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RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: Disposition and elimination of 17 α -methyltestosterone in Nile tilapia (*Oreochromis niloticus*)

Author(s): Lawrence R. Curtis, Fusun T. Diren, Michael D. Hurley, Wayne K. Seim, and Richard A. Tubb
Oak Creek Laboratory of Biology
Department of Fisheries and Wildlife
Oregon State University
Corvallis, OR 97131, USA

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Abstract: 17 α -Methyltestosterone (MT) is of potential use in commercial production of all male cohorts of food fish. Sexually undifferentiated *Oreochromis niloticus* received control ration or 30 mg MT/kg ration for 30 days. On day 31 control and MT pretreated fish received a single dietary dose of 3H-MT and were killed 1, 3, 7, and 10 days later. At 1 day after dosing only 2.5-3% of whole body 3H-MT residues were identified as parent compound. The concentration of residues remaining 1-10 days after 3H-MT dosing were similar in control and MT pretreated fish. 3H-MT whole body residues decreased logarithmically during this period and had a 1-day half-life. At day 3 after dosing, 95% of 3H-MT had been converted to polar metabolites, which decreased to 70% by 7 days, and to only trace concentrations by day 10. Five months after MT pretreatment control and pretreated fish received a single oral dose of 3H-MT and were killed 1, 3, 7, and 10 days thereafter. In both groups, concentrations of 3H-MT residues were biliary >> liver > kidney > muscle at all times points. Bile contained 97-99% polar metabolites of 3H-MT in all cases and appeared a major route of excretion. These data indicated MT was readily eliminated by *Oreochromis niloticus* and that the pretreatment regimen proposed for commercial use did not substantially alter disposition of subsequent doses.

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