PD/A CRSP Eighteenth Annual Technical Report

Monosex Tilapia Production through Androgenesis

Ninth Work Plan, Reproduction Control Research 7 (9RCR7)
Abstract

William L. Shelton
University of Oklahoma
Norman, Oklahoma, USA

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A phenotypic marker in chromosome manipulation investigations is vital to interpreting induction results. During earlier studies on androgenesis in tilapias, males of the homozygous recessive color mutation (blond) in Nile tilapia (*Oreochromis niloticus*; Egyptian strain, Lake Manzala) were used as an induction control to verify that progeny carried only the paternal genome. Control crosses between blond males and normal colored females (Ghana strain) produced viable progeny, but survival of androgenotes (paternal, blond) was extremely low. Severity of the induction treatment and inbreeding of the blond mutant were considered possible factors. An alternative approach is being tested which involves another color mutation as the phenotypic marker. Red tilapia also originated from the same population (Egyptian strain, Lake Manzala), but the color mutation is a dominant trait. Thus, red females and Ghana males are being used since the relatively unselected paternal genome of the Ghana strain might be hardier. However, the inheritance of the color and the pigment development pattern must be verified through progeny testing. The color pattern of red × red and red × Ghana is now being examined. Broodstock of these phenotypes and in these combinations have been pair spawned during the latter part of this reporting period.

Cite as: [Author(s), 2001. Title.] In: A. Gupta, K. McElwee, D. Burke, J. Burright, X. Cummings, and H. Egna (Editors), Eighteenth Annual Technical Report. Pond Dynamics/Aquaculture CRSP, Oregon State University, Corvallis, Oregon, [pp. ___.]