



# aquaculture product evaluation





## improving productivity

**commercial aquaculture products** Aquaculture operations can benefit from a range of products that improve health and reduce disease to increase productivity. Such products include fish vaccines, veterinary medicines, immunostimulants, feed additives and biocides. All of these products are however subject to strict national and international regulatory controls. They are required to be demonstrably safe and must undergo thorough evaluation for safety and efficacy before they can be approved for commercial use.

Successful product development requires substantial investment in specialist equipment, facilities and expertise. We provide these specialist services and work with our customers to develop safe, productive and profitable new products.

**international expertise** CEFAS offers a range of development and assessment services for all major types of aquaculture products used internationally. We have contributed to the development of numerous vaccines, veterinary medicines and feed additives being used by aquaculture operations around the world.

We provide our clients worldwide with a range of services based on a wealth of experience, wide ranging expertise, modern facilities and internationally recognised disease reference resources. Client confidentiality, a high quality service and impartiality are assured.



## achieving product approval

**regulatory advice** We use our wide experience of the many regulatory frameworks to provide advice to feed, feed component, vaccine, veterinary medicine and disinfectant manufacturers on obtaining product authorisations from the appropriate regulatory authorities.

Our services include advice on registration procedures and experimental requirements, as well as expert assessment of safety and efficacy dossiers required for the regulatory approval of products destined for the aquaculture market.

**scientific evidence** Legislation frequently requires that products and additives need to be demonstrably safe and that any claims made by companies about their efficacy and benefits are supported by scientific evidence.

CEFAS specialises in efficacy and safety trials providing evidence for product regulatory approval. A range of *in vitro* and *in vivo* test models have been developed and validated, these are available for testing all types of products. We have the staff, facilities and quality assurance systems (including GLP and ISO 17025) to provide experimental evidence of the highest scientific quality. This includes the authorisation of new products, changed formulations or reauthorisation.

We aim to deliver innovative and cost-effective research solutions to practical issues for our customers.



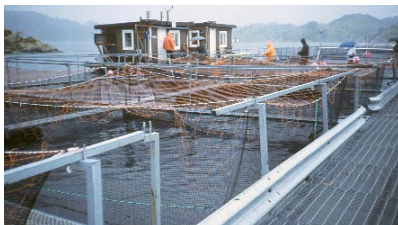
## high quality product testing services

**laboratory testing range** Our product safety and efficacy testing services are available for a range of products intended for the aquaculture market including disinfectants, feed additives, probiotics, prebiotics, immunostimulants, vaccines, fungicides, antiparasitics, antibiotics and other pharmaceuticals. Our tests follow detailed protocols and procedures, complying with the requirements of relevant regulatory texts and providing high quality data for registration packages. Where protocols are not specified, we can advise on their design.

Examples of our specific tests include disinfectant testing to specified standards, finished product batch testing, target safety, residue depletion and radio-labelled metabolism studies, and efficacy testing against diseases from around the world.

**facilities** Our modern GLP compliant aquarium facilities provide excellent flexibility to accommodate all trial requirements. We have over 200 computer controlled tanks in 14 isolation suites suitable for a wide variety of marine and freshwater fish species.

As a National Reference Laboratory we are uniquely placed to ensure the health status of all test fish, and have a number of sources of specific pathogen free fish for specific protocol use. We are the Office International des Epizooties (OIE) Collaborating Centre for Information on Aquatic Animal Diseases. Our media preparation services are ISO/IEC 17025 standard accredited.



## wider capabilities

**maximising product benefits** We provide advice on maximising product benefits through optimum feeding strategies, use of diet supplements, fish disease management and fish movement. This can significantly reduce long-term costs and increase productivity and yields in aquaculture.

Scientific trials, tailored to customer requirements, can be run over a wide variety of timescales and conditions in our world-class facilities to determine when product attributes are optimised.

**field testing** Our veterinarian and statistical experts can provide sound scientific advice on the design, monitoring and evaluation of large-scale field trials for data packages for licensing purposes.

**environment and fisheries expertise** Our product evaluation and consultancy services form part of our worldwide role in aquaculture, fisheries and environmental management, which gives us a broad based, authoritative approach to our research, advice and recommendations. We work with stakeholders on all aspects of environmental impacts, fish cultivation, disease diagnosis, management, cure and prevention, fish productivity, health and welfare, and wider impacts on human health.

We aim to provide our clients with practical solutions to enable the continual development of sustainable aquaculture.



*contact us*

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### **about us**

CEFAS is a multi-disciplinary scientific research and consultancy centre providing a comprehensive range of services in fisheries management, environmental monitoring and assessment, and aquaculture to a large number of clients worldwide.

We have more than 500 staff, 3 laboratories and our own ocean-going research vessel, and over 100 years of fisheries experience.

We have a long and successful track record in delivering high quality services to clients in a confidential and impartial manner. ([www.cefas.co.uk](http://www.cefas.co.uk))

CEFAS Technology Limited (CTL) is a wholly owned subsidiary of CEFAS specialising in the application of CEFAS technology to specific customer needs in a cost effective and focussed manner.

CTL systems and services are developed by teams that are experienced in fisheries, environmental management and aquaculture, and in working closely with clients to ensure that their needs are fully met. ([www.cefastechnology.co.uk](http://www.cefastechnology.co.uk))

### **customer focus**

With our unique facilities and our breadth of expertise in environmental and fisheries management, we can rapidly put together a multi-disciplinary team of experienced specialists, fully supported by our comprehensive in-house resources.

Our existing customers are drawn from a broad spectrum with wide ranging interests. Clients include:

- international and UK government departments
- the European Commission
- the World Bank
- Food and Agriculture Organisation of the United Nations (FAO)
- oil, water, chemical, pharmaceutical, agro-chemical, aggregate and marine industries
- non-governmental and environmental organisations
- regulators and enforcement agencies
- local authorities and other public bodies

We also work successfully in partnership with other organisations, operate in international consortia and have several joint ventures commercialising our intellectual property.