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Tilapia the super-fish. Tilapia fish is commercially cultured fish that is easy to grow, fast to reproduce, adaptable to farming settings and conditions, while at the same time is resilient to disease and highly acceptable by American consumers.

Tilapia fish have a mild, white consistent flesh denser than cutfish, but less dense than salmon; a mild flavor that may accompany any other food dish. This appeals to farmers and consumers. Tilapia has become the 5th most consumed fish in United States in the last decade, behind only to Tuna fish.

The many desirable traits makes Tilapia fish an ideal aquaculture specie. Most commercialized species include the Mozambique (*Oreochromis mossambicus* or Tilapia mossambica), blue Tilapia (*O. aureus* or Tilapia aurea), Nile Tilapia (*O. niloticus* or Tilapia nilotica), Zanzibar or Wami Tilapia (*O. hornorum* or Tilapia urolepis), and the lesser known redbelly Tilapia (*O. zilli* or Tilapia zilli) and *O. Rendelli*. These species known to current markets today contribute about 4% of the total Tilapia aquaculture production worldwide.

**Species Origen and world distribution**

Tilapias are native to Africa and the Middle East. Once foreign to the United States, populations of Tilapia are now established in Arizona, California, Hawaii, Florida, Wyoming, Nevada, New Jersey, North Carolina, and Texas. Tilapia was introduced to North America, South America and the Carribean islands in the early 1950’s.

Its generic term Tilapia is used to designate a group of commercially farmed fish belonging to the family Cichlidae. The African native Bechuana word "thiape" gave origin to it present name, the word meaning fish. Bechuana a former name for a member of the Bantu people of Botswana, Africa. Tilapias are classified in the large order of fish genera inhabiting fresh and brackish waters of Africa, the Middle East, coastal India, Central and South America and most recently USA where is considered an invasive specie requiring State certification for commercial possesion.

**Mouth-Brooding Tilapia Genera**

Tilapia of the genera *Sarotherodon* and *Oreochromis* parents will incubate and protect the young in their mouths (mouth brooding); a genera survival trait and distinguishing characteristic of caring parents; such behavior enhancing the offspring survival allowing great proliferation. Specific reproduction roles are seen in Oreochromis, these species distinguished by maternal mouth-brooding while parental fish prepare reproduction grounds keeping any intruders from the maternity ward grounds.

After inception care of the young is performed primarily by the female fish carrying the young fish – fray - in its mouth until the tiny creatures are self sufficient and can protect themselves from larger bigger, praying fish. A great survival and adaption trait that increases survival rates substantially.

The article below summarizes the potential of Tilapia as daily food staple affordable to farm, its acceptability and future markets.
Tilapia is a Farmed Fish of Biblical Fame

By Joyce Rosencrans

Post food editor

The first time I tasted Tilapia was at EPCOT. It was a Disney kind of day nearly 20 years ago, and the lunch catered to food editors gathered in an EPCOT conference room featured a farmed Tilapia sauté. The mild, white fish -- known to be harvested in biblical times -- was billed as a future food.

Why?

Because a one-pound Tilapia can grow in only one gallon of recyclable water. Also, Tilapia feed on small amounts of soybean meal, unlike farm-grown salmon that require six pounds of dried salmon fish food. In fact, this efficiency of protein growth once earned 30-baby Tilapia fish a ride in space.

On Oct. 29, 1998, John Glenn returned to space aboard the Space Shuttle Discovery for a nine-day mission to study, among other issues, the possibility of fish farming on space stations.

Scientists wanted to see how the baby Tilapia developed in semi-weightless conditions.

The fish has no characteristics distasteful to seafood-sissy Midwesterners, and Tilapia is a light entrée to suit summer appetites. It's budget-wise because the fish purchase is waste-free. Each fillet is skinless and deboned.

Here on earth, about 3 acres are required to raise a steer -- or 30,000 pounds of Tilapia can be farmed instead, according to an aquaculture company formerly in Maine -- Regal Springs Tilapia. Now the fish are just as likely to be imported; they're "farmed all over the world," according to one Red Lobster restaurant manager.

As for nutrition, Tilapia is a high-protein food with negligible fat. One serving provides 18 grams of protein and one gram of fat.

Israel has been in the lead of Tilapia production for decades, appropriately. More than 2,000 years ago, a famous Israelite was said to have fed the masses with fish, as described in the Bible's loaves and fishes story.

Legend has it that Tilapia was the fish that Jesus multiplied. The U.N. has agreed that Tilapia could still help feed the hungry worldwide.

Tilapia has a rich history as a farm-raised fish. Even before biblical times, hieroglyphic paintings and carvings show that Tilapia was a food of Egyptian pharaohs over 4,500 years ago. In biblical times, it was known as "musht," which is Arabic for "comb."

According to the Tilapia Marketing Institute, it was the fish caught by the disciples before they were called to follow Jesus, and the fish he miraculously filled St. Peter's net with in Luke 5:1-7. Today, in some parts of the world, Tilapia is known as St. Peter's Fish.

Joyce Rosencrans
Tilapia Farming Considerations - Tilapia the super-fish

There are many reasons for considering Tilapia farming. Tilapia offers many advantages over many other farm animals. Amongst these Tilapia’s rate of reproduction, resistance to disease and parasitic attacks, feed conversion rates, current and future markets’ demand. Additionally, farming settings which are not possible with other animals, i.e. cattle needs large extension of pasture, etc. while Tilapia farmers may choose different from farming settings in relatively small land. Tilapia offers great advantages and minor disadvantages. Overall, Tilapia is a good farmer option with great potential.

Tilapia anatomy and physiology

Tilapia fish have tiny combs located on their gills, called gill-rakers; these gills allows Tilapia removing organisms from water passing through their gills. Tilapia can filter organisms as small as 3 microns, which is about the size of human blood cells and the size of some viruses. This filtering is as efficient as possibly the best swimming pool filter in removing organisms from the water.

Tilapia effective digestion has no match; its acid content in Tilapia stomach is one of the strongest known in fish and allows them to efficiently digest a wide range of microbes, including diatoms, bacteria, fungi and other organisms. By simply dissolving their cell walls. The fish pharyngeal plates allows them to ‘chew on leaves’ or simply eat insects as any other omnivore fish. Tilapias have been shown to be able to digest up to 70% of ingested “mud” as it passes through the fish digestive system.

Tilapia immune system is resilient to disease, such as those found in catfish, trout, and most other fish. Prolific breeding and survival through mouth brooding is a relevant reason for breeding Tilapia fish. Imagine cattle that offered these two traits alone; quick reproduction and survival rates of over 95%.

At temperatures of 85 degrees F, they can produce baby Tilapia (fry) almost every week year round. The mouth brooding and maternal protection of the fry helps to create a high survival rate. Early sexual maturity adds even more value to Tilapia fish; most Tilapia fish matures sexually within 90 days when the fish reaches from 4 to 5 inches long and under 60 grams. This combination of continuous production and high survival rate, allows the Tilapia farmer to have a constant population of fry fish and lower farming risk.

Oreochromis Mozambicus Oreochromis Niloticus