



Trash2Cash Delrapport nr. 7.3

Mackerel oil – a very short market survey

Projekt 7: Oparbejdning af pelagisk restfraktion til konsum

Core Competence

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Delprojekt 7: Oparbejdning af pelagisk restfraktion til konsum

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Introduction

As a part of the Trash to Cash program, Teknologisk Institut wanted a market study on Mackerel oil. Ideally, this study should cover products, volumes, growth, competition, applications and prices and also position mackerel oil in the very large global market of fish oils. To achieve this, Teknologisk Institut worked together with Core Competence AB, responsible for this report.

Background

The global fish oil market is very large and growing. It is well characterized in several published books and reports, for instance references 1, 2, 3 and 4.

Mackerel is a fish harvested world-wide. The oil from the mackerel fish differs, depending on where it has been caught. Generally, fish swimming in cold waters tend to have higher amounts of polyunsaturated fatty acids. The mackerel species of relevance for this study is Atlantic Mackerel or Atlantic Jack Mackerel.

Properties of Mackerel oil

Some characteristics for the fatty acid profiles of mackerel oil and a few other oils are shown in the table below. The numbers should be taken as indicative only, as the lipid content has a large seasonal variation. For herring there is only one observation, therefore the lack of a range for these numbers.

It is interesting to note the high ratio of DHA to EPA in mackerel oil. Could mackerel oil be sold as high DHA oil? Other oils high in DHA is tuna oil and the algae oils, both sold for considerably higher prices than standard fish oils. The comparison in Table 1 is difficult to make, since we are comparing crude mackerel oil with refined oils from other species. Standard refined commercial 18:12 fish oil contains 18 % EPA and 12 % DHA, with a ratio of DHA to EPA of 0,67 and a total content of DHA + EPA of 30 %.

Prices for fish oils vary according to supply and demand, and also to the degree of purification. Some typical examples are: Fish oil 18:12, 30 % DHA+EPA, 30-60 DKK/kg, Cod liver oil, 30-45 DKK/kg, Tuna oil, 80-150 DKK/kg, microalgae oil, 400-600 DKK/kg.

Table 1. Comparison of fatty acids in fish oil.

Fatty acid	Mackerel, crude oil	Tuna, re-fined	Herring	Cod Liver Oil, re-fined	Microal-gae Oil, refined
Saturated	21-25	28-31	19	14-16	24-28
Monounsatu-rated	37-43	21-26	45	48-50	20-22
Polyunsatu-rated	29-33	39-45	24	31-35	49-52
EPA	6-8	6,5-8	11	8-10	0
DHA	11-13	20-27	6	9-13	47-50
DHA + EPA	17-21	26,5-27	17	17-23	47-50
DHA/EPA	1,6–1,8	3,1–3,4	0,5	1,1–1,3	Very large

DHA is the most abundant omega-3 in the brain and retina. It is also an important structural component of heart tissue and naturally found in breast milk. Babies and newborn utilise DHA for brain, nerve and eye tissue development. EPA is important for the prevention of cellular inflammation and heart health.

Markets for Mackerel oil

Apparently, almost all mackerel oil produced today will be blended into fish oil from other species, such as sardines, refined and sold as general 18:12 fish oil. As seen in Table 1 above, the properties of mackerel oil is not all that different from many other fish oils, although it does have a higher DHA to EPA ratio. Oils with a high DHA content are in demand, and will continue to be so, as wellness products evolve and the distinction between food and medicine blurs. Today high DHA products go to infant food supplementation and nutritional supplements for children and adults (*DHA – the brain’s study buddy*).

The French company Setalg, Pleubian, Bretagne, www.setalg.com specializes in seaweed, but has also other marine products in their portfolio. On their web page they state:

As a refined fish oil manufacturer, Setalg offers the Jack Mackerel Oil in crude or semi-refined forms.

However, the company stopped selling mackerel oil a year ago, due to lack of suppliers. The applications for the Setalg mackerel oil seemed to mostly be feed and pet food.

Setalg is interested in contacts with a new supplier of mackerel oil, also crude oil, and would like to see a specification in order to suggest a purchase price. Contact is Julien Saintilan, jsaintilan@setalg.com.

As a curiosity, crude mackerel oil is used in Great Britain as an attractant for baits for anglers (see Table 2).

"This I consider to be a very important Predator attracting oil, it can be used in Freshwater Fishing. This can be used for all types of fish attraction for large perch, Eels, Zander, And Especially Pike. This is a strong thick smelling oil ideal for injecting into your dead fish and releasing slowly creating an Oil slick which will attract your chosen quarry Mr. Pike!"

The consumption of mackerel oil for this application can be estimated to a few barrels per year.

Table 2. Suppliers of attractant for baits for anglers

Company	Price	Comments
Cat master tackle www.watersedgebaitandtackle.co.uk	500 ml, £ 9,99	Winterised oil
Ouron Fishing www.ouron-fishing.co.uk	150 ml, £4,99	Complete with syringe
Pike Pro www.baitbox.com	150 ml, £ 3,99	Winterised oil
Baits direct www.baitsdirect.com	250 ml, £2,74	
The Tackle Shop www.thetackle-shop.co.uk	50 ml, £2,40	

Mackerel oil Opportunities

The present situation for mackerel oil could be seen as a small stream soaked up in the very large river of commercial fish oil. Today, there seems not to be a market for mackerel oil as such, as a unique product. However, there are some opportunities to consider:

- Sell the crude mackerel oil to feed customers or to Setalg in France.
- Evaluate the opportunity of selling refined mackerel oil as a high DHA oil. This would include a closer look at the DHA content at selected points in the production process and a check of seasonal variations. Also, a first talk to some potential customers. “If we had oil with this spec, and this price, would you be interested to buy?”
- Invest in mackerel oil refining and sell the upgraded oil in competition with 18:12 fish oil. Insist on a price increase due to the high DHA content.
- Invest in mackerel oil refining and introduce your own brand. Sell to industrial customers, and also preferably to consumers. Supply your canned mackerel customers also with mackerel oil, a nutritional supplement – Sæby Mackerel Oil, the Møllers Tran of Denmark. For references, see www.mollersdirekte.no (cod liver oil) and the Xalar brand, Xalar, virgin salmon oil, www.xalar.no

Teknologisk Institut would welcome a discussion with Sæby Fiske-Industri on how to go forward in a practical way with these suggestions.

References

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