

GENETICALLY-IMPROVED ROHU IS COMMERCIALY AVAILABLE AND IN HIGH DEMAND IN BANGLADESH

By Matthew Hamilton, Mohammed Yeasin, Md. Rayhan Ali, and Md. Fakhruddin

Rohu is the most widely cultured carp species in Bangladesh, but until recently, genetically-improved strains of the species have not been widely available to farmers. That is changing.

Genetically-improved WorldFish Generation 3 (G3) rohu hatchlings were released to commercial hatcheries in 2020-2021 to be grown into broodstock. Many of these fish are now mature and commercial sales of their offspring commenced in 2022.

Abdul Alim is the owner of Mukteshary Fish Hatchery in Jashore who received G3 rohu in 2020.

“Gradually, I developed them as broodstock and produced seed in 2022 for the first time,” Alim said.

Alim found that the demand for G3 rohu from nurseries and farmers was high.

“I produced 68 kilograms of spawn in 2022 and sold them for a premium price—three times the conventional rohu seed,” he said.

The results of [on-farm performance trials](#) indicate why Alim's spawn were so highly sought after. G3 rohu grew, on average, **37% more rapidly** than unimproved fish across 19 semi-commercial farms. These trials formed part of a Feed the Future Innovation Lab for Fish activity led by WorldFish, Bangladesh Agricultural University, and the Louisiana State University Agricultural Center. Additional support was provided by the CGIAR Resilient Aquatic Food Systems for Healthy People and Planet initiative, the Bill and Melinda Gates Foundation, and the Feed the Future Bangladesh Aquaculture Activity.

G3 rohu broodstock are held by over 30 hatcheries across Bangladesh, and more hatcheries are expected to adopt this product in 2023. Eight hatcheries produced spawn in 2022, and altogether they sold 245 kilograms of spawn to 183 aquaculture enterprises, including 104 nurseries. In late 2022, nurseries commenced selling fingerlings and are projected to serve thousands of farmers by mid-2023.

In 2022, spawn production was concentrated in southwest Bangladesh within the USAID Zone of Influence. However, spawn was sold nationwide with shipments made to customers as far away as the Sylhet Division in the far northeast of the country.

As existing broodstock mature and increase in size in the coming years, the availability of genetically-improved rohu for purchase by nurseries and farmers will rapidly increase across Bangladesh.

“I hope additional brood will reach maturity next year and gain more weight,” Alim said, “so I will be able to produce more in 2023.”



Abdul Alim (right) is handing over a bag of WorldFish G3 rohu spawn to a customer. (Photo by Md. Masud Akhter)

PROJECT TEAM

Lead PI

Matthew Hamilton, PhD
WorldFish

Lead Co-PI

John Benzie, PhD
WorldFish

Bangladesh PI

Mohammed Yeasin
WorldFish

Bangladesh Co-PI

Mostafa Hossain, PhD
Bangladesh Agricultural University

U.S. PI

Terrence Tiersch, PhD
Louisiana State University Agricultural Center

While G3 rohu are becoming increasingly available in the market, efforts are continuing to develop the next generations of rohu (i.e., G4, G5, and so on) that will exhibit even more rapid growth. Additionally, WorldFish is in the process of producing genetically-improved strains of catla and silver carp. With the future release of advanced generations of rohu and other species, significant improvement in the productivity of carp polyculture systems in Bangladesh is anticipated.

The “Advancing Aquaculture Systems Productivity Through Carp Genetic Improvement” team would like to thank the Department of Fisheries of Bangladesh and all partners and stakeholders for their support in conducting trials and disseminating WorldFish G3 Rohu. It also proudly acknowledges donors that have supported the WorldFish Carp Genetic Improvement Program since its inception in 2012: USAID, CGIAR Trust Fund donors, Bill and Melinda Gates Foundation, International Fund for Agricultural Development, and European Commission.

ABOUT THE FISH INNOVATION LAB

The Fish Innovation Lab supports the United States Agency for International Development’s agricultural research and capacity building work under Feed the Future, the U.S. Government’s global hunger and food security initiative. Mississippi State University is the program’s management entity. The University of Rhode Island, Texas State University, Washington University in St. Louis, and RTI International serve as management partners.

www.feedthefuture.gov
www.fishinnovationlab.msstate.edu