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Culture of fishes in running water

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Abstract

To create a facility with flowing water that is reliable for producing fish and is the right temperature and quality to modify the chemical, physical, and biological elements in order to increase fish output.

Introduction:

In terms of fish oxygen consumption, the water needs for intensive fish cultivation have been extensively studied (Haskell 1955; Willoughby 1968; Piper 1970; Westers 1970; Liao 1971). An improved method of fish farming that uses moving or rushing water in raceways to support the raising of a considerably denser population of fish. to create a facility with flowing water that is reliable for producing fish and has the right temperature and quality. to improve fish output by manipulating the chemical, physical, and biological components. To preserve water quality. Fish culture systems can be divided into four categories: open ponds, cages, raceways, and recirculating systems. In terms of culture performance, water purity, managerial simplicity, and financial returns, each method offers benefits and drawbacks. Traditional raceways in fish production are enclosed channel systems with relatively fast water flow rates. Raceway systems provide particular advantages over other cultural systems because of the rapid water movement

Types of tank/Raceways:

The most common raceway type is a tier system raceway. Most of the cement River culture: based on the flow of the river, Closed-loop system with tanks for weed cultivation in an earthen pond.

The raceway system—also referred to as a flow-through system—was created as the initial method of supplying aquaculture in inland areas. To maintain the required levels of water quality, water is moved through the aquaculture structure using the raceway. The newest raceway technology is used in the PAS (Partitioned Aquaculture System), which uses a number of raceways inside the aquaculture construction. Since enormous amounts of

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water must be pumped at regular intervals to maintain good aeration, sufficient aeration for raceways is typically expensive.

Raceway type tank:

Aquaculture production has long utilised water flowing in open channels. These include drainage ditches, raceways, and distribution canals. Rectangular boxes of various sizes can be built to make up In-Pond Raceways. Much smaller than ponds and take up much less territory. mostly made of cemented bricks or reinforced concrete The availability of water is crucial. The size of running water tanks is not fixed. A raceway can have segments that are up to 30 metres long, 2.5–3 metres wide, and 1.2–1.2 metres deep. A raceway farm comprises of at least 15-20 segments, many of which have side slopes of 1:1 or 1:0.5. It is situated at a higher height so that water can flow by gravity force into a subsequent tank. Water feeding channels are used to fill the series of tanks. For optimum water replenishment, running water tank inlets and outlets are diagonally positioned. There is an exit for removing uneaten food and faeces to the following tanks at the bottom of the flowing water tank. Fish metabolites and uneaten food materials can be easily dumped into the bottom outflow of the flowing water tank thanks to the sloppy flow.

Feeding:

Feeding times and rates (as a percentage of body weight per day) are more influenced by the species being raised than by the cultural method. Examine additional SRAC material on the relevant species for details on feeding rates and timing. Because the management can observe fish eating and ascertain whether any feed is being wasted or going uneaten, floating feed is advised for the IPR. The use of sinking feeds, including medicated feed where appropriate, is permitted by the IPR. See SRAC for details on how to determine feed rates.

Disease treatment:

In raceways, disease management typically involves drip therapy. A precise concentration of the therapeutic substance is maintained in the incoming water for a set amount of time, typically an hour. This approach has issues with concentration maintenance, the amount of therapeutant used, and the amount of therapeutant released into the environment during discharge.

Conclusions:

A tank or channel with a continuous water flow that has been built specifically for high-density fish farming. Multiple fish species have been successfully cultured using the IPR. Depending on the market value of

particular species, the cost of production (taking capital costs into consideration) may be too high for their cultivation. IPRs won't likely replace the open-pond culture approach used to raise catfish or the majority of other species as it is currently done. Although cage culture is impractical, it might have a place in production in public waters, quarries, and watershed ponds. IPRs might also be practical in situations requiring the collection or mitigation of wastes or the exploitation of high-value niche markets.

Reference:

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2. Westers, H. 1970. Carrying capacity of salmonid hatcheries. Prog. Fish-Cult. 32:43-46.
3. SRAC Publication No. 164, Cage Culture – Handling and Feeding of Caged Fish.