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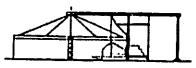
A STRIPPING METHOD FOR ATLANTIC HALIBUT (HIPPOGLOSSUS HIPPOGLOSSUS L)



by

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ABSTRACT.

A stripping-board was built and tested on a broodstock of halibut ranging from 8 to 150 kg body weight. The smooth surface of the neophrene mattress minimized the loss of mucus and reduced the stripping stress considerably.

The electric tackle eliminated the heavy lifting of the animals and improved the working conditions.

INTRODUCTION.

Rearing experiments of atlantic halibut in Norway started on a small scale in 1974(Solemdal et. al.1974). In 1980 the first two artificially reared larvae reached bottomsettled fry stage in experiments carried out at the State Biological Station, Flødevigen (Blaxter et.al.1983). In 1986 a few hundred juveniles were produced in Norwegian Research institutes (Berg & Øiestad 1986,Rabben et.al.1986) and further progress have been achieved in 1987 (Berg et.al. 1987, Pitman et.al.1987).

All experiments the first years were based on eggs and milt from newly caught fish on the spawning grounds. Both quality as well as quantity were highly unsatisfactory and the lack of stable breeders was a severe obstacle to further development and progress in the cultivation experiments.

Since 1984 broodstocks of halibut have been established and the supply of gamets have improved substantially the last two years.

Stripping of this multiple spawning species is to-day the dominant method to achieve eggs. Natural spawning is investigated, and the first spawns have already taken place in a large basin this year. This labour-saving method will need to be further developed to obtain large volumes of fertilized eggs with a minimum of human effort. Similar systems have been developed for the cod, gadus morhua (Huse & Jensen 1983).

Observed differences in growth and general performance in captivity between individual juvenile halibut are, however, understood as very promising for a selective breeding program on the species.

Stripping of individual fish is necessary in order to do such selective breeding experiments, and will consequently be the appropriate method at the research institutions involved in the domestication process of atlantic halibut.

The arrangement for easy stripping presented in this report made it possible to strip each female every 2-4 days in accordance with their individual ovulatory rhytms.

SYSTEM DESCRIPTION.

The stripping arrangement is shown in figs. 1 and 2. The board is made of a 2,20 x 1 m aluminium plate covered with a 3cm neophrene-rubber mattress. The board is hindged to a balanced rig which is hung in an electric tackle from a steel girder.

The broodstock were kept in a covered tank and protected from day-light.

GENERAL PROCEDURE.

The board is lowered into the water to approx. 40 cm above the bottom. By further lowering the hindge will make the board form an inclined plane to the bottom. Two persons (with waders) must be in the tank and the water depth is kept constant at approx. 80 cm throughout the whole stripping season, thus avoiding repeated changes of level which is believed to have been a major cause of stress the previous years.

The female, which according to her ovulatory rhytm is ready for stripping, is found and led gently towards the board. Normally she will follow quite willingly and slide on to the very smooth surface of the neophrene mattress. The board is lifted in 2-3 seconds above the water surface and the fish is ready for stripping (or merely an examination).

The board should be lifted to at least 20 cm above water, giving room for a dry bucket to collect the running eggs. Alternatively the eggs could be stripped directly into a bucket containing a thin sperm suspension in filtered seawater.

After stripping is completed, the board is lowered and the fish will swim off.

CONCLUSIONS.

In either of these crucial stages of oogenesis: oogonial proliferation and first growth phase of oocytes, endogenous and exogeneous vitellogenesis or final oocyte maturation and ovulation, disturbance will influence both the quality and quantity of eggs. Stripping of a multiple spawner is no doubt a serious stressfactor. Compared to the results from the 1985 and 1986 stripping seasons, it is quite clear that the total stress caused by stripping is significantly reduced by using the presented method.

The working conditions for the involved personnel are improved as well. The operation takes only a few minutes, requires two persons (at minimum) and the same female can be stripped 10-15 times without any heavy lifting and with a minimum of stress to the fish. It is today possible to check very often if the fish is ready and thus reduce losses of eggs in uncontrolled releases between strippings.

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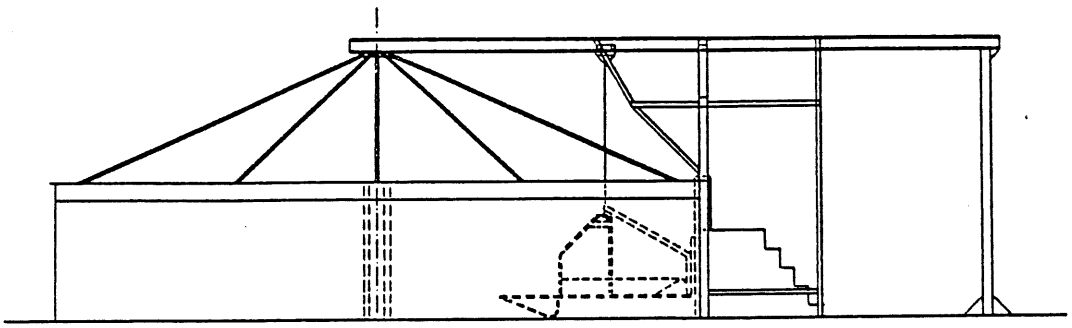

Fig. 1. Schematic of stripping arrangement in broodstock tank.

A.

B.

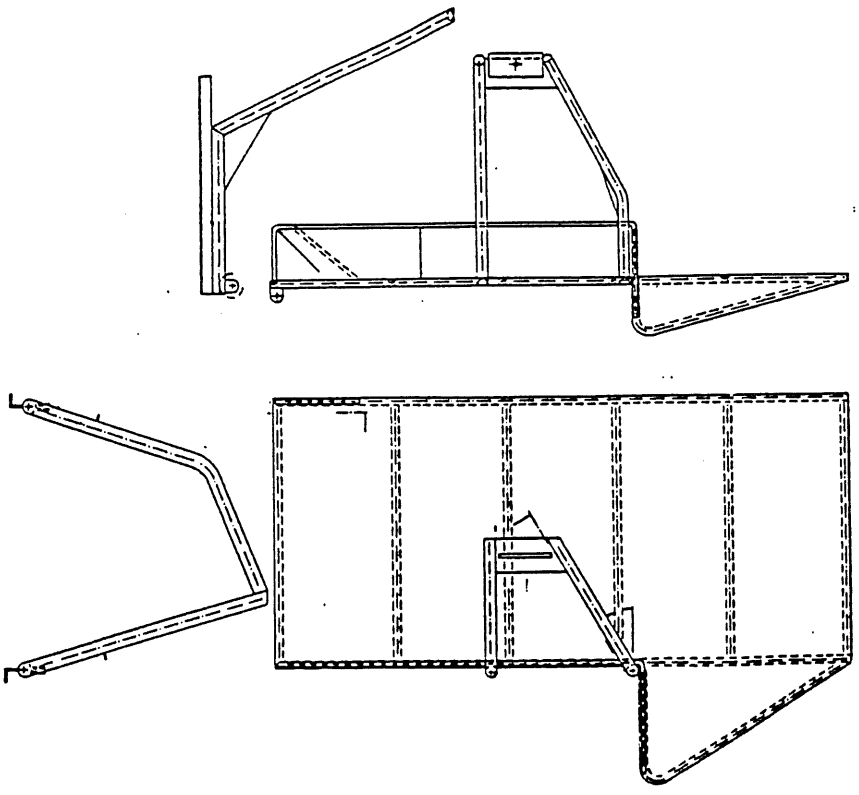

Fig. 2. Stripping board. A: Side view, B: Top view