

## CULTURE OF SOME ECONOMICALLY IMPORTANT SMALL FISH – A PROSPECTIVE APPROACH

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### Abstract

Composite culture today has taken a shape of industry for aquaplosion from domestic level where small fish like medium carps viz., *Labeo bata* (bata) and *Cirrhinus reba* (reba), hardly get any chance to occupy place therein though they fetch higher market price even at smaller size compared to same size of major carps. The fate of highly priced minnow, *Amblypharyngodon mola* (mola) is still worse which is designated as trash or weed fish before carp culturists and supposed to eradicate during pond preparation with fish toxicants. Further, indiscriminately use of pesticides in agriculture fields is another cause to deplete the population of these palatable commercially important small fish from natural ecosystem.

Culture of medium carps and minnow conducted at the farm of Wastewater Aquaculture Centre of Central Institute of Freshwater Aquaculture, Rahara was initiated since 1984 in paddy fields as well as in pond. In pond culture system, these species can equally provide comparable production as observed with major carps. Experiments in monoculture with medium carps employing double cropping method indicated bata production of  $6.2\text{t/ha}^{-1}\text{yr}^{-1}$  and reba of  $4.25\text{t/ha}^{-1}\text{yr}^{-1}$

While assessing the performance of medium carps in composite culture with major carps through several trials, it has been observed that bata contributed 18.02% while reba shared 16.62% of the total production of  $3.5\text{--}6.6\text{t/ha}^{-1}\text{yr}^{-1}$ . More trials on production with major carps and medium carps together indicated about 24.6% higher production over the production from major carps only ( $3.7\text{t/ha}^{-1}\text{yr}^{-1}$ ).

Successful rearing of these medium carps along with freshwater giant prawn (*Macrobrachium rosenbergii*) has also been achieved. Annual production of  $2.8\text{t/ha}^{-1}$  and  $1.82\text{t/ha}^{-1}$  was achieved where bata & reba fry were stocked respectively with prawn juvenile.

Further, culture of above mentioned species in paddy plots has shown promising results when they were cultured with other fish and prawn components. Fish production from modified paddy fields has been recorded as  $543.5$  to  $948.5\text{ kg/ha}^{-1}\text{yr}^{-1}$  of which medium carp shared 22.6 – 69.3%. Results focus comparatively higher revenue than that of obtained through culture of major carps alone from such unit area.

Mola, a carp minnow with extremely consumer's choice species especially in West Bengal, Orissa and Assam, may not be the right choice to culture in pond along with other carps as they are auto-breeder in confined water and take share for space, natural food as well as supplementary feed with major carps. With a view to avoid these factors, the species was introduced in modified paddy fields as need based culture system where major carps hardly grow normal size. Annual average fish production in paddy fields with mola and other fish species has been registered as  $823.3\text{ kg/ha}^{-1}$  of which mola contributed 6-9%, individual production being  $43.4\text{--}75.8\text{ kg/ha}^{-1}$ , averaging  $55.5\text{ kg/ha}^{-1}$ . Observations also reveal that the species offered 50–60 times number than the initial stocked number due to auto-breeding during monsoon in paddy plot.

Trials are also being made to propagate and culture of another most economically important small cat fish, *Ompok pabda* which has a tremendous demand with high market value and success has been achieved for its breeding and rearing.

India is bestowed with vast freshwater bodies apart from freshwater pond which are still unutilized. These water bodies can be utilized effectively in a remunerative way through culture of such small fish species where major carps do not get congenial atmosphere to grow well. Therefore, culture of these species not only provides scope to enhance vertical and horizontal expansion of aquaculture but also offers protein especially to the protein deficient community. Culture will also help to conserve these species from the edge of extinction or vulnerable status.