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RESEARCH REPORTS

SUSTAINABLE AQUACULTURE FOR A SECURE FUTURE

Title: Masculinization of Nile tilapia (*Oreochromis niloticus*) by immersion in synthetic androgens: timing and efficacy

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Abstract: A variety of methods have been developed for producing single-sex populations of tilapia; however, dietary treatment with synthetic androgens such as 17 α -methyltestosterone is the most common technique. The objectives of our study were to determine the period at which masculinization via immersion can be accomplished, and to determine if multiple immersions during critical days can produce all-male populations. We also wanted to determine if masculinization via immersion can be accomplished on a large scale using fry collected from multiple families in spawning tanks. Fry were immersed in 500 $\mu\text{g l}^{-1}$ of trenbolone acetate (TA) for 3 h on days 12, 13, or 14 after fertilization (experiment 1) or in combinations of days between 12 and 15 days postfertilization (dpf; experiment 2). The results of these experiments confirm that significant masculinization of tilapia can be achieved through short-term immersion of fry in water containing synthetic androgens.

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Multiple immersions during the critical period of sensitivity consistently achieved greater than 80% masculinization. The results indicate that 3-h immersions are sufficient, and suggest that including an immersion on 15 dpf does not improve masculinization.

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