

Fish Oil: Production and use Now and in the Future

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Production of fish oil. World annual production of fish oil currently is about 1 million tonnes. In the past, a high portion of this was produced mainly from small boney fish as a co-product in the production of fishmeal. These so-called 'feed' fish are in the main short-lived and sustainably fished, but there are few prospects for increasing volumes thereby limiting the production of fish body oil from this source.

Increasing quantities of fish oil are now being produced from by-products of human grade fish. Currently this accounts for around a quarter of all fish oil production. By-products from farmed fish are increasing, accounting for more fish oil production. Taken together -- feed fish and trimmings, the future production of fish oil is expected to remain about the same.

Use of fish oil. Currently 85% of fish oil produced globally is used in aquaculture in feeds for farmed fish and crustacea. Around 10% is used in nutraceuticals (from food products and capsules). Recent estimates suggest the latter may increase to 25% with a corresponding fall in use of fish oil for aquaculture within the next four to five years. More substitution of fish oil will be necessary, as discussed by the earlier speaker (Reid Hole).

Fish oil, along with fishmeal, are currently the major source of long-chain omega-3 fatty acids in fish feeds for carnivorous and some omnivorous fish. Requirements for these fatty acids by the fish are relatively low; meeting them is not a problem. Ensuring levels in fish flesh are similar to those in the comparable wild fish may be difficult, especially for DHA.

Long chain n-3 fatty acids for humans. For the foreseeable future fish oil incorporated in feeds for farmed fish and crustacea will be the main route of getting long chain n-3 fatty acids from wild captured fish, especially DHA, back into human foods. Recent evidence suggests that humans utilise dietary sources of these fatty acids from fish, such as farmed fish, better than those from fish oil in other forms, such as capsules.

There is now robust evidence showing the value of these fatty acids from fish oil/farmed fish in the human diet benefit cardiovascular health. There are also some indications that they also benefit mental development in the young, mental health, immunity and are anti-inflammatory. Because of the deficit of these fatty acids in many Western diets, making full use of fish oil from sustainably caught whole-fish, and by-products will be important in helping to maintain human health.