

# Tilapia: the fish for the future?

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By *Nicci Micco*

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### Explore this delicious eco-friendly fish.

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Nutrition experts urge us to eat more fish; yet, worldwide, we're already consuming seafood at a rate that is not sustainable. Wild fisheries are overexploited and, some say, fish farmed in traditional open pens can pollute surrounding water. What's an environmentally conscious consumer to choose? In terms of sustainability, you can't beat tilapia from a tank, says Michael B. Timmons, Ph.D., professor in the biological and environmental engineering department at Cornell University and author of *Recirculating Aquaculture* (Cayuga Aqua Ventures, 2007).

Tilapia are low on the food chain and adaptable—basically, easy to cultivate. And people have been doing so for years: a bas-relief on a 4,000-year-old Egyptian tomb shows tilapia held in ponds. Today nearly all tilapia farmed in the U.S. are raised in self-contained aquariums that purify and recycle water. These so-called recirculating aquaculture systems often employ “biofilters”—microorganisms that feed on nitrogen—to treat wastewater. Bacteria break down some fish waste into nitrogen (which the microorganisms absorb for fuel) and other organic compounds that can be used to grow plants and algae, which are fed back to the fish. Sediment is removed from the tanks mechanically, and 99 percent of the water is recycled. “It’s a highly efficient system,” says J. Emmett Duffy, Ph.D., professor of marine science at The College of William and Mary in Gloucester Point, Virginia.

The system (which can be used to grow nearly any fish) is particularly efficient when you're raising tilapia, omnivorous fish that can get all the nutrients they need from small

plants, algae and bacteria. Carnivorous fish, such as salmon and tuna, on the other hand, need to eat smaller fish. “Farming carnivorous fish has a fairly significant environmental impact,” says Duffy. “Scouring the ocean for the prey fish can harm ecosystems.”

Tilapia don't just survive on simple plants and microorganisms, they thrive on them: tilapia utilize nutrients more efficiently than other fish, thanks to a digestive tract that, extended, is about 13 times their body length. (A trout's is less than three-quarters the length of its body.) “That gives them a lot of time to extract nutrients,” says Timmons. And because tilapia are so good at converting plant fuel into high-quality protein, they're an economically wise choice. “Tilapia is by far the most sustainable commercially available fish,” says Timmons.

So what's the catch? Not all tilapia farmed worldwide are cultured in recirculating systems. So try to buy tilapia grown stateside. Likely, its source won't be identified. Ask at the fish counter.

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