

# **MAHSEER CULTURE**



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## MAHSEER BREEDING



### 1. Introduction

- India is blessed with some of the world's best game fishes like mahseers.
- The mahseers as a sport fish that provide unparalleled recreation to anglers
- Important species of mahseer belong to the genus *Tor* in India. They are: Tor mahseer (*Tor tor*), Golden mahseer (*T. putitora*), Deccan mahseer (*T. khudree*), Humpback mahseer (*T. mussullah*) and Mosalmahseer (*T. mosal*), Chocolate mahseer (*Acrossocheilus hexagonolepis*), *T. neilli* and *T. progenius*.
- Freshwater fish inhabit fast flowing streams and rivers of the hilly areas, optimum temperature 10-20°C.
- They are omnivorous, feeding on algae, crustaceans, insects, aquatic weeds and their seeds but also fruits that fall trees overhead.
- Breeding season of Mahseer is Month of July to September depending on water temperature, velocity, pH, turbidity and rain.
- To conserve mahseer and develop sport fishing in India, the Government of India has been promoting the establishment of mahseer hatcheries in different states.
- Threatened species due to anthropogenic activities.
- In India, breeding technique, with or without hormone injection has been developed for *T. khudree*, *T. putitora*, *T. tor* and hybrid mahseer.

### 2. Broodstock care

- The maturing adults (3-5 years) are separated sex-wise in May and stocked in 400m<sup>2</sup> rectangular ponds with a soil base of about 20 cm.
- They could also be fed with a feed comprising of groundnut oil cake (25%), fish meal (25%), rice bran (25%) and rice flour (25%) at 2-3% of body weight daily.

### 3. Injection of brooders

- Two commercially available synthetic hormones, viz. ovaprim and ovatide are effective in inducing spawning.
- Identification of sex -morphological characters.
- Ripe female had a soft and swollen abdomen; the male readily oozed out milt with gentle pressure on abdomen.



**Identification of Sex of Mahseer**



**Injected With Ovatide**

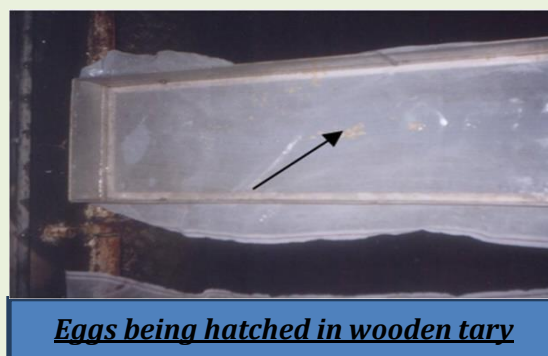
- Single dose of the hormone is administered intramuscularly to both male (0.2-0.3 ml/kg body weight) and female (0.6 ml/kg body weight).
- The injected females and males are held separately in nylon hapas (rectangular box-shaped containers) with flowing water.
- The females are periodically checked for their readiness for stripping

### 4. Stripping operation and fertilization

- Males are also stripped in the same manner such that milt of one or two males is sufficient to fertilize each batch of eggs.
- The injected females are examined every 6-12 hours following injection and the stripping operations are undertaken after the females ovulated.

### 5. Egg incubation and hatching

- At temperature 20-23°C, the eggs are incubated in rectangular wooden hatching trays with wire mesh at the bottom (150 cm x 20 cm x 10 cm), with running water.



**Eggs being hatched in wooden tary**

## 6. Fry rearing

- ✓ The swim-up fry are fed with egg yolk and sieved zooplankton (50 ml zooplankton for 346 fry; each ml contained 60 numbers) twice daily, morning and evening.
- ✓ Continued for 14 days after which the fry were transferred to 25 m<sup>2</sup> manured concrete ponds at a stocking density of 0.1 million / hectare.
- ✓ In ponds, the fry are fed ad libitum with a feed containing fishmeal (25%), ground nut oil cake (25%), ragi flour (25%) and chicken egg yolk (25%) for 53 days.
- ✓ The colour of freshly stripped eggs varied from bright orange in farm-raised fish to pale orange in wild caught females.
- ✓ The developing good eggs - orange or lemon yellow in colour; unfertilized eggs - opaque white and were periodically removed from the trays with a filler
- ✓ The fertilization rates -77-100%.
- ✓ The dry method of fertilization - better than the wet method
- ✓ The freshly stripped spermatozoa showed a motility rate of 95-100% and duration of 1-2 minutes when activated with tap water.
- ✓ The egg and embryonic developmental stages proceed normally.