



Long Whiskers Catfish *Mystus Gulio* Seed Advisory

How to select the broodstock fishes for spawning purpose?

- *Mystus gulio* is a commercially important brackishwater catfish locally known as “Nona tengra”. Kakdwip Research Centre, ICAR-CIBA has developed a Homestead Modular Hatchery Technology of nona tengra for quality seed production and for its grow-out farming.
- Brood fishes have to be quarantined before stocking in the broodstock holding tanks. Pathogen free broodstock fishes only can be used for breeding purposes to avoid the vertical transmission of disease in the hatchery.
- Fecundity of *M. gulio* is between 25000- 50000 eggs. Females with oocyte diameter of 750-800 micron are suitable for spawning induction to produce quality larvae. Therefore, healthy and good size (above 60g), high fecund broodstock fish are preferred for breeding purpose to yield more spawn .
- After spawning, the brood fishes or eggs can be removed and maintained separately since the brood fish has the habit of consuming the eggs .



Mystus gulio broodstock for captive seed production



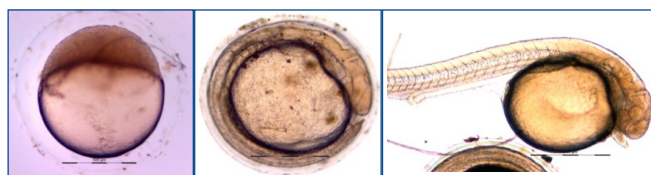
Male

Female

- An optimal latency period of 8-12 h is a good indicator of optimal breeding response to exogenous hormones.

Procedures to obtain quality eggs

- Eggs should be collected carefully for incubation. Size of fertilized eggs is an important indicator of seed quality. Eggs of *M. gulio* are yellow, without oil globules, spherical, adhesive and demersal. A fertilized egg size of 1.0-1.2 mm assures good larval quality.
- Fertilized eggs should hatch out in 17-20 h hours after spawning. Un-hatched/unfertilized eggs (dead eggs) in the incubation tanks should be removed to prevent infections.
- It is advisable to provide continuous flow through and aeration in the hatching tank to get better hatching rate.



Fertilized egg

Embryo

Newly hatched larvae



What are the indicators to select healthy larvae?

- The hatchlings measuring around 2.0-2.2 mm are of good quality and ensure good survival during larval rearing.
- First feeding should be initiated at 36 h before exhaustion of yolk sac at around 48 h. Hence, timely provision of live feed and initiation of exogenous feeding is critical.
- Larvae should be fed with Artemia nauplii from 36 h, and co-fed crumbled feed from 5 dph and exclusively crumble feeding should be given from 15 dph.
- Good larval survival and quality is assured by good management practices; optimal stocking density, 25 numbers per litre and good water quality management.
- A feeding frequency of four per day with Artemia nauplii @ 3000 numbers per litre is ideal.
- A larval rearing period of 30-35 days is required for obtaining a fry size of 48-50 mm.
- Differential growth can be also noticed to some extent and shooters to be removed to avoid possible cannibalism during larval rearing.

- Homestead Modular Hatchery Technology for quality seed production
- Healthy fertilized eggs are light yellow, spherical, adhesive, 1.0-1.2 mm in size
- Separate shooters to avoid cannibalism
- Fry exhibit burying nature

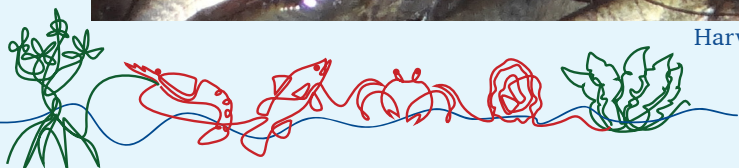
- After pond preparation, a stocking density of 10 no/ m² is suggested and the fry should be fed with pellet feed @ 8-5% of biomass.
- A culture period of 6-month should be practiced for fry to attain average marketable size of 50 to 60 g with production of 1.2 to 2.4 ton/ha.
- For high density farming at a stocking density of 10-20 no./m², Recirculatory aquaculture system-RAS system is suggested and polythene lined small backyard ponds (300 to 500 m²) will be an ideal practice.



Stockable size fry



Harvested fish



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