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Research team is first to farm Queensland giant grouper in Europe using a recirculating aquaculture system

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By Responsible Seafood Advocate

Researchers farmed Queensland giant grouper in Europe using recirculating aquaculture system, proving its potential for commercial growth

A German-led team of researchers has achieved a milestone in aquaculture, successfully farming the Queensland giant grouper (*Epinephelus lanceolatus*) in Europe for the first time.

The project, led by the Helmholtz Centre for Polar and Marine Research (AWI) in collaboration with Oceanloop, Sander and Australia-based Ecomarine, relied on recirculating aquaculture systems (RAS), a technology that could help expand land-based seafood production.

As part of the Opi-RAS initiative, which seeks to optimize these systems for commercially valuable species, scientists transported 3-gram juvenile groupers from an Australian hatchery to Germany, demonstrating the feasibility of long-distance live fish transport – a key step for future commercial
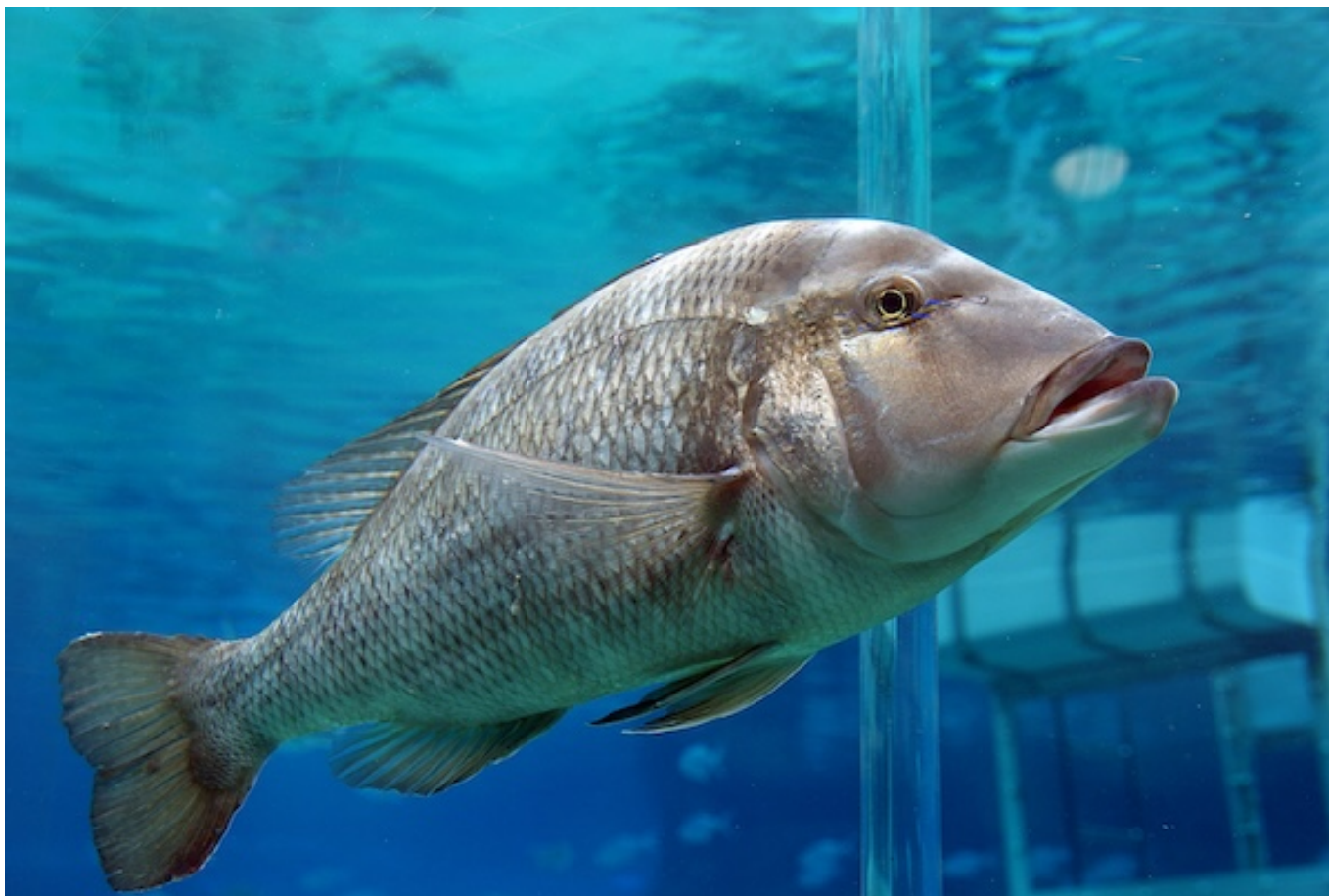
A German-led team of researchers achieved a milestone in aquaculture, successfully farming the Queensland giant grouper in Europe for the first time. Photo credit: Bernard Spragg. NZ (https://www.flickr.com/photos/volvob12b/18919768770/) from Christchurch, New Zealand.

production.

The research team conducted extensive trials to refine feeding strategies and determine optimal stocking densities for the Queensland giant grouper. The results were striking: the species thrived even at high densities, with no adverse effects on growth or health. Stocking densities ranging from 132 to 440 pounds per cubic yard produced strong feed conversion rates and maintained high standards of animal welfare.

Survival rates reached an impressive 99 percent, with fish growing to 6.6 pounds within their first year while achieving an economically efficient feed conversion ratio (FCR) of 1.0. Moreover, stress markers such as cortisol, glucose and lactate levels showed no significant fluctuations, reinforcing the species' resilience to intensive aquaculture conditions.

The innovation extended beyond farming methods to nutrition, with the consortium developing a specialized feed tailored to the Queensland giant grouper's needs. Formulated with over 50 percent protein and less than 15 percent fat, the custom diet led to notable improvements in growth rates, feed efficiency and fillet yield. Designed and tested at Oceanloop's research and development facility in Kiel, Germany, the feed outperformed initial predictive models, further enhancing the species' viability for large-scale, land-based aquaculture.

The search for sustainable grouper farming

In targeting grouper for new and sustainable farming technology, the authors developed an oral vaccine to control nervous necrosis virus (NNV) infection at the larval stage and multivalent injective bacterial and viral vaccines for the grow-out stage.

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With the success of the pilot phase, the project has moved into commercial production under the "Good Grouper" brand, managed by Honest Catch. The first market introduction took place at Ikarus, a Michelin-starred restaurant in Salzburg, Austria, where the fish made its debut as a proof of concept.

Following its well-received launch, Honest Catch rolled out a direct-to-consumer sales strategy through its e-commerce platform, where the grouper's exceptional quality and taste quickly gained traction. Strong market acceptance suggests a promising future for farmed Queensland giant grouper in European seafood markets.

Supported by funding from the German Federal Ministry of Education and Research (BMBF), the consortium is now focused on further refining its farming methods for Queensland giant grouper in recirculating aquaculture systems.

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