

NMT/GMT®



Swansea Silver Fry and Fingerlings
Swansea YY X Swansea Silver
Uniform.



Manila Silver Fry and Fingerlings
Swansea YY X Manila Silver
Improved, fast growing.



Swansea Red Fry and Fingerlings
Swansea Red YY X Swansea Red



Tiger fry and fingerlings
Swansea Red YY X Til-Aqua



Til-Aqua fry and fingerlings
Til-Aqua YY X Til-Aqua
NEW: Wildtype WITHOUT black markings.
Ideal for sales as whole fish live or dead (no black color, also not after death!).
Very nice, unique color.
Good performing, uniform batches.



Supermale Tilapia GMT®



Natural Male Tilapia without hormones

- Normal all Male Tilapia
- No Hormones
- Resistant non-inbred fish
- Good performance and yield

Durante - Til-Aqua

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Supermale Technology

While the Nile Tilapia is widely grown and recognised as a good species for aquaculture, the problem of uncontrolled reproduction is a major disadvantage. As a result, energy is diverted from growth into interaction between the sexes, egg production and ultimately into young fish of negligible value in production. The use of monosex male fish for production avoids this problem.



Research shows that males grow much faster than females.

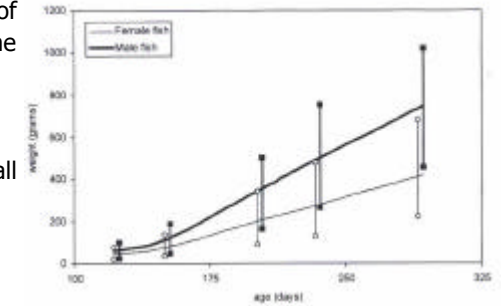
Through a sustained breeding programme, the University of Wales, Swansea and its collaborators have developed an innovative and robust new genetic technology for producing all-or nearly all-male progeny in the Nile Tilapia. Known as the "YY male technology" this takes the form of a breeding programme combining feminization and progeny testing, to produce novel males with YY genotypes (i.e. with 2 male sex chromosomes) instead of the usual XY male genotype. These YY males, known as "supermales", have the unique property of siring progeny with sex ratios exceeding 95% male. These progeny are termed genetically male tilapia (GMT[®]). They are normal genetic males and are **not** genetically modified organisms (GMOs). The hormone treatments used as part of the process to produce YY males are two generations removed from the fish that are consumed, so neither the GMT[®] nor their YY male parents are treated in any way. This is, thus, an environmentally friendly technology which requires no special facilities for application.

Comprehensive on-farm trials of GMT[®] have been conducted worldwide, in all major types of culture systems ranging from extensively managed earthen ponds through to intensive, tank based farms, and recirculation systems. The GMT[®] proved to have excellent properties for aquaculture, producing cost effectively significant increases in yield of uniformly sized fish and controlling reproduction in all the culture systems.

YY males, which are as viable and fertile as normal males, can now be produced in large numbers and are being used commercially to mass produce high yielding GMT[®] for tilapia producers worldwide.

Male- versus female body weight

Research at the University of Wageningen (The Netherlands)* shows that at around 300 days male fish have almost the double body weight of female fish. This difference become obvious after 150 days.



Genetically Male Tilapia are all Normal Male Tilapia!

Hormone use

The use of testosterone for sex-reversal has a strong negative effect on the immune system of fish**.

Male- versus female filleting

Males, with their firmer meat, are easier to fillet than females what results in a higher fillet percentage.

Separated Male - Female strains

Broodstock sets consist of a YY male and 3 females of another source. This avoids inbreeding and permits selection in two directions: in the supermale line (we have now our fourth generation supermales) and in the female line.

All our female lines are tested with our Supermale strains and they give > 98% males in all cases.

Heterosis effect

Our experiments show a positive effect as we use different strains for the two parents GMT[®] production. The result is a resistant, faster growing fish.

Strong, resistant fish

Our breeding method (heterosis) and our feed with additives (among other things Immune stimulants) ensure a super resistant fish.

*Rutten, MJM, 2005, Breeding for improved production of Tilapia. Doctoral thesis University Wageningen.

** Harris and Bird, 2000, Modulation of the fish immune system by hormones, Veterinary Immunology and Immunopathology 77 163-176