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A lesson in milkfish reproductive biology

Aquaculture Department, Southeast Asian Fisheries Development Center

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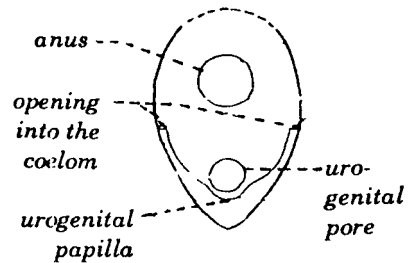
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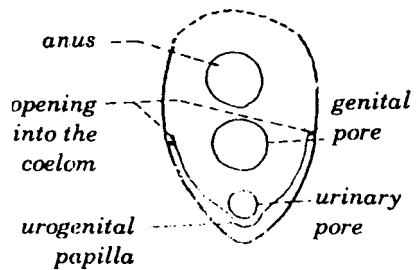
Captive milkfish mature and spawn naturally at about five years of age. Tank- or cage-reared adult milkfish weigh around 2.5-9.0 kg. Among captive females, the ratio of gonad weight relative to body weight (gonadosomatic index, GSI) ranges from 0.05% (immature) to 4.46% (mature). In contrast, mature ovary can take as much as 25% of body weight of wild-caught milkfish. Captive females produce an average of 200,000 eggs/kg. Immature captive males have a GSI of 0.1% that increases to 4.0% as maturity is attained.

In captivity, milkfish broodstock are immature in December and January, gonadal development begins in February and March, and spawning occurs from April to November. This pattern is consistent with the occurrence of milkfish adults, eggs, and fry in coastal areas. The spawning season appears to coincide with a long photoperiod and relatively high temperatures.

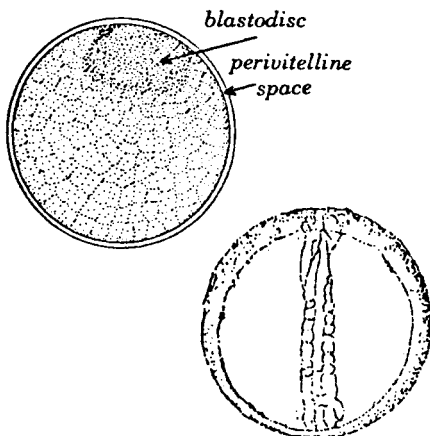
Male



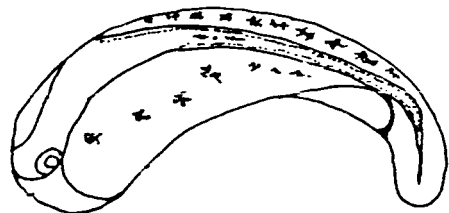
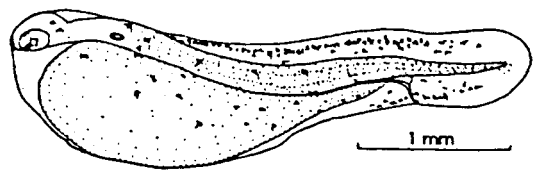
Female



Males and females can be differentiated based on their anal region.



A newly fertilized egg (1.1-1.25 mm dia.) and an egg with developing embryo.



A newly hatched normal larva and an abnormal larva.