# Growth Comparison of Two Types of All Male Tilapia (*Tilapia niloticus*) Populations, in a Recirculating Aquaculture System

S.H. Sanders, B.G. Schatz, and V.L Anderson

Among aquaculture producers, all male populations of tilapia are preferred for growout operations. All male populations of tilapia have consistently grown more rapidly than mixed sex populations. There are two methods of obtaining all male tilapia. One method is to feed methyl-testosterone laced feed for the first thirty (30) days post-hatch (sex-reversed tilapia=SRT). The second is to breed Supermale (YY chromosome) males crossed with a normal (XX) female, resulting F1 offspring will be (XY) males (genetically male tilapia=GMT).

To investigate differences in growout performance, four groups of all male tilapia (*Tilapia niloticus*) populations were compared over a 16 week period. Three different SRT strains were obtained from commercial producers located in three distinct regions of the U.S. The fourth group of tilapia were GMT, supermales were obtained from Sterling, UK. Offspring were hatched at the Northern Aquaculture Center, the F1 offspring were used as the control group. The four treatment groups were stocked in 16, 250 gallon (945-litre) recirculating aquaculture systems (RAS), with four replicates per treatment. Fish were initially weighed and culled to 80 fish per system.

Fish were fed initially on a three percent (3%) body weight basis, three times per day (1% per feeding). Two week weigh outs were conducted to adjust feeding rates. Once each treatment reached a 30 g avg. weight, fish were fed three times per day to satiation. At this point the feed was changed from a 40% protein grower diet to a 36% protein floating tilapia diet. All RAS were maintained at 28 degrees C (+- 1 degree), and on a 16:8 (light:dark) photoperiod. Water quality (toxic ammonia, nitrite) was tested on a weekly basis, dissolved oxygen and temperature on a daily basis.

Initial starting weight among groups varied by as much as five grams (5g), ranging from 6-11 grams. Covariate analysis was used (ANCOVA), allowing data to be analyzed while taking into account a difference in initial weight among treatments. No difference in weight gain ($p=.12$), or feed conversion ratios ($p=.32$) were noted.

In conclusion, there were no differences among groups of SRT and GMT tilapia grown in research sized recirculating aquaculture systems. This is important to tialapia producers so they are able to run cost-benefit analysis, and choose the best source of fingerlings.