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The effect of broodstock sex ratio on the reproductive performance of *Singidia tilapia (Oreochromis esculentus)* reared in hapasNyanchiri Elizabeth Mwikali¹, Raburu Phillip O¹ and Rasowo Joseph O²¹University of Eldoret, Kenya²Mombasa University, Kenya

Singidia tilapia (Oreochromis esculentus) endemic to Lake Victoria and once the most important commercial fish species in the Lake is now enlisted in the World Conservation Union Redbook (IUCN) of endangered species as critically endangered. To rescue this highly valued fish from total extinction, urgent conservational measures, including captive propagation and reintroduction are required. A 120 day experiment was undertaken to investigate the effect of different broodstock sex ratio on the growth and seed output of *Oreochromis esculentus* reared in hapas. Three different broodstock sex ratios: 1:1, 1:2 and 1:3 (male ♂: female ♀) of *O. esculentus* were tested using spawning hapas each measuring 4 (2×2×1 m³) suspended in an earthen pond (1000 m²) at a depth of approximately 0.5 m. Broodfish were stocked at a density of 6 fish/m² equivalent to 12 (6♂: 6♀), 12 (4♂: 8♀) and 12 (3♂: 9♀) fish per spawning hapa, respectively for the 1st, 2nd and 3rd experimental sex ratios. The broodfish were then fed with 35% crude protein feed. Female final weight at harvest was significantly different ($f=7.03$, $p=0.002$, $df=2$) among the different sex ratios with the 1M: 1F attained the highest. The 1♂:1♀ sex ratio recorded significantly ($f=4.21$, $p=0.019$, $df=2$) the highest average weight gain and 1 ♂:3♀ the lowest. Similarly, females in the (1 ♂:1♀) sex ratio produced significantly ($f=145.82$, $p=0.00$, $df=2$) more seed, followed by the (1♂:2♀) and (1♂:3♀) recording the lowest. Broodstock sex ratios also did not significantly affect female survival rates and all treatments had 100% survival rates. From the results of the present study, it is recommended to stock *Oreochromis esculentus* brooders in the spawning hapas at a sex ratio of 1male:1 female in order to obtain the highest growth and seed output.

Biography

Nyanchiri Elizabeth Mwikali has strong background training in Fisheries and Aquaculture. She has acquired B.Sc Fisheries, M.Phil Aquaculture and now undertaking her Ph.D in Fisheries and Aquaculture. Her expertise and passion is in fish breeding, conservation of endangered fish species and community empowerment. She has demonstrated passion for designing and re-engineering operational processes. As a Lead Consultant-Aquaculture value chain in Kenya, she has mobilized smallholder fish farmers to form cooperatives leading to increased income. I have a special talent in monitoring and evaluation to catch any errors before they ripple outside the production chain, prepare Enterprise Development Plans including costs of implementation, enhance Public Private Partnership (PPP), manage and oversee appropriate utilization of farmer grants. She has developed and expanded network, linkages and collaborations with farmers, institutions and other relevant stakeholders. She has also offered extension services to farmers on Best Management Practices in aquaculture and have taught at the University level.

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