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Hatchery processes for producing yellowfin Tuna with reference to the production of bluefin Tuna

Gidon Minkoff

Teleostei Hatchery Consulting Ltd., Canada

The yellowfin Tuna, *Thunnus albacares* (YFT), has very good aquaculture prospects. Research and development work has already been carried out on both the cage farming as well as the hatchery rearing of this species. Notwithstanding, probably the most important attribute of YFT, within the context of current world-wide efforts to achieve regular hatchery production of Bluefin tuna (BFT), is that these species share many important early life history traits. Many parallels can be found over a wide range of morphological, behavioral and physiological development patterns, such that they require very similar husbandry procedures to bring them through metamorphosis. Included are the requirements for keeping the larvae from sticking to the surface at first feeding (days 2-3 post hatch), or from sinking to the bottom of the rearing tanks between days 4-8 post hatch, feeding on newly hatched larvae after day 12 post hatch and providing conditions that will overcome their cannibalistic tendencies once they arrive at metamorphosis. For developing hatchery protocols, YFT has one major advantage over BFT which is that YFT can be readily adapted to spawning in captivity. Furthermore, YFT spawn continuously as long as temperatures remain between the range of 23-29°C. Due to the developmental similarities as well as the repeat spawning pattern, the study of YFT production has the potential to shorten the time required for developing a reliable BFT hatchery technology.

gminkoff@gmail.com

Zebra fish: A biological model organism

Heiko Bleher

Aquapress Publishers, Italy

In 1822, when the Briton Francis Hamilton first described a certain small, longitudinally-banded fish as *Cyprinus rerio* (today *Danio rerio*) from the Kosi River in India and assigned it a so-called *Danio-division* (named after the Bengalese name *Dhani*) he can have had no idea of the popularity this little cyprinid would eventually achieve. It was first imported for the aquarium hobby in 1905, and christened “zebra danio”, the name it still bears today. In universities and research laboratories it was established in the early 1980s as “Zebra Fish” and became a model organism for studies of vertebrate development, developmental biology and some human genetic diseases after Streisinger’s pioneer work at the University of Oregon with wild fishes collected by Bleher in Assam. With the result those 15 years before Dolly the Scottish sheep achieved fame; Zebra Fish had been cloned at this University being the first vertebrate cloned in history. Today, over 5,000 researchers in 450 labs throughout more than 30 countries study Zebra Fish. And the author will not only talk about recent successes with this 3-5cm long fish but also about other tiny fish species with amazing scientific under estimated results in seeking solutions to diseases which affect humans.

heiko@aquapress-bleher.com