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Selectivity experiments with a cod-end made of polypropylene splitfiber

by

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Introduction

Covered cod-ends selectivity experiments with single cod-ends made of polypropylene have been carried out by Holden (1966 a) and Olsen (1966) in Barents Sea and by Holden (1966 b) near Bear Island. The cod-ends used were made of double ulstron, multifilament. A Norwegian firm has now introduced a polypropylene splitfiber, marketed as Norsetwine. Some covered selectivity experiments with cod-ends made of double braided Norsetwine, undipped and twisted were made by G.O.Sars the 16-19 September 1966 along the Finnmark coast from Nordkyn to Vardø. A small Granton trawl was used, and the fishing took place in the area inside the 6 nautical miles fishing border, between a depth of 45 to 300 m. The trawling speed was about 2,5 miles per hour and the trawling time per haul was as an average 80 minutes.

Cod and haddock made up the main part of the catches. However, coalfish were caught in one haul inside the 4 nautical miles border off Nordkyn.

Cod

The selection factor for cod in the present material is estimated to 3,68 (Table 1 and Fig. 1), while the figures given by Holden (1966 a and b) and Olsen (1966) is 4,0-4,1 and 3,5 respectively. Holden mentioned that the high selection factor in his material may have been caused by bad condition of the fish, and Olsen said that the experiments might have been based by the great quantities of sponges caught.

Haddock

The selection factor for haddock was estimated to 3,44 (Table 1 and Fig. 1) which corresponds with the selection factor of 3,4 given by Olsen (1966), while the figure given by Holden (1966 a and b) is 3,6.

Coalfish

The North Western Working Group (Anon 1967) assumed a selection factor for Iceland and Faroe coalfish of 3,5 and 3,6 respectively, while the figure estimated for the present material is 3,79 (Table 1 and Fig. 2). However, it should be born in mind that the number of fish in the selection range is small in the present material.

Discussion

Our knowledge of the selectivity of cod-ends made of polypropylene split-fiber is not extensive. However, the present experiments indicate that the selectivity of polypropylene splitfiber is of the same order as for polypropylene multifilament.

References

- Anon, 1967 Report of the North-Western Working Group.
Coop.Res.Rep.Copenh. 1966 (Ser.B): 12-58
- Holden, M.J. 1966 Comparison of the selection factors for cod in the
Barents Sea, using manila and polypropylene (ulstron)
cod-ends. Ibid. 1965: 143-148
- " " 1966b Comparison of the selectivity of manila and poly-
propylene (ulstron cod-ends) Ibid. 1965: 156-163
- Olsen, S. 1966 Norwegian mesh selection experiments in 1963 and
1964. Ibid. 1965: 164-168
- " " " Selection experiments with a courlene cod-end in the
Barents Sea. Ibid. 1963: 34-37

Table 1. Records of experiments.

1. Ship - R/V "G.O. Sars"
2. Gear - standard "Small Granton" trawl
3. Date - 16-19 September 1967
4. Time - during the day
5. Locality - East-Finnmark coast
6. Depth range - 45-300 m
7. Cod-end material - Polypropylene splitfiber, double braided (Norsetwine)
8. Mesh gauge - ICES
9. Mesh size - mean 136 mm
range 123-141 mm
no. of measurements 100
10. Experimental method - covered cod-end
11. Cover - ICES specification, mesh size 30 mm
12. Species - cod, haddock and coalfish
13. 50 % retention length - cod 50.0
haddock 46.0
coalfish 51.5
14. Selection factor - cod 3.68
haddock 3.44
coalfish 3.79
15. 25-75 % selection range - cod 44.6 to 53.8
haddock 42.6 to 49.8
coalfish 47.4 to 56.2
16. No. of fish in selection range - cod-end cod 376 haddock 2746 coalf. 89
cover cod 335 " 3614 " 144
17. Average weight (quantity) of all fish per haul - cod-end 736, cover 299kg
18. Other catch - small quantities of other species
19. No. of hauls - cod 10, haddock 10, coalfish 1.
20. Average duration of haul 1 1/3 hours
21. Towing speed - 3.5 knots

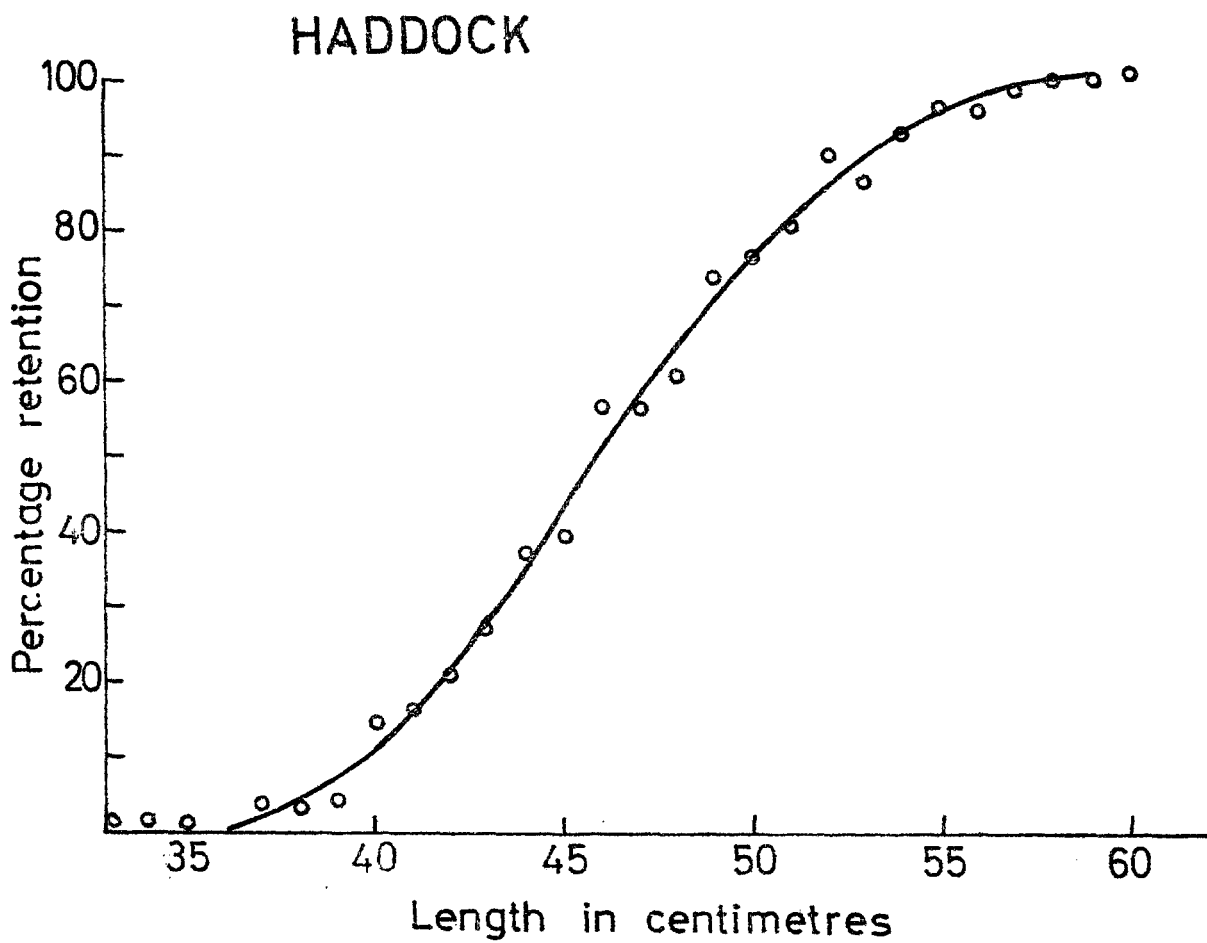
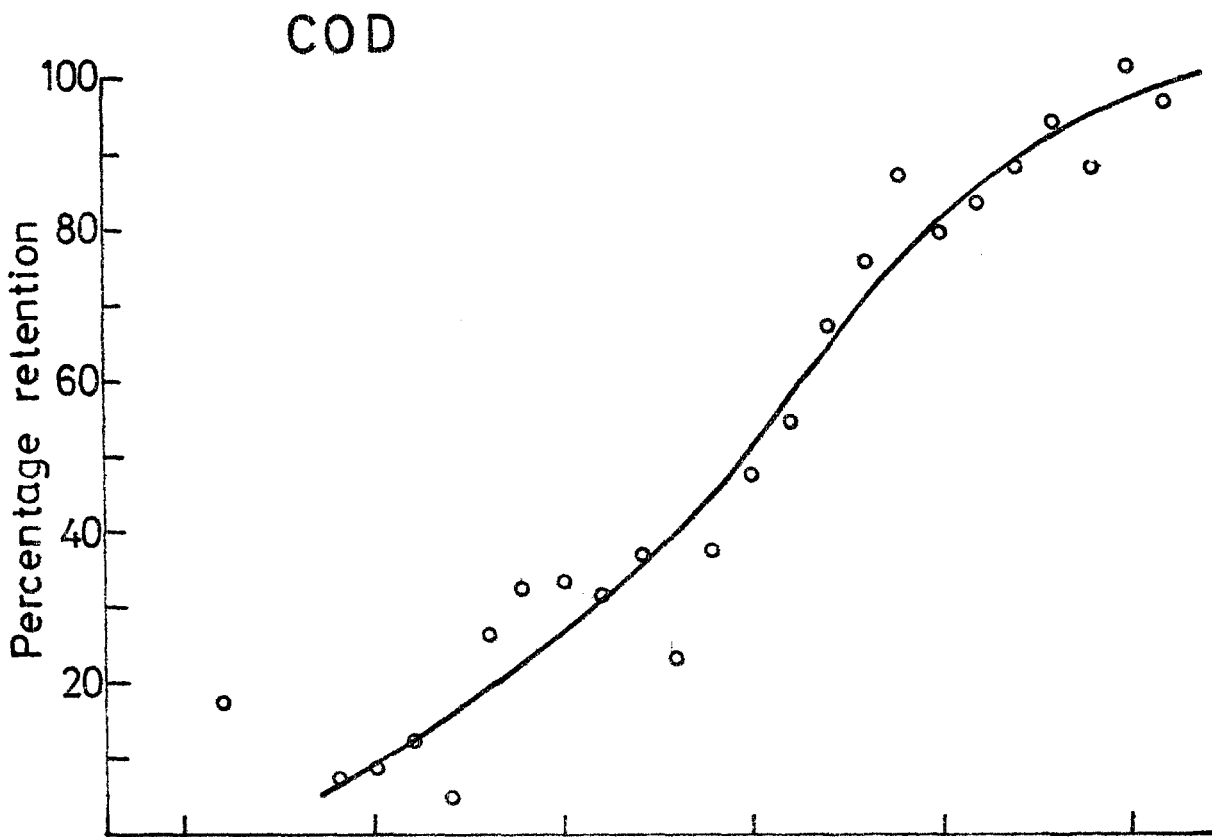


Figure 1. Selection curves for cod and haddock.

COALFISH

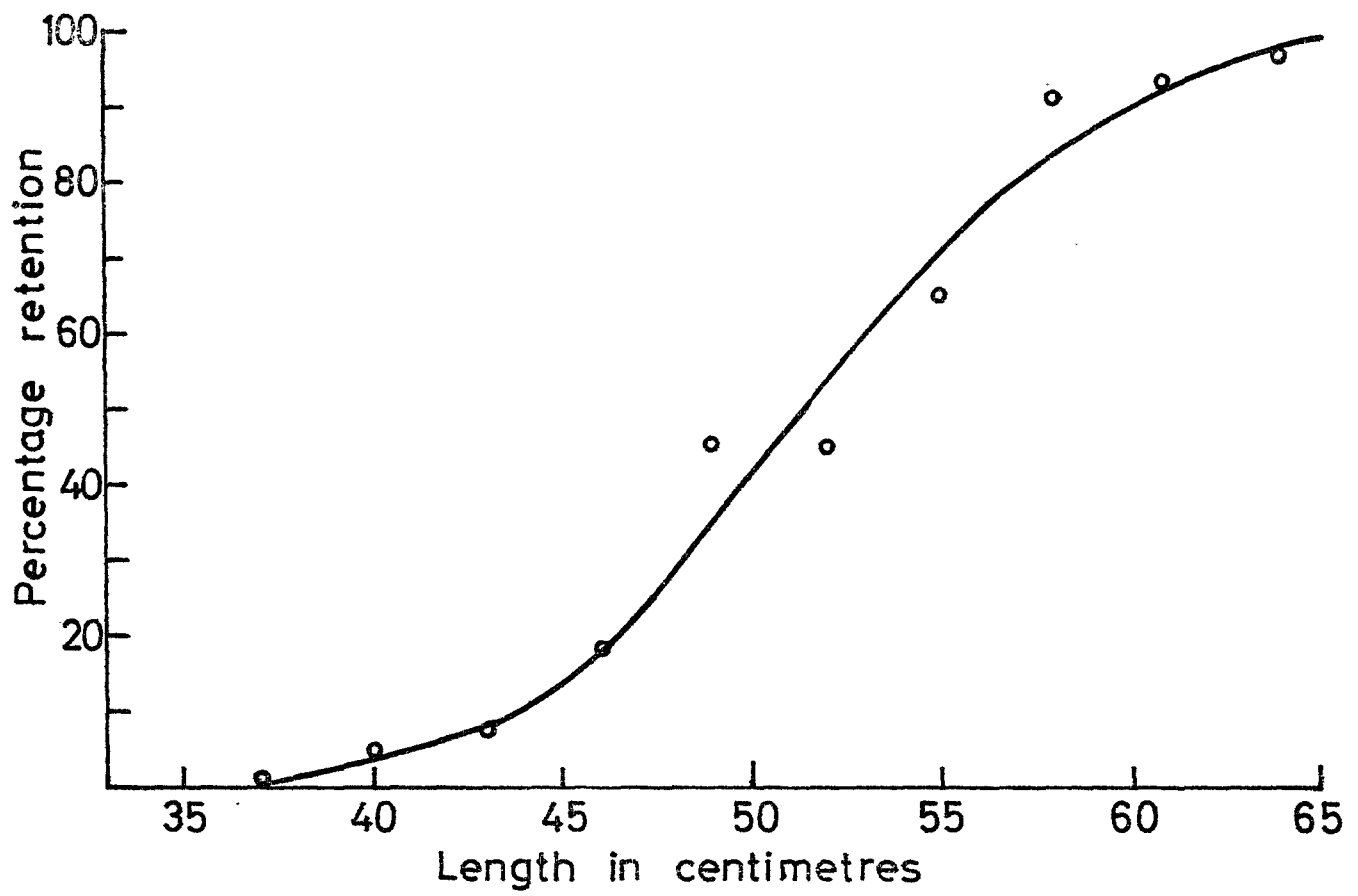


Figure 2. Selection curve for coalfish.