

ENHANCING MUSSEL SEED SUPPLY

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Introduction

The Netherlands is the largest producer of blue mussels *Mytilus edulis* in Europe (Smaal 2001). Annual mussel production can be as high as 100×10^6 kg. The raw material for culturing mussels (*Mytilus edulis*) is collected in the wild. The so-called seed is sowed on bottom plots to grow to market size. The natural availability of mussel seed shows strong, unpredictable, fluctuations. A year with a low supply of mussel seed results in low mussel landings a few years later. For an optimal business it is indispensable to have a continuous supply of high-grade seed. In 2000, the Netherlands Institute for Fisheries Research started a project to study the use of spat collectors to enhance the supply of seed for bottom culture of mussels. Results of year 1 of the project are described in Kamermans et al. (2002). Results of the entire project (year 1-3) are presented here.

Materials and methods

Several experiments were carried out to enhance the supply of mussel seed. Seed collectors were tested on the bottom and suspended in the water. This was done in intertidal and in subtidal areas. The effectiveness of different types of ropes, net, and empty shells was compared. Collector ropes were tested suspended vertically in the water column. In addition, different substrates were attached to frames that were placed horizontally on intertidal and subtidal mussel culture plots. And finally empty shells of mussels and trough shells were sowed on bottom plots. The collector material was installed in early May and harvested in August or October. Number, size, weight of spat was recorded. For the collector ropes a fast harvest method was developed by treating the ropes in a brushing machine. The performance of collector seed was compared with that of wild seed by sowing both types of seed on bottom plots next to each other.

Results

Results show that the use of collector ropes in subtidal areas is the most reliable method to collect substantial amounts of mussel seed. Yields of up to 7-11 kg seed (or 8000-5000 individuals) per meter of rope were reached (Fig. 1). The number of mussels per meter was higher in August, but the kg per meter was higher in October. The yields varied among locations and years, which calls for conservative calculations when trying to scale the production up to commercial size. Survival of collector seed was lower than for wild seed, but initial size and the growth rate was higher.

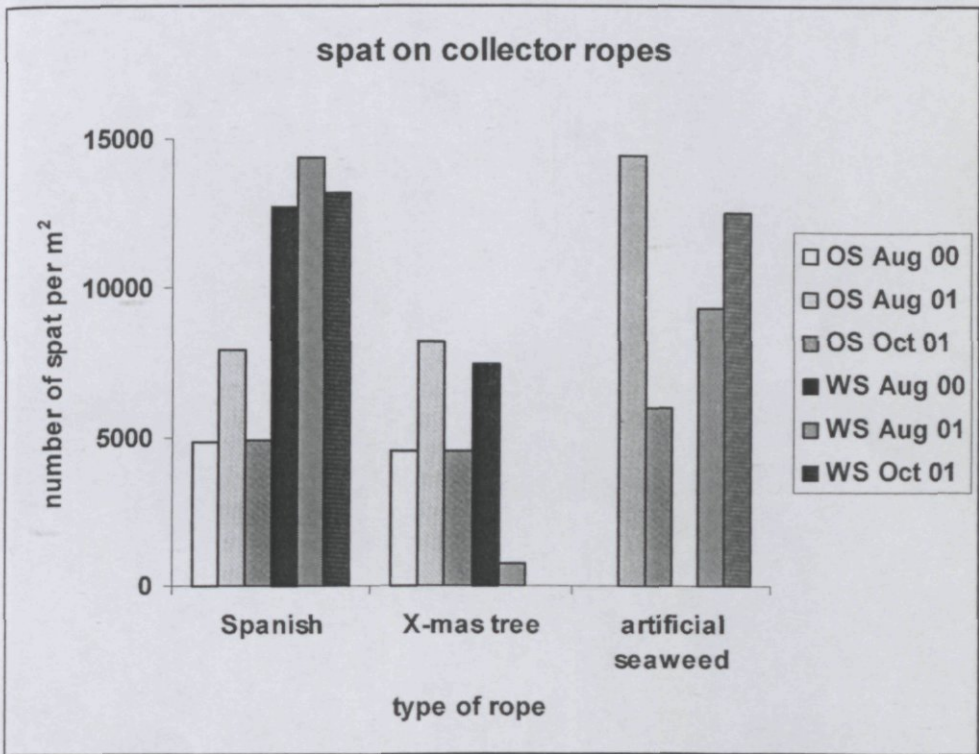


Fig. 1. Number of spat per meter collector rope on two test locations in the Netherlands (OS = Oosterschelde estuary and WS = Wadden Sea) and at different harvesting times.

Discussion

Spatfall was best on suspended ropes from Spain in the Wadden Sea. When considering the material costs, cheaper X-mas tree ropes can be a good alternative. Collector seed can be an important addition to the catch from wild beds. Lows in seed production can thus be avoided. This will eventually result in a more regular supply of mussels for the market.

Reference

- Kamermans, P., E. Brummelhuis & A. Smaal, 2002. Use of spat collectors to enhance supply of seed for bottom culture of blue mussels (*Mytilus edulis*) in the Netherlands. *World Aquaculture* 33 (3): 12-15.
- Smaal, A.C, 2001. European mussel cultivation along the Atlantic coast – production status, problems and perspectives. *Hydrobiologia* 484: 89-98.

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