Dr Bill McGraw

Aquaculture and Environmental Scientist

Boquete, Panama

www.newaquatechpanama.com

billmcgraw29@hotmail.com

Are Tilapia Safe to Eat?

There are currently numerous articles on the internet stating that tilapia may not be safe to eat. When searching for actual reasons and data related to this warning, facts provided are that tilapia may be lower in healthy omega-3s, higher in potentially harmful omega-6s, and that they may contain toxic compounds from the feed or the environment. The truth behind the internet warning "don't eat tilapia", is more related to the methods of production such as feed type and local sources of contamination rather than the nutritional potential of the fish itself.

Available info indicates that ingesting too much omega-6s may actually be inflammatory to some. The age old adage "you are what you eat" is apropos in regard to omega-3 content in feed. Fish don't make omega-3s, and so this important compound must be provided in their diet. Tilapia have been reported to have an equal amount of omega-3 content compared to wild snapper or maji maji. In addition, tilapia grown in green water systems have more omega-3s from algae than those grown indoors in clearwater systems that have soy and corn as the only source of nutrition available to them.

Problems associated with tilapia may be applicable to all types of aquaculture products in relation to contamination of fish via the environment and feeding of agricultural wastes and manures as is often practiced in Asian countries. This can obviously contribute to the spread of disease. Traces of antibiotics, unapproved preservatives and even pesticides found in tilapia may indeed be found in all types of farm raised proteins.

Opponents of aquaculture state that the toxic compounds, dioxins and butyltins accumulate in farmed raised fish such as tilapia and salmon. However, investigations into these toxic compounds do not add up.

Dioxins are created from industrial processes such as chemical manufacturing, waste incineration and pulp industries, however, dioxin contamination in relation to industry has decreased by 90% due to strict government regulation, since reaching an all time high in the early 1970's

Biocides and antifouling treatments for marine environments are the prime suspects for the toxic butyltins. Accordingly over 1 million pounds of butyltin are sold annually. Accumulation in seafood has primarily been cited in bivalves near sites producing the contamination, accumulating in sediments and animals found near sediments such as clams and mussels. Farmed tilapia do not generally consume animals that live in sediments in aquaculture systems nor are they exposed to chemicals used primarily for docks, boats and other machinery found near seawater.

PCBs, another carcinogen banned from use in the US in 1976, accumulates in oils and fats from fish. Salmon have a very high level of fish oil in their prepared diet and this renders them vulnerable to PCB accumulation. Farmed salmon have 10 times the level of PCBs compared to wild caught and 4x that of beef and other seafood. As tilapia are fed primarily vegetable proteins they would unlikely accumulate oil based toxins.

The nutritional value and possible source of toxicity of tilapia is related to the methods and feed types used in husbandry rather than the actual potential of the fish itself. Better quality feed ingredients with access to green water and other plants as potential sources of environmental nutrition increases the nutritional value of this fish. Growing fish in water of good quality, not exposing fish to environmental contamination and engaging in proper food safety protocols provides a very nutritional fish to eat. Current worldwide tilapia consumption is over 4.2 million metric tons and it is the second most widely grown fish behind carp. As of 2013, 70% of all tilapia consumed in the US comes from China.

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