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Charter Fishing Vessel *Aalskere* (K373)

Charter Cruise 0501H

REPORT

15-29 June 2001

Ports

Loading: Peterhead

Unloading: Peterhead

Personnel

R J Kynoch (In charge)
P J Barkel
E Jones (15-22 June)
B Mackie (22-29 June)
M O'Dea MSc Student (Aberdeen University)

Objectives

1. To measure the selectivity of 110 mm and 120 mm diamond mesh cod-ends with and without strengthening bags, using hooped small mesh covers.
2. To collect, as time allows, video film of the four different cod-end configurations.

Procedure

Staff and equipment joined *Aalskere* at Peterhead on 15 June 2001: The RCTV and fishing gear were rigged aboard the vessel in Peterhead harbour. The vessel sailed during the evening of 15 June to fishing grounds East of the Orkney Islands. Initial underwater observations of the gear were not made due to breakdowns of the RCTV system, which persisted throughout the remainder of the cruise. Codend selectivity trials were thereafter carried out on the four test cases using the hooped codend cover method. The grounds fished throughout the trials were 20-30 miles east of the Orkney Islands.

The cruise ended at Peterhead on 29 June with the RCTV system being transferred to the charter vessel *Ocean Bounty* and the fishing gear and staff returning to Aberdeen.

Results

There were sufficient quantities of haddock on the grounds for every haul but there were no whiting above 100% retention length (>40 cm) and very few cod. The average duration of each haul was two hours and the towing speed over the ground ranged between 2.5 kts and 3.3 kts.

Thirty selectivity hauls were made of which four were invalid due to twists in the gear. The haddock selectivity data were very consistent giving low variation from haul to haul.

The mean selection parameters for haddock for each cod-end are given in Table 1.

Preliminary analysis shows that removal of the lifting bag increases the selectivity for both mesh sizes – the length at which 50% of the fish are retained (L50) is increased by 5%. An increase in mesh size from 110 mm to 120 mm gives a 9% increase in L50.

Table 1. Haddock mean selection parameters for each cod-end test case.

Codend description	Number of valid hauls	L50	SR
110 mm with lifting bag fitted	7	29.8	4.3
110 mm no lifting bag	7	31.3	4.6
120 mm with lifting bag fitted	6	32.5	4.6
120 mm no lifting bag	6	34.2	4.9

For the population of fish on the grounds at the time of the trials, the % retention rates for the juvenile and % escapes of marketable haddock and whiting are given in Tables 2 and 3. The results indicate that the gears become more selective as the mesh size is increased and the lifting bag removed. Only a small percentage of juvenile fish are discarded in any of the gears. Most escapes of marketable haddock occur at lengths near the minimum landing size. For example, 23% of fish of 30cm and above escape from the 110 mm codend with a lifting bag but this reduces to only 5% of 34cm fish and above. Major escapes of whiting are seen in all four gears.

These percentages apply only to the population on the grounds fished at the time of the trials. If for example there were more large marketable fish, the % escapes of marketable fish would be smaller. A fuller statistical analysis will be carried out in the Laboratory.

Table 2. Percentage retention rates of juvenile and % escapes of marketable haddock entering each codend.

Codend description	% Retained of fish entering codend			% Escapes of fish entering codend			
	Below 26 cm	Below 28 cm	Below 30 cm	30 cm & above	32 cm & above	34 cm & above	36 cm & above
110 mm with lifting bag fitted	4	8	10	23	10	5	3
110 mm no lifting bag	4	5	6	34	20	11	5
120 mm with lifting bag fitted	4	6	7	46	31	22	16
120 mm no lifting bag	1	2	2	60	43	31	22

Table 3. Percentage retention rates of juvenile and % escapes of marketable whiting entering each codend.

Codend description	% Retained of fish entering codend			% Escapes of fish entering codend			
	Below 23 cm	Below 25 cm	Below 27 cm	27 cm & above	29 cm & above	31 cm & above	33 cm & above
110 mm with lifting bag fitted	0.1	0.2	0.4	95	88	70	47
110 mm no lifting bag	0.1	0.3	0.4	97	92	75	47
120 mm with lifting bag fitted	0.3	0.3	0.3	96	94	86	74
120 mm no lifting bag	0.3	0.3	0.4	98	96	89	72

R J Kynoch
13 August 2001