

# Abstract for Omega-3 Fish Oil

*Ensymm abstract for Use and Production  
of Omega-3 Fish Oil*



# FISH OIL

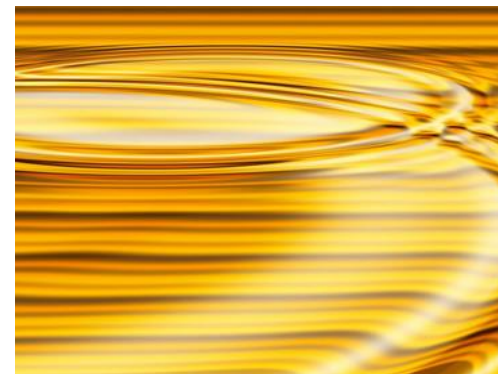
Fish oil is by far the biggest source for omega-3, estimated by *Frost & Sullivan* to account for about 85 % of the market by volume. Almost all the fish oil produced in the world comes from South America and Morocco, and only a tiny percentage of global crude fish oil production is actually distributed to the market for human consumption, with the rest being used for fish and animal feed.

According to the *Global Organization for EPA and DHA (GOED)*, an omega-3 trade association, around 6-10 % of the total 1Mio. tons crude fish oil produced per year is refined to produce omega-3 for human consumption. The figure from the *International Fishmeal and Fish oil*

*Organisation (IFFO)* is even smaller, placing human consumption at less than 3 %. Out of this, only 0.6 % is thought to relate to the European market.

Most of the refining takes place in facilities in Norway and Canada, with some also sent to the UK, Japan and the US. According to *Frost & Sullivan* figures published in 2007, the US market for fish oil stands at 17,384 metric tons, and the EU market at 13,340 metric tons. There have been some claims that fish oil production is contributing to depleting global fish stocks. However, Adam Ismail, executive director of GOED, says this is a “misconception” because fish oil generally comes from fish such as anchovies, herring, mackerel and

sardines, only a very small portion of which are sourced for human consumption. The one potential threat to the supply of marine-sourced omega-3 is environmental. Warmer waters, possibly as a result of El Nino conditions, are thought to have contributed to lower DHA levels in fish oil from South American waters over the last few years.



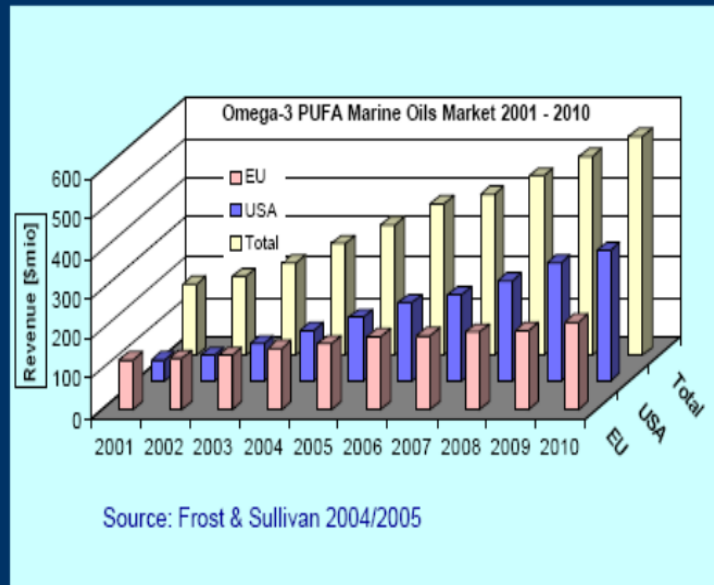
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This means that it has been harder to find the standard 18:12 ratio fish oil (18 % EPA, 12 % DHA). Because this became scarcer, prices went up by 50-75 % last year for crude fish oil. However, according to GOED, this had little impact on the price of omega-3 as food or supplement ingredients as most of the increase was absorbed by the oil refiners.

## The Use of Omega-3

Netherlands-based producer DSM estimates the global value of the fish oil and algae-based omega-3 ingredient market at €800m-€1bn (\$1.2bn-\$1.5bn). Current growth is put at 10-13%/year, says *Amanda Ruess*, director, nutritional lipids at DSM.

## Omega – World market



	CAGR revenues	
	2001-20010	2006-2010
EU	8,2%	6,0%
USA	27,1%	17,3%
Total	16,6%	12,6%

# THE USE OF OMEGA-3

"The science relating to the health benefits of omega-3 gets stronger and stronger," Ruess says. "Suppliers have overcome a lot of the technical hurdles for handling omega-3 oils and have progressed in producing various forms, which can be used successfully in a wide range of end-products in foods, beverages, supplements and infant formulas."

A recent report by the worldwide consulting firm Frost & Sullivan estimates global consumption of marine and algal omega-3 ingredients last year at 71,452 tonnes, says Lori Covert, vice president of marketing and communications, Ocean Nutrition Canada (ONC). North America is the largest consumer, of 26,948 tonnes,

followed by Asia-Pacific at 21,145 tonnes, the EU (13,596 tonnes) and the rest of the world (5,762 tonnes) of omega-3 ingredients. "The growth rate has averaged 30-40% annually during the last few years. We still expect significant growth in the next several years," she adds.



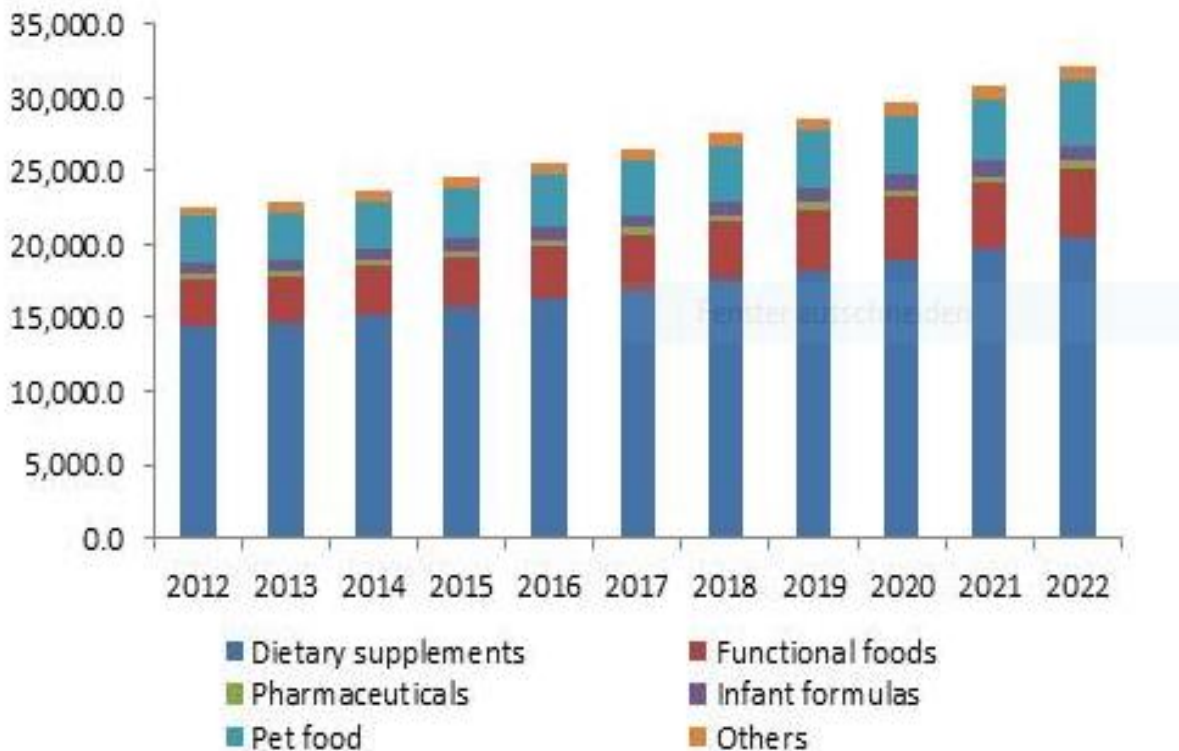
For UK-based Croda, estimates the global refined oils and concentrated omega-3 ingredients market to be worth \$1.3bn (£882m), and the market for raw material crude oil at \$180m. It estimates the global market for consumer goods at \$13bn.

# FISH OIL INDUSTRY ANALYSIS

According to the report of Global Market Insights EPA/DHA ingredients market size is expected to register USD 3.7 billion by 2022 growing at a CAGR of 9.1% from 2015 to 2022. Growing awareness of consuming nutrient fortified foods owing to numerous health benefits is anticipated to drive EPA/DHA ingredients market growth.

Global nutraceuticals market comprising of food, beverages & supplements was estimated at over USD 175 billion in 2014. These are important nutrients to maintain functioning of the body and help in preventing cancer, heart diseases and arthritis. Global omega-3 market size in terms of consumer spending on supplements was valued at over USD 3.4 billion in 2014.

Europe EPA/DHA ingredients market size, by application, 2012-2022 (Tons)



# HEALTH IS WEALTH

Sharrann Simmons, senior marketing manager at Germany's Cognis Nutrition and Health, agrees that people are trying to self-treat in order to protect their health because they don't have health insurance, are worried about losing their insurance, or their medical bills are too high.

Growing consumer awareness of the health benefits of omega-3 has become the No. 1 driver for its growth, she says. Scientific studies report that omega-3 fatty acids are beneficial to heart, joint and brain health, and for cognitive functioning and developments, especially for infants and children. Recent studies tentatively support the use of omega-3 fatty acids in treating depression, therapeutic

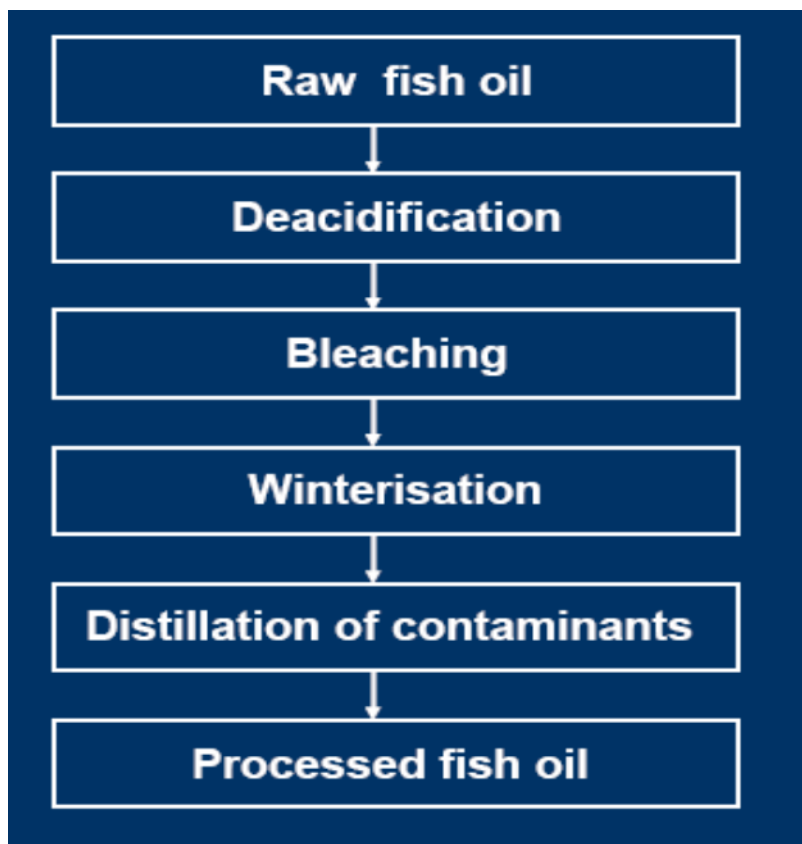
management of autism, preventing age-related blindness and decreasing the risk of prostate cancer. Recent market research indicates that consumer awareness of the benefits of omega-3 fatty acids in the US is around 75-90%, says Simmons.

Over "This is by far the highest consumer awareness of any other functional ingredient that would be added to food and beverage," she says. "Everyone understands that it's a great ingredient, they need it, and that they are not getting enough of it in their normal daily diet."

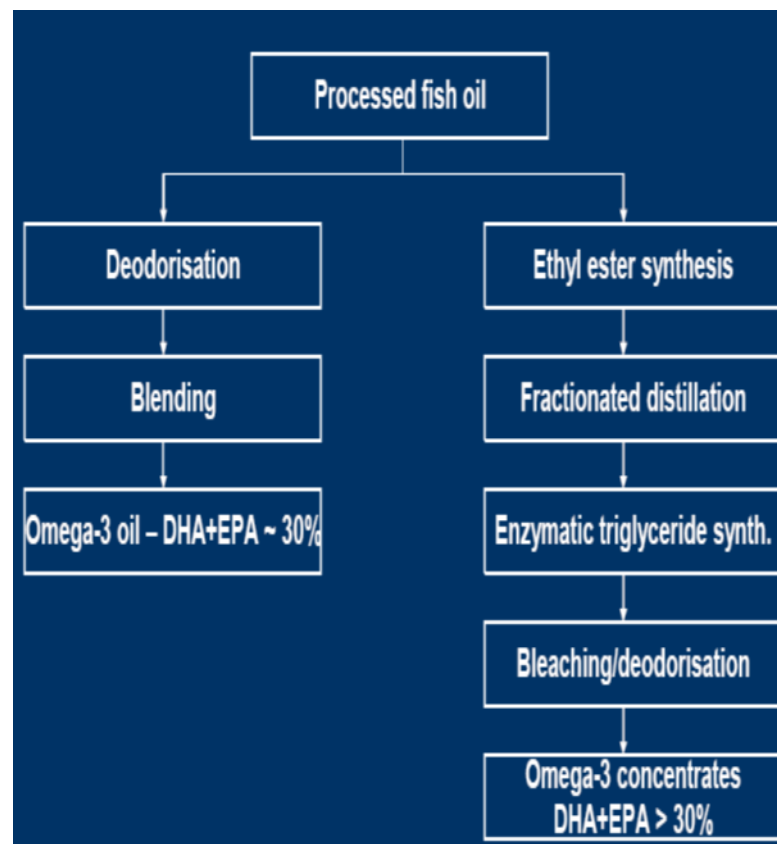


# PROCESSING

## 1<sup>ST</sup> Step: Fish Oil



## 2<sup>nd</sup> Step: Omega-3 Oil





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