

FAIR CT-98-9079

Developing a process for Automated Tuna Head Meat Recovery

Abstract of the Midterm Report for the period
from 01-04-00 to 31-10-00

Type of contract: Co-operative research project

Total cost: 695 kECU **EC contribution:** 345 kECU or 49,6%

Commencement date: 01-04-99 **Duration:** 2 years

Completion date: 01-04-01

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Partners:

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I. Introduction and objectives

Tuna heads are by-products from the canning of tuna meat. The heads contain meat, which is currently not used to any extent for human consumption. No machines are available to remove the meat, and manual removal is not economically feasible. This project aims at developing an automated prototype machine, which can remove the meat from tuna heads. The machine must recover the meat so it can be incorporated into current products of the tuna industry without loss in quality. It should also be compatible with current automated tuna processing lines in terms of capacity and flexibility regarding fish size.

The project focuses on three main work packages: 1. Determination of the parts (and quantity) of tuna head and collar meat which can be incorporated into canned goods. 2. Development of a prototype machine to remove the meat. 3. Testing of the machine under laboratory and industrial conditions. In the project a multidisciplinary approach will be used to ensure that the intended process technology development can be efficiently integrated into current working practices and that product quality is not affected by the incorporation of the recovered meat. This will involve the transfer of expertise from one fishing sector to another or from the North to the South of Europe.

The project was to start at the end of 1998 but was delayed for about 6 months because participants changes. The prime SME is an Icelandic machine manufacturer, specialising in the construction of equipment for meat recovery from different marine species. Another Icelandic SME participates in the project, an engineer consultant. Two Spanish SMEs (machine engineering companies) also participate in the project. The RTD participants are three, two Spanish (tuna manufacturer and a University) and one Icelandic (fish research institute) that also acts as the co-ordinator. The project is expected to be completed in Spring 2001.

The novelty of the technology of mechanically recovering meat from tuna heads will be patented. Initially the novel machine will be utilised in Spain and when proven successful sold and/or licensed to other countries. The prime proposer and the other SME's intend to use the new technology to obtain new markets or services.

II. Description of work

One plenary meeting has been held (June 2000) during the period in Spain. The research and development work has focused on *Development of a prototype machine* (Task 3), *Testing of the prototype machine* (Task 4), *Setting of quality and hygienic standards* (Task 5) and *Ergonomic and engineering study* (Task 6).

III. State of progress and achievements

Development of a prototype machine (Task 3) has been completed.

Testing of the prototype machine (Task 4) has been finished. Testing of the prototype machine led to changes in its design as stated in the midterm reports. The yield, capacity, ease of use, properties and technology of the prototype machine were evaluated. The values for these parameters were found to be within the criteria set forward at the start of the project. The development and construction of the machinery has been successfully completed. Pictures and live video are enclosed with the reports and in the report from participant 01 - the machine constructor. The machine has been sent to Spain where industrial trials (Task 7) are being performed

Setting of quality and hygienic standards (Task 5) is still in progress. Drafts of Good Manufacturing Practices (GMP) and Hazard analysis and control of Critical Points (HACCP) schemes for processing of recovered tuna head meat have been made. The schemes will facilitate the industrial trials in the factory with the automated prototype. Furthermore they will ensure that the recovered tuna head meat will comply with quality standards set by the factory and with the safety regulations of the EU.

Ergonomic and engineering study (Task 6) is performed to ensure successful incorporation of the prototype machine into the current processing lines. To facilitate the incorporation of the prototype a prototype platform has been made. An ergonomic study of the current working practices has been carried out and a draft of a plant layout has been prepared. A final engineering study to link the machine into existing process will be conducted in Task 7, Industrial trials.

IV. Future actions

A meeting will take place with all participants in Spain – March 2001.

Completion of Task 5 (*Setting of quality and hygienic standards*) and Task 6 (*Ergonomic and engineering study*), Task 7 (*Industrial Trials*) February/March 2001.
Completion of Task 8 and 9 in March 2001.

Final report handed in to the Commission – June 2001.