

Testosterone in Tilapia – No Problem

Methyl testosterone is used in the production of tilapia to produce male tilapia. All male tilapia are preferred because male fish grow faster than female fish. Fry are fed a high protein diet containing methyl testosterone during the first 21 to 28 of hatching. During this time naturally female fish which are 50% of the population will be changed to male fish (success is usually 95% to 100%).

The fry are then transferred to nursery ponds where they are grown to fingerling size (20 to 50g) over a period of 30 to 60 days. Fish are generally ready for the market at 0.5lbs to 0.75lbs within 6 months from the fry stage.

Methyl testosterone is a substance which naturally occurs in the bodies of most vertebrates. It is naturally excreted from the body. It is only fed to baby fish (fry) during the first 21 to 28 days after hatching. The fish will be grown for another 5 months prior to harvest. Farmers generally purchase all male tilapia from hatcheries and do not usually sex reverse fish themselves. As a result of these factors there is no methyl testosterone present in the fish at the time of harvest.

Risk of MT on tilapia consumer:



Research findings have consistently shown that sex reversing tilapia with MT does not lead to accumulation of the hormone in the fish flesh after cessation of hormone treatment (Megbowon, 2011). Johnstone et al. (1983) revealed that whole fish body levels of MT were not detectable 100 h after withdrawal of the hormone treated diet. Guerrero (2008) further reported that hormone levels in tilapia falls to normal level five days after hormone feeding was stopped. Based on these and other scientific evidences, it is clear that MT is rapidly removed from fish and will not persist after several months of culture to market size. A conclusion can be drawn that the quantities of MT eaten by tilapia during sex inversion/reversal (fry treatment) is equivalent of 0.0-0.2 mg MT/fish represent less than 0.001% of the typical daily dosage of MT prescribed in human medicine (20-40 mg) and that even this minute quantities declines to less than 0.00001% of the daily human dosage a week after cessation of hormone treatment. It has been reported that the testes of an adult man releases about 15 mg of endogenous testosterone per day while about 10 mg of androgen are excreted daily (Shore and Shemesh, 2003). These do not harm man.

The short treatment duration and rapid metabolism of MT help ensure that tilapia is free of MT before fish reach the consumer. Digested MT is rapidly metabolized and excreted. This rapid metabolism and excretion of MT by a fish treated early in its life history, combined with the extended period needed to produce a marketable size fish results in a safe consumer product.

For more information, contact the

Fisheries Division

AQUACULTURE BRANCH

Twickenham Park

Spanish Town

Tel: 984-9343 or 984-9444

Fax: 984-5194

Email: aquabranh@micaf.gov.jm