

# 1. Food Fish – Tilapia

Common Name(s):

*Nile Tilapia, St Peter's fish*

Species: *Oreochromis Niloticus*



Tilapia are by far the most popular species in aquaponics. It is a hardy fish; tolerant to fluctuating water conditions and crowding, and resistant to disease. Tilapia are also omnivorous and can be grown very quickly to harvest size with little or no animal protein in the diet.

**History:** *Oreochromis niloticus* is the most popular species of tilapia for culture. Endemic to Africa and originally farmed in Egypt over 4000 years ago, tilapia is now cultured in over 100 countries and is 2nd only to carp in terms of global aquaculture production. No longer the 'poor mans fish' consumer popularity is increasing worldwide and there is now a large market in the US, South East Asia and Europe. Tilapia is a popular choice both for subsistence and commercial farmers due to its amazing capacity for domestication and tolerance of culture conditions. This has led to it being termed the 'aquatic chicken' a domesticated source of affordable protein that may be the most important aquaculture species of the 21st century.

**Physiology:** Body compressed and round, species is characterised by regular vertical stripes on the caudal fin. Greyish or black-green colouring with 6-9 indistinct vertical bars. Whitish belly.

**Diet:** Tilapia are omnivorous and, in the wild they feed mainly on phytoplankton, algae and aquatic plants. Complete pelleted diets, specifically tailored to tilapia, are available that are lower in fat than salmonid diets and contain less fish meal and oil in favour of plant based proteins. These diets can be supplemented with plant off-cuts as well as worms, soldier fly larvae, and other invertebrates.

**Growth Rate:** Tilapia can reach a harvest size of 500g after 6 months rearing within the optimal temperature range. Males grow faster and more uniform in size than females, thus all male cultures are preferable, and all male fingerlings are available from all major suppliers.

Nile Tilapia: 24-32°C

| D.O.<br>mg/l | pH<br>Units | Un-Ionised<br>Amonia mg/l | Nitrite<br>mg/l | Nitrate<br>mg/l | Hardness<br>mg/l | Alkalinity<br>mg/l | CO <sub>2</sub><br>mg/l | Salinity<br>ppt | Chloride<br>mg/l |
|--------------|-------------|---------------------------|-----------------|-----------------|------------------|--------------------|-------------------------|-----------------|------------------|
| 3-10         | 6-8         | 0-0.04                    | 0-0.4           | <50             | 50-350           | 50-250             | 0-30                    | 0-5000          | 0-5              |