

MONOCULTURE IN FISHERIES

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In order to fulfill the single species based needs of food, scientific experiments and sports etc. single species of fishes are cultured in a fish farm/pond. At times, single species culture is promoted because of their high demand in markets. Thus, 'monoculture' refers to the culture and breeding of a single fish species in a farm. Breeding performance of a single species can be easily observed and recorded in a monoculture system. Additionally, it doesn't involve any competition for feed and space among fishes. The culture of trout, tilapia, catfish, and carps are typical examples of monoculture. Monoculture in intensive system is commonly practiced for high value, marketable fish species. It is the only method of culture used in re-circulating system, running water system and in cages wherever the supply of natural food is limited.

Categories of monoculture:

- Freshwater culture
- Marine water culture
- Brackish water culture

Advantages of Monoculture:

1. Easy to feed fishes.
2. Permits great control over size, age and sex.
3. Easy to monitor.
4. Selective harvest of marketable fish can be employed.
5. Suitable for farmers having limited land resources.

Disadvantages of Monoculture:

1. Natural productivity of pond is not fully utilized.
2. Available space/ ecological niches in water column are not fully utilized.
3. In case of disease outbreaks greater chances of yield loss are there.

4. Cannibalism may also be possible among fish.
5. More risk of regression in water quality like dissolved oxygen depletion.
6. Due to the dependence of fish species on natural food as in common carp fry, fish growth is affected in case of shortage of natural food.

Cultivable fish species in India:

- **Indigenous species:**

Catla catla, *Labeo rohita*, *L. calbasu*, *Cirrihinus mrigala*, *C. cirrhosa*.

- **Exotic carps:**

Hypothalmicthys molitrix (silver carp), *Cyprinus carpio*, *Ctenopharyngodon idella* (grass carp)

Characteristics of cultivable fish species:

- They must possess fast growth rate.
- They should be able to feed on cheap artificial feed.
- Hardy fishes should be preferred.
- They must have high tolerance against adverse physico-chemical water parameters.
- They should be disease resistant.
- The fishes should be of good nutritional value.
- Easy to harvest.
- They should be prolific breeder.

Suggested References:

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