

Success Story: 17a-Methyl Testosterone: A Growth Promoter for *Xiphophorus Helleri* (Swordtail)

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The habit of keeping ornamental fish in aquariums for display and entertainment dates back. People kept vibrant tropical fish as a hobby in aquariums and garden ponds. Because of their vibrant body colors, unique morphologies, and eating habits, ornamental fish are living jewels. Fisheries is one of the major sources of animal protein for human consumption. Consequently, the raising and development of freshwater fish in aquaculture has received a great deal of focus. Various biological processes, including immunological responses, circadian rhythms, reproduction in vertebrates, sex differentiation, metabolism, immune system function, and stress response, are regulated by steroid hormones. Therefore, adding different kinds of steroids to the diet of cultivable fish becomes important. In commercial aquaculture, the application of high-protein diets for improving fish growth has been limited because of their high cost and their questionable contribution to the nitrogen load in the pond ecosystem. Many androgenic and estrogenic anabolic steroids, when taken with meals, promote growth and improve the efficiency of food conversion. Among natural androgens examined for fish growth augmentation, testosterone is arguably the most extensively researched. Common carp, Coho salmon, *Channa striatus*, and *Penaeus indicus* have all shown growth acceleration in response to it. Tilapia, goldfish, and all salmonids responded by gaining weight when 17a-methyl testosterone (MT), the most powerful androgen, was discovered.



17a-methyl testosterone



17a-methyl testosterone mixed pelleted diet



Xiphophorus helleri

Fish fry was fed @ 5% of body weight twice a day with various doses of 17α -methyl testosterone (30 mg/kg, 60 mg/kg, and 90 mg/kg, and control). The effectiveness of 17α -methyltestosterone on the growth and survival of swordtail fish fry was observed after 90 days. Except in 90 mg/kg diet feed fish, all fish groups observed maximum growth (weight and length) compared to others. The results showed that 17α -methyl testosterone has significantly favourable effects on swordtail. Fish were fed MT at doses that were almost identical to the lowest concentration. Potential contributing elements to the current might include the quantity of hormone-infused food or the duration of the feeding of fish. According to this study, feeding large dosages of the hormone resulted in greater growth inhibition. Findings from this study show that adding additional hormones to food lowers the survival rate. In order for the body to grow and operate correctly, it affects a number of bodily systems. In certain teenage boys who have delayed puberty, methyltestosterone can also be used to induce puberty. The 17α -methyltestosterone was also used to induce the sex reversal of Tilapia fish sp. to obtain cultures mono-sex to an economically viable.