Induced breeding and seed production of indigenous minor carp, Labeo dyocheilus (McClelland)

An important indigenous cold water fish species, endemic to the Himalayas and found in streams. Breeding and seed production technology would be helpful for stock augmentation in wild and species diversification in aquaculture.

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The fish is a bottom feeder inhabiting upland streams and rivers at an elevation of 400-800M. It is a medium sized, benthopelagic, potamodromous, freshwater fish. L. dyocheilus is mid distance cold water migrant fish. This species perform upstream migration in stream during May to June when water temperature rises in the stream. After rainy season in Aug-Sep, spent fish start downward migration.

No distinct spawning ground was identified for the natural breeding of this species. The body of these species is ordinarily white and more linear. It has relatively small head. Generally this fish is herbivorous in nature consisting 80% algae and debris in the gut content.

This species would be a new candidate species for mono and polyculture with carp either in pond or in floating cages in mid hills.

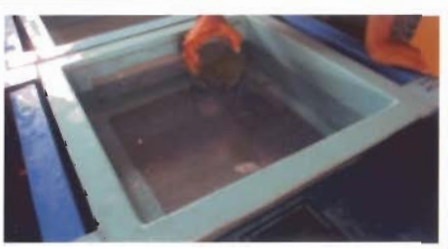
Liner Body

Inferior Ventral mouth

Flexible lower jaw for scrubbing

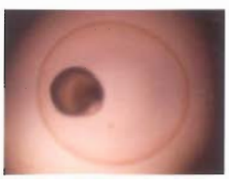
L. dyocheilus

- The brooders having the age 3+ years and body weight as 350-700 g show full maturity with eggs release and oozing milt during 3rd week of July to end of August in pond environment.
- GSI is ranged from 3.436±0.236 to 14.465±1.342in captive reared females and 4.254±0.325 to 15.864±1.435 in wild females.
- During spawning season females show soft and bulged belly with swollen light reddish vent.
- 18-22°C water temperature is suitable for the success of spawning and egg incubation.
- Spawning can be done in cloth hapa and in FRP tanks.
- Dry stripping method can also be applied with hormone treated females.
- Hormone dose of 0.6 ml kg^{-1}body wt. for females and 0.3 ml kg^{-1}body wt. for males is optimum for spawning with 84-98% fertilization and high rate of hatching (54-78%).
- Eggs can be incubated in trays placing in trough having flowing water.
- Eggs of the L. dyocheilus are creamy white in colour having the size in the1.24±0.12 to 1.38±0.14mm.
- The observed fecundity is 180000- 198000kg^{-1}
- The fertilized eggs remain semi adhesive and settled in the bottom.
- The average diameter of the fertilized egg renains 2.6-3.4mm.
- One liter of egg volume contains 39000 fertilized eggs.



The average size of one day hatchling remains 3.48±0.24mm, weighing 0.006 gm

Yolk material is absorbed in 72-78 hrs of hatching at 20°C temperature and larvae starts external feeding at 4th day. Natural Zooplankton or papain semi digested fish meal suspension can be given to the newly hatched larvae.



4hrs

8hrs

12hrs

16hrs

20hrs

24hrs

3 days

30 days

100 days

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