

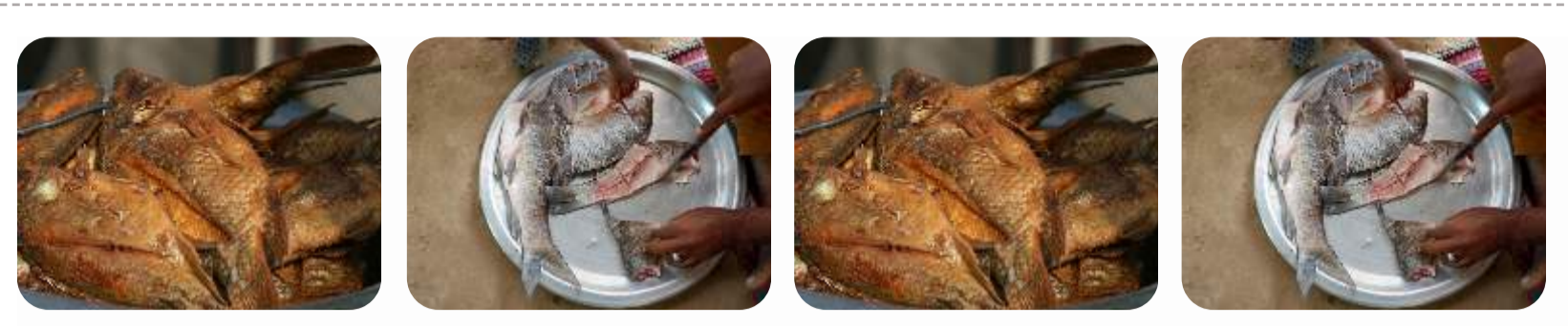


# Nile Tilapia

Common name: Nile Tilapia

Latin name: *Oreochromis niloticus*

Local name: بلطي



## INTRODUCTION

The Nile tilapia is an African freshwater fish that has been introduced into many countries inside and outside Africa. The journey of Nile tilapia started during the second half of the 20th Century, especially in Southeast Asia and the Americas, mainly for aquaculture and fisheries enhancement. Most of these introductions became well-established in aquaculture. As a result, the aquaculture of Nile tilapia has been expanding steadily in many countries. These fish play an important role in the livelihoods of local societies on different continents.

In Sudan, being common in the Nile, it constitutes an important part of Sudanese cuisine.

Wild, natural-type Nile tilapias are brownish or grayish overall, often with indistinct banding on their body, and the tail is vertically striped.

## LIVELIHOODS AND CULTURE

### Human interaction

Nile tilapia are endemic to Africa, they have been introduced into many countries worldwide, mainly for aquaculture and fisheries purposes. As a result, aquaculture of Nile tilapia is currently practiced in more than 80 countries and is now ranked third among the top-farmed fish species. Nile tilapia (*Oreochromis niloticus*) (Linnaeus, 1758) is, by far, the most widely cultured tilapia species, due to its economic value as one of the most important farmed fish species in the world. Nile tilapia can be a low-priced fish compared with other farmed fish, which feed on higher trophic levels. Therefore, it is sometimes considered food for the poor, or fish for the masses. In many locations, tilapia has played a significant role in rural development, poverty alleviation, hunger eradication and human health improvement in developing and least-developed countries. a source of affordable animal protein in many countries, improving the nutritional and economic status of local households<sup>51</sup>; and d) providing employment and increasing income, and playing a significant role in rural development and welfare Since Nile tilapia represents about 75% of total farmed tilapia production, it is fair to suggest that it represents a major source of locally consumed and traded tilapia. They are characterized by their fast growth rates, tolerance to extreme environmental conditions (such as temperature, salinity, pH, and low dissolved oxygen), high resistance to stress and diseases, trophic plasticity and feeding on low trophic levels, and ability to reproduce in captivity. These attributes make them ideal candidates for aquaculture worldwide.

### Cultural value

This species is harvested for human consumption. Nile tilapia is a common type of fish in the Nile system. Local people prefer it, and it can be cooked in different ways. Local people use traditional fishing tools and methods to support the local markets. While the local name of this species is "Bulty" other names are also used describing different fish sizes and appearance.

### Cultural expression

Many men, young and old, enjoy fishing for Nile Tilapia in places like Jebel Awliya.

In the local fishermen community, the tilapia is considered to be rather difficult to catch, as it travels in schools, cunning and bold.

There are names for the different sizes of tilapia. The smallest is known as *kafa*, which weighs around 250 gm. A mid-sized fish is called *Tiltawi* and is around 1kg. The biggest size, which is the most difficult to catch is *al Deek*. It can reach up to 3-4 kg, and a fisherman catching one without damaging its gills is considered to be highly skilled.

## THREATS

The main threats to the species are overfishing, as native stocks may be locally overfished, and hybridization.

## ECOLOGY

### Type:

Wild

### Role in Ecosystem:

Tilapia may pose adverse ecological and socioeconomic impacts on the ecosystems in which they are introduced. These impacts include habitat degradation and loss, disruption of native biota, reduction or eradication of native species, reduction in capture fisheries yield, competition for food and breeding sites with native species, hybridization with native species of tilapia, and spread of aquatic diseases.

## HABITAT

The Nile tilapia is native to larger parts of Africa, except Maghreb and almost all of Southern Africa. It is native to tropical West Africa, the Lake Chad basin, and much of the Nile system, including lakes Tana, Albert and Edward-George, as well as lakes Kivu, Tanganyika, and Turkana, and the Awash and Omo Rivers. In Israel, it is native to coastal river basins. It has been widely introduced elsewhere, both in Africa and other continents, including tens of countries in Asia, Europe, North America, and South America.



### Food

Herbivore

The Nile tilapia is mostly a herbivore, but with omnivorous tendencies, especially when young. They mostly feed on phytoplankton and algae, and in some populations other macrophytes also are important. Other recorded food items are detritus and aquatic insect larvae, including those of mosquitoes.



### Movement and Communication

#### Communication:

Nile tilapia produce common sounds (drum) and species-specific sounds (grunts and rolling).

#### Movement:

Nile tilapia travel in groups almost exclusively.



### Social Habits

Social

Groups of Nile tilapia establish social hierarchies in which the dominant males have priority for both food and mating. Circular nests are built predominantly by males through mouth digging to become future spawning sites. These nests often become sites of intense courtship rituals and parental care. Like other fish, Nile tilapia travel almost exclusively in schools. Although males settle down in their crafted nesting zones, females travel between zones to find mates, resulting in competition between the males for females.

Like other tilapias, such as Mozambique tilapia, dominance between the males is established first through noncontact displays such as lateral display and tail beats. Unsuccessful attempts to reconcile the hierarchy results in contact fighting to inflict injuries. Nile tilapia have been observed to modify their fighting behavior based upon experiences during development. Thus, experience in a certain form of agonistic behavior results in differential aggressiveness among individuals. Once the social hierarchy is established within a group, the dominant males enjoy the benefits of both increased access to food and an increased number of mates. However, social interactions between males in the presence of females results in higher energy expenditures as a consequence of courtship displays and sexual competition.



### Reproduction

Oviparous

Tilapia sexual maturity depends on environmental factors, age and size.

Nile tilapia reproduce through the mass spawning of a brood within a nest made by the male. These nests are usually built on the bottom of the water bed in water shallower than 3 feet. Female Nile tilapia, in the presence of other females either visually or chemically, exhibit shortened interspawning intervals. Furthermore, visual communication between Nile tilapia mates both stimulates and modulates reproductive behavior between partners such as courtship, spawning frequency, and nest building. Male fish fertilize with several female fish. In this process, after a short breeding ceremony, the female fish lays eggs in the nest (about 2 to 4 eggs per gram of productive fish weight), the male fish fertilizes the eggs and then the female fish removes and holds them in its mouth until the hatches. The hatched fish remain in the female fish's mouth until they consume the contents of their yolk sac. The young fry or eggs are carried in the mouth of the mother for 12 days.



### Attributes



#### Appearance:

Nile tilapia body shape is compressed on the side and they have long dorsal fins. The front of their dorsal fins is full of sharp bumps. These razors are visible on the ends of the dorsal fins and the anterior fins of the fish. Wide vertical lines are usually seen on juvenile stages and sometimes the body of the adult fish. As typical of tilapia, males reach a larger size and grow faster than females.

#### Size:

Up to 60 cm (24 in) in length, and

#### Weight:

can exceed 5 kg (11 lb)

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