Successful sex reversal of Greasy Grouper, *Epinephelus tauvina* (Forsskal, 1775)

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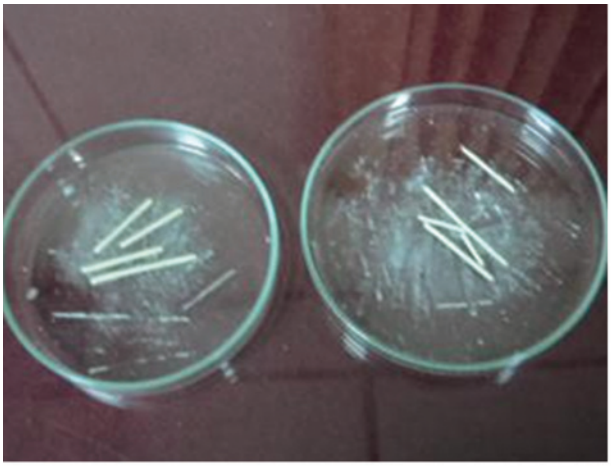
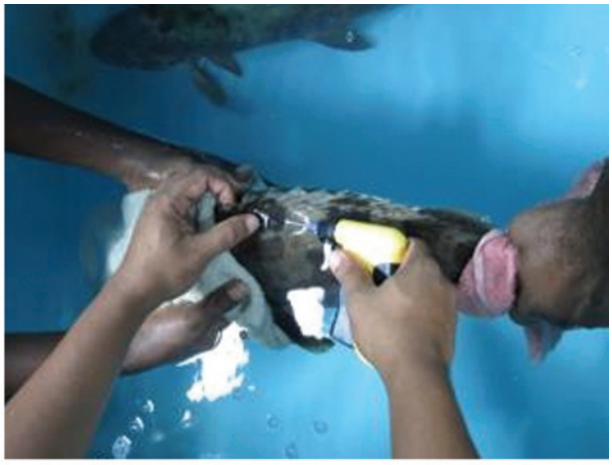
Large scale development of the grouper culture industry has been hindered by the lack of seed for stocking, which is due to the lack of a standardised method for controlled sex change and also due to the unavailability of mature male broodstock. Long term husbandry and maintenance of broodstock are

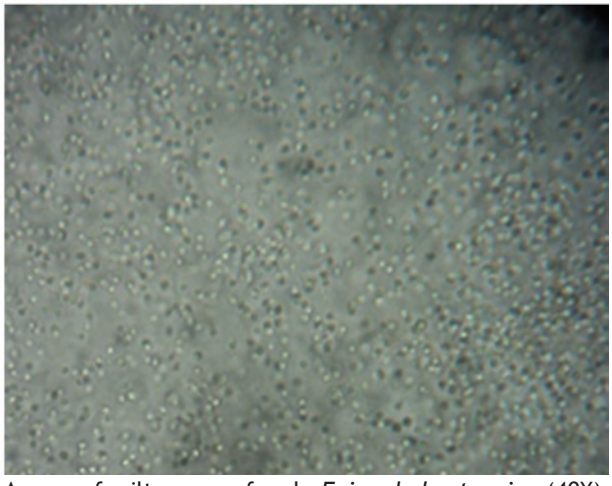


Hormonal and enzymatic pellets for implantation



Implantation of hormonal and enzymatic pellets

Cannulation of sex reversed male for milt collection



A snap of milt smear of male *Epinephelus tauvina* (40X)

time consuming and tedious, and consequently, the male broodstock for propagation is generally obtained by means of induced sex change at an early age. Therefore, induction of sex change in these species has been of great interest to aquaculturists.

E. tauvina is a protogynous hermaphrodite, which does not exhibit any externally distinguishable sexual characters. Being protogynous hermaphrodite, grouper gonad development undergoes sex transition from ovary to intersexual and then to testis; and primordial germ cells and different stages of gametic cells during oogenesis and spermatogenesis are synchronously observed in the transitional gonad (nonfunctional ovotestis). In protogyny, males may develop directly from the larval/ juvenile stage or may develop from adult females by sex reversal. With this backdrop, attempts were made for the sex reversal of greasy grouper to obtain male brooders for the captive breeding and seed production.

Successful sex reversal (female to male) was achieved with the hormonal and enzymatic manipulation. Twenty fishes were implanted with 17 α methyl testosterone alone or in combination with different doses of aromatase inhibitor enzymes (letrazole). Sixty percent of the implanted fishes were sex reversed male after 4 months with the implantation of hormonal and enzymatic combination. Periodic implantations of hormone and aromatase enzyme are being carried out once in two months to maintain the sex of male broodstock. These brooders were examined once in a month to assess the milt production. These sex reversed males were used for induced spawning of greasy grouper for seed production.