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RESEARCH REPORTS

SUSTAINABLE AQUACULTURE FOR A SECURE FUTURE

Title: Sex reversal: The directed control of gonadal development in tilapia

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Abstract: Tilapia are becoming the most widely produced species of freshwater fish in the world. They can be produced in a variety of settings using a range of nutrient inputs. Males are the preferred sex to culture as they grow faster and divert less energy into reproduction. Males can be obtained using a variety of procedures but the most practical is through controlling gonadal development. Recently hatched tilapia fry have gonads that have not differentiated into ovaries or testes. It is possible to give such fish an exogenous source of hormone (androgen or estrogen) to control the development of the gonad. Fry less than 12 mm long can be harvested by seining along the edge of a spawning pond or from specialized spawning ponds where the pond is drained and harvested after 16-21 days. Proper size fish can also be obtained through a more intensive management approach where eggs are collected from the mouths of incubating females. Most commonly used approach to obtain male tilapia is to feed fry for 28 days or less a feed containing the androgen methyl testosterone. When fed properly the frequency of females in the population can be reduced to less than 5%. The short treatment duration very early in the fish's life history and rapid metabolism of methyl testosterone helps insure that tilapia are free of MT before fish reach the consumer. The production techniques associated with sex reversal are efficient and straight forward enough so that sex reversal has become the commercial procedure of choice to produce male tilapia fingerlings and has been a significant factor in the rapid growth of the tilapia industry.

This abstract was based on the original paper, which was published in D. Meyer (Editor), *6to Simposio Centroamericano de Acuicultura Proceedings: Tilapia Sessions, 22-24 August 2001*. Tegucigalpa, Honduras, pp. 35-60.

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