

ESTABLISHING MOSTLY-MALE BLUEGILL GROUPS AND EVALUATING
THEIR GROWTH BENEFITS IN INDOOR REARING SYSTEMS

Adam Jonathan Doerhoff

Dr. Robert S. Hayward, Thesis Supervisor

ABSTRACT

Male bluegill have the greatest potential to reach food market size (≥ 0.5 lb.; 225g) within two growing seasons. However, establishment of monosex, juvenile bluegill groups does not currently exist. A male-percentage prediction (MPP) model was constructed to predict the percentage of males from a mixed-sex, juvenile bluegill group. The MPP model enables reliable establishment of mostly-male groups for culturing. Trenbolone acetate immersions provided a means of establishing these groups other than by size-grading. Sex reversal often yields aggressively feeding fish which ultimately grow faster. Where male recruitment was successful, many post-immersion males exhibited higher growth rates. After establishing mostly-male groups, the goal is to reduce the agonistic social costs of group confinement to promote growth to food market size in two years. Mixed-sex and mostly-male bluegill groups were cultured in parallel to evaluate the effect of sex ratio on growth. Mostly-male groups yielded higher growth rates, but not greater social costs.