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SPANISH LONGLINE EXPERIMENTAL FISHING CRUISE IN INTERNATIONAL WATERS OF THE WESTERN INDIAN OCEAN IN 2004 AND 2005

by

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Introduction

This type of experimental cruise is a joint action involving the fishing industry, the Spanish government and the IEO (Spanish Oceanographic Institute) as the research body. Its objectives include a combination of industrial and scientific interests. In particular, the campaign presented in this document aims to analyse the feasibility of developing a new longline fishery over tropical tuna in the south-western Indian Ocean, bearing in mind the environmental impact of this type of fishery. For this purpose, the suitability of using new hooks and different kinds of bait will be studied, in order to be more selective in the catches, keeping the target species' catch rate but preventing, to a large extent, catching accessory species considered to be "sensitive" (the case of marine turtles) and of no commercial value. Likewise, biological parameters of the species will be obtained and opportunist tagging will be carried out.

Experiments in the use of new types of hooks and bait have already been undertaken by several countries with surface longline fleets, with promising results.

Objectives

Basically, there are two:

- To explore the possibilities of developing a new longline fishery targeting on tropical tuna, in an

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area with significant catches of these species and

- To experiment with new hooks and different types of bait in order to reduce the marine turtle catches, without affecting commercial catch rates (previous experiments indicate that progress has essentially been made in the use of circular hooks and mackerel as bait).

Methodology to be used and data to be obtained by observers

The experimental cruise will be carried out by two Spanish longliners with the permanent presence of scientific observers from the Spanish Oceanographic Institute (IEO), starting in December 2004, once the vessels have reached the port of Durban (Republic of South Africa). Fisheries will be undertaken over the following twelve months and will only be interrupted for trips to port for relief crews, offloading and provisioning with fuel and supplies.

Basically, four types of hooks will be used (16 J, 16 O, 18 O and 16 O blue). Bait will be squid or like squid species and mackerel or another species available in the area and considered interesting for the experiment, in addition punctual experiments using dyed bait will be conducted.

The international waters of the south-western Indian Ocean, at 35º S and 25º S latitude and at 50º E and 30º E extreme longitude, will comprise the working area in which the experimental fisheries will be performed.

It is calculated that 274 fishing operations can be undertaken per vessel throughout the experiment or 548 for both vessels jointly. The operations will be carried out by following the sampling protocol defined by the IEO.

A scientific observer will be present on each vessel for the duration of the research, gathering detailed information about:

- Areas of setting-hauling and other variables characteristic of the set, according to logbooks specifically designed for this type of fleet.

- Fishing effort per set and total (no. hooks set) and characteristics of the gear (types of hook, bait, and depth, etc.).

- Species identification and obtaining faunistic lists of the catch. Census of the specimens caught, retained, etc.

- Biometric data gathering of the catch: size and weight if possible.

- Estimation of the catch in number and weight and destination (retained, discarded, etc).

- Sexing of specimens caught.

- Opportunistic tagging and release of live young specimens of Yellowfin, Bigeye and other species (tuna, tuna like species or other species) fished as by catch.

- Observation of fishing gear characteristics and their effect on the catches.

- Observation of basic oceanographic variables.

- Data gathering, as far as possible, about marine mammal predation of the species caught by longline (Recommendation by the IOTC).

- On board computerization of data and periodic dispatches of information to the IEO Oceanographic Centre in the Canary Islands.

RESULTS

The results of this experimental cruise will form the basis of scientific documents to be presented to the WPTT.