of control biomass (6%, 3%, 7%) with the biomass with deployment of blue light (5%, 0.5%, 1%) respectively. Nevertheless, with green light the percentage of biomass of Norway lobster discarded increased.

### **Discussion of the results**

The analyses of the use of blue and green lights in the case of the nephrops métier showed a general decrease of both commercial and discard fraction in percentage. This result is not surprising since it is the same species although the discarded individuals are of smaller size.

Our results are very preliminary and due the scarce number of hauls with each color light a statistical analysis is not possible. With the present experiment is not possible to clarify the possible benefits regarding discard problem.

Nevertheless, if we consider that the few results analysed offer some images of benefits when lights were used regarding the less capture of MCRS species and unwanted species, it is important to consider that it is essential to deploy more experiments with bottom trawl using more replicates of blue and green lights.

### **How practical is it for a fisherman to implement this improvement, technically and financially?**

The use of the lights on the bottom trawl gear is a relatively inexpensive and easy modification to use.

### **Is there sufficient evidence to support wider adoption of the method/technology?**

The experiment with blue and green light is actually very preliminary, but these first results can be optimistic regarding the possibility to diminish the regulated discard and in general the bottom ecological impact.

Nevertheless, more experimental hauls must be carried out to test the results and determine the real effective effect.

## **CONCLUSION**

Our very preliminary experiment is not enough to clarify if it is a good solution to decrease overall discards, as well as unwanted catches on the nephrops fishery under the remit of the Landings Obligation.

## **ADDITIONAL RELEVANT RESOURCES OR LINKS**

EU Common Fisheries Policy (CFP) Reform: [https://ec.europa.eu/fisheries/cfp\\_en](https://ec.europa.eu/fisheries/cfp_en)

International Guidelines on Bycatch Management and Reduction of Discards:

<http://www.fao.org/fishery/nems/40157/en>

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