

# Aquaculture research

CSIRO Agriculture and Food

Dedicated  
Australian  
aquaculture  
facilities

More than 40  
specialised staff

Delivering  
domestic and  
international  
impact

Cutting-edge  
scientific  
capabilities

# Improving the quality, productivity, profitability and sustainability of the Australian and global aquaculture industry.



INPUTS



PRODUCTION

CSIRO Agriculture and Food through its Aquaculture Program aims to boost the value, competitiveness and sustainability of Australia's approximately AUD\$1 billion aquaculture industry. Our history spans 25+ years working directly with the aquaculture industry in Australia and overseas, concentrating on pre-farm gate innovations and delivery.

We focus on farmed finfish, crustaceans and molluscs. Our research improves food production from aquaculture species through integrated studies of genetics, physiology, health, aquafeeds and environment.

Our research is assisting Australian producers to keep aquaculture stocks healthier, increase productivity and deliver the highest quality products to Australian consumers.

Our work is helping the aquaculture industry to compete internationally, work efficiently, and secure a sustainable future.

Working with CSIRO provides access to world-class research capabilities across the value chain, beyond the farm, in digital technologies, and all the way to your customer's plate.

**Applied breeding and genomics is partnering with the aquaculture industry to develop selective breeding programs for finfish, molluscs and crustaceans.**



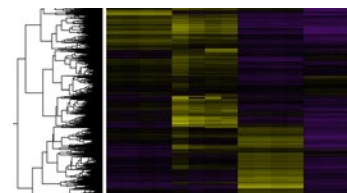
Applied breeding has increased natural resistance to Pacific Oyster Mortality Syndrome (POMS), a disease threatening the Pacific oyster industry. Higher survival has reduced stock losses and lifted productivity.



Selective breeding of the white legged shrimp with our commercial partner Việt Úc is producing genetically elite juveniles for the Vietnamese growout industry. Superior performance, year on year, has improved growth and profitability.



Our salmon selective breeding program now uses genomic prediction, which assists farmers grow fish faster and with fewer interventions to manage disease. This has resulted in a more efficient and sustainable industry.



Our 'omics' research is delivering novel insights into traits such as fish maturation, product quality, reproduction, sex determination and disease etiology that will drive future breakthrough technologies.



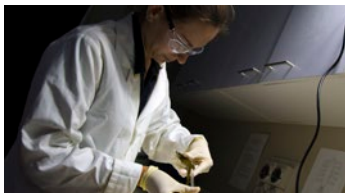
**Health and production systems** to improve aquaculture productivity and product quality through research excellence in disease management and profitable farming technologies.



The mitigation of amoebic gill disease (AGD) is a significant focus, through innovative next-generation treatments and new management practices, informed by in-depth knowledge of the parasite, host and environmental interactions.



Numerous benefits of automation are being explored via machine learning, precision sensors, augmented reality and wearable data collection devices to improve system health, production efficiency and eventually profitability.



Injectable double strand RNA molecules targeting specific pathogens are reducing viral loads in shrimp to generate elite pathogen-free broodstock.



Shrimp Multipath is an advanced detection system for shrimp pathogens that can detect most commercially relevant pathogens in a single test with the greatest accuracy and minimum cost.

**Nutrition** to develop better feeds that optimise product quality, growth and health for industry and consumers.



Our team has expertise in shrimp propagation, husbandry, and experimentation on shrimp and fish. We combine this with expertise in and knowledge of particular aquaculture industry sectors to meet the needs of our clients.



We have a team of formulators and one of the few laboratory scale feed extruders in the country making us unique in our ability to produce industry relevant feeds for both our own research and clients.



Our laboratories house world-class analytical instruments, and extensive gene expression and proteomic databases. These facilities and our dedicated staff enable us to stay at the forefront of international research into aquaculture nutrition.



Our research focuses on assessing the palatability, digestibility and utilisation of various feedstuffs, refining the nutritional requirements, and the development of feed additives, for species of domestic and global significance.

# Collaboration for impact

Working with CSIRO Agriculture and Food provides access to comprehensive scientific and industry expertise from the gene to the plate.

Our diverse range of partnerships foster a shared vision to create measureable economic, environmental and social impact.

farmers | agribusiness | industry | researchers  
universities | philanthropic organisations  
research and development corporations  
national and international governments



## CONTACT US

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## WE DO THE EXTRAORDINARY EVERY DAY

We innovate for tomorrow and help improve today – for our customers, all Australians and the world.

**WE IMAGINE**  
**WE COLLABORATE**  
**WE INNOVATE.**

## FOR FURTHER INFORMATION

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