

Growth and gonadal development of female Nile tilapia (*Oreochromis niloticus*) exposed to sex reversing thermal treatment

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Abstract	<p>Nile tilapia is globally one of the most important food fish in aquaculture. It is a gonochoric species showing an enormous plasticity in sex determination. In response to exposure of genetic female fry to elevated water temperature between 10 and 20 days post hatching, corresponding to 14 to 24 days post fertilization (dpf), 37% were masculinized. Of control fry not exposed to thermal treatment all fish were females. Little is known about the dynamics of gonadal development in females that were thermally treated without getting masculinized. The present study addresses this question and investigates the effect of thermally induced sex conversion on overall growth rate. Beginning 90 dpf and until 240 dpf every 30 days 6 fish were sacrificed to assess growth and gonadal dynamics. Growth rate was highest in masculinized fish; the gonado-somatic-index (GSI) was higher in females, indicating development toward female gonads. Macroand micromorphological study of the ovaries at various stages of development revealed that there was no difference in ovarian dynamics between temperature-treated and control females. In the present study temperature-induced masculinization was effective in more than one third of genetic females in conjunction with a 45% increase in body mass at close to 8 months of age, without affecting ovarian dynamics in non-masculinized females. The latter may provide for successful production of progeny, while the former may positively impact feeding the world.</p>
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