

Selection experiments with a  
courlene cod end in the Barents Sea.

by

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In March 1962 a few "covered haul" experiments with a 120 mm double braided courlene cod end were carried out on board the R/V "Johan Hjort" in the Skolpen Bank area of the Barents Sea. Comparative hauls were made with a double braided manila cod end.

The trawl used was a double braided manila "Small Granton" trawl, and the cover net was made of nymplex with a mesh size of approximately 70 mm. The towing speed was 3.2- to 3.5 knots and the towing time was one hour. Catches ranged from 12 to 67 baskets per haul, mainly cod, which were feeding more or less heavily on capelin and herring.

After each haul three longitudinal rows of 16 meshes in the after part of the cod end were measured with an Aberdeen pressure gauge.

In combining data from several hauls the mesh size is estimated as a mean, weighted according to the number of fish in each haul within the 25 - 75% retention range.

Catch statistics and particulars of each of 7 successful hauls are given in Table 1, and for cod and haddock selection curves are shown in Fig. 1.

In the analysis of the data, for cod the large haul No. 23 has been treated separately, and is represented by the small rings on top of Fig. 1. The selection curves are drawn on freehand from moving averages ( $1/4(a + 2b + c)$ ) of the percentages retained. The 50% retention lengths are determined by interpolation.

From Table 2, which summarizes the results, it would appear that for comparative sizes of catches no appreciable differences have been found between the selection factors for the courlene and manila cod ends.

The lower S.F. for cod for haul No. 23 indicates a decreasing S.F. with increasing size of catch. Most of the other catches with the courlene cod end are smaller than those taken with the manila cod end, and the combined S.F. for courlene (from hauls No. 20, 24, 25 and 26) might therefore be larger than for catches of a size comparable to those of the manila cod end.

The results of these few experiments in the Barents Sea therefore support the findings of previous authors (for instance: Boerema 1958, Otterlind 1960, Pope et al. 1958, Pope and Hall 1960), which seem to show that the selection factor for polyethylene fibres is at least not higher than for manila and sisal; and hence, the polyethylenes differ in selection properties from other synthetic fibres, such as the polyamides and polyesters.

References:

- Boerema, L.K. 1958. Mesh experiments. I.C.E.S., C.M. 1958, Doc. No. 58, 3 p.mimeo.
- Otterlind, G. 1960. Mesh selection results for Baltic cod. I.C.E.S., C.M. 1960, Doc. No. 205, 3 p.mimeo.
- Pope, J.A., Roessingh, M. & Brandt, A. von. 1958. International mesh selection experiments, 1958. I.C.E.S., C.M. 1958. Comparative Fishing Committee.
- Pope, J.A. & Hall, W.B. 1960. The selectivity of courlene cod ends. I.C.E.S., C.M. 1960, Doc. No. 183, 4 p.mimeo.

Table 1. Catch statistics.

Haul no.	COD		SPECIFICATION OF CATCH							
			COD			HADDOCK			Other spec.	All spec.
	Material	Mesh size	No. in 25-75% range		Total baskets	No. in 25-75% range		Total baskets	Total baskets	Total baskets
			Cod end	Cover		Cod end	Cover			
20	Courlene	119	268	260	27 1/4	31	109	5 1/2	2 3/4	35 1/2
21	Manila	114	214	227	37	190	206	9	2 1/2	48 1/2
22	Manila	113	310	281	32 1/2	20	56	2 1/4	1 1/2	36 1/4
23	Courlene	122	521	460	56	141	80	9	2	67
24	Courlene	121	171	103	13	13	32	2 1/2	1/2	16
25	Courlene	120	123	99	11 1/2	10	23	1	2	14 1/2
26	Courlene	121	109	90	10	8	12	1 1/4	1	12 1/4

Table 2. Summary of results.

Species	Haul No.	Cod end Material	Mesh size	50% ret. 1.	S. F.	25 - 75 % ret. range
COD	20, 24 25, 26	Courlene	120	45.2	3.8	7.0
COD	23	Courlene	122	42.9	3.5	9.0
COD	21, 22	Manila	113	43.4	3.8	7.4
HAD-DOCK	20, 25, 24, 25, 26	Courlene	121	39.1	3.2	8.3
HADDOCK	21, 22	Manila	114	36.7	3.2	9.1

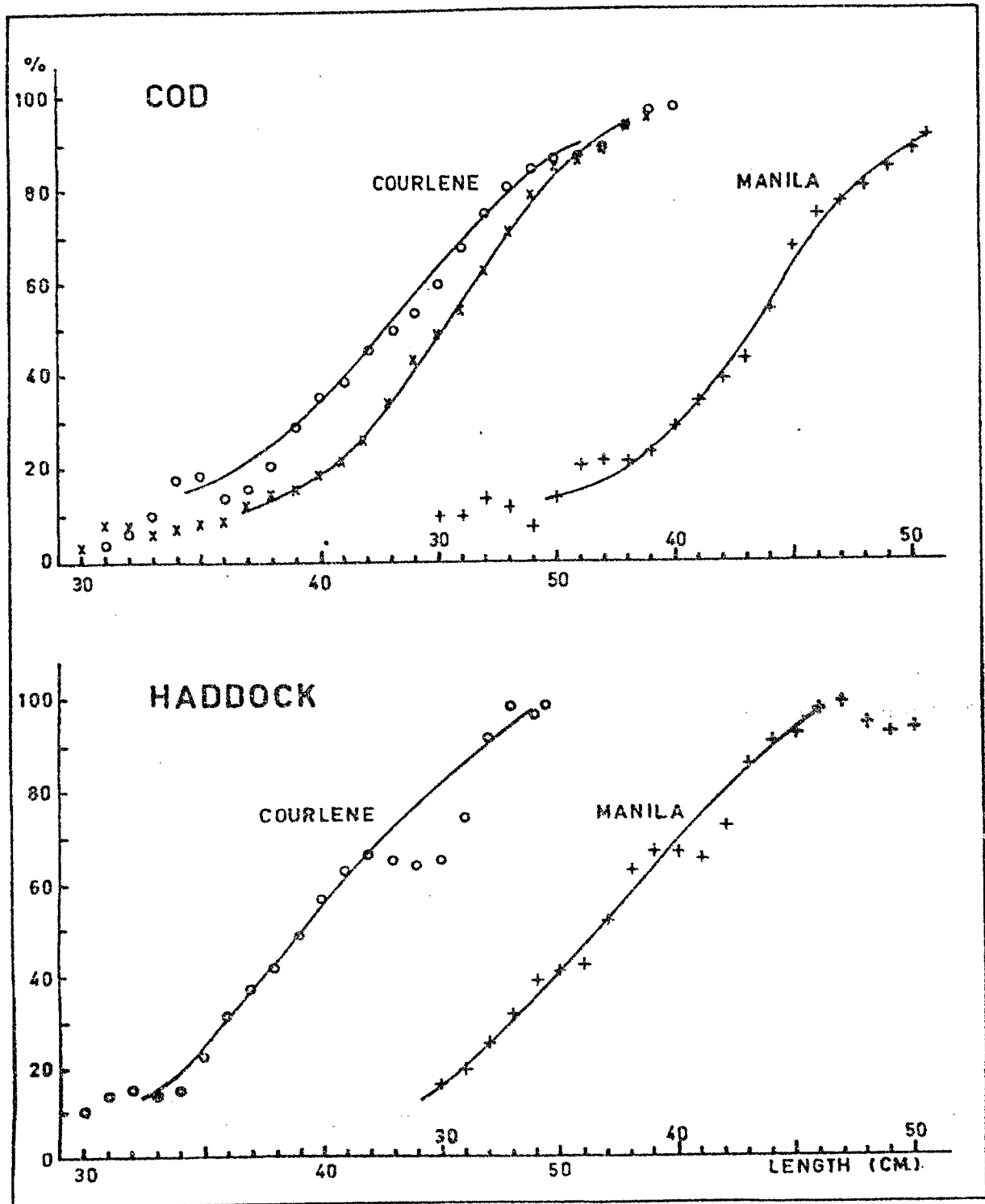


Fig. 1. Selection curves for courlene and manila cod ends. For further explanation see text.