

Assessment of feasibility of cage culture in Umiam reservoir at mid-altitude region, Meghalaya through participatory approach

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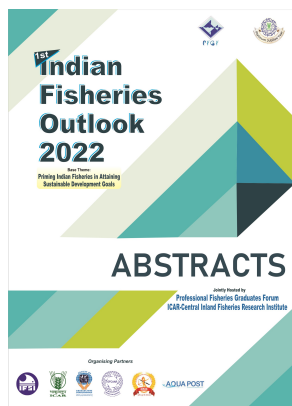
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Umiam reservoir (25°39'30" N and 91°43'51"E) is a small reservoir (water spread area 500 ha) located in Ri-Bhoi district in Khasi hills region of Meghalaya at an altitude of 900 m above mean sea level. There is no organized fishery in this reservoir and is an open-access capture fishery. Subsistence fishing and limited commercial fishing (using gill nets) is being carried out in the reservoir by local people (belonging to the Khasi tribe). We carried out cage culture trial in the reservoir for the first time during 2019-20 with participation of local fishers/ farmers under the Ri-Bhoi Farmers' Union. A battery of six CIFRI-GI net cages with individual cage dimensions of 5x5x4 m³/ cage was installed in the reservoir. Total area of the cages was 600m³ (effective water area: 540 m³). Advanced fingerlings of *Labeo gonius* (avg. 12.01 cm, 18.31 g), Amur common carp (avg. 11.09 cm, 20.4 g) and Koi carp (avg. 10.88 cm, 19.8 g) were stocked in the cages and fed with CIFRI-CAGEGROW floating feed (28% crude protein) twice daily @3-5% of their body weight. Growth and important water quality parameters were monitored regularly. Water quality was found to be suitable for fish production. Regular feeding and maintenance were done by the participating fishers. After five months of rearing, the maximum individual weights of *L. gonius*, Amur common carp and Koi carp were 217 g, 660 g and 665 g, respectively; their average growth were recorded as 93.05 g, 339.48 g and 258.40g, respectively. No disease incidence was observed with high survival rate (65-80%) even though the rearing period included the winter season (<20°C) in the mid-altitude region. The highest survival (%) of the reared fishes was observed for Amur common carp (80%) followed by Koi carp and the lowest was for *L. gonius* (65%). Final harvest from the cages directly benefited the participating fisher families. This trial showed that Amur carp, Koi carp and *L. gonius* can be reared successfully in cages in reservoirs located in mid-altitude region of Northeastern India for enhancement production, income, and livelihood generation.

Keywords: Cage culture, Carps, Umiam reservoir, Mid-altitude region, Meghalaya



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