

Findings and recommendations of the Oraqua project

Societal awareness and expectations for organic aquaculture

EU consumers have little knowledge about organic production systems and very few are familiar with the EU leaf label for organic products.

Thus there is an urgent need to develop a clear and transparent strategy to communicate on the EU organic label to consumers.

Survey results show that highest priorities of consumers regarding organic aquaculture are: no use of toxic chemicals (> 60%), close to natural living conditions (> 55%), good water quality and no use of medicines (50%) and organic feed without synthetic additives (> 45%).

Communication should also focus on the benefits of the organic product for the consumers, which justifies a 20% to 50% higher cost compared to conventional products.

Production systems for organic aquaculture

The production systems for organic aquaculture should be as close as possible to outdoor natural ecosystems. Any type of system - from flow-through ponds or tanks to water re-use systems - is allowed, if it complies with this statement and secures the responsible use of resources.

An individual farm may have parallel organic and non-organic production systems if the facilities are clearly separated.



The production of native species should be preferred. The target of breeding programmes should be to produce robust strains adapted to farming.

Organic aquaculture shall be based on the rearing of young stock originating from organic brood stock and organic holdings. However, if organic seeds/juveniles are not available, non-organic ones may be used, as long as these are kept under organic management for at least the latter two thirds of their production cycle.

When organic aquaculture animals are not available, wild-caught or non-organic aquaculture animals may be used for breeding or for improving genetic stock if they have been kept under organic management for at least three months beforehand.

The use of hormones and derivatives is prohibited and the use of pure oxygen is only allowed to safeguard the health of cultivated species during critical periods or transport.

Feeds in organic aquaculture

Feeds must fulfil the nutrient requirements of the aquaculture species reared to secure optimal performances, health and welfare, a high nutritional quality for the flesh, and should have a low environmental impact. Fish ingredients are necessary in diets for fish and shrimp, which feed in nature on other aquatic animals, such as plankton or fish, but the global availability of fishmeal and oil is limited. Consequently, the possible origins of the essential feed ingredients should be based upon the following priorities:

- ingredients of organic aquaculture origin,
- fishmeal & fish oil from organic aquaculture trimmings,
- fishmeal & fish oil from trimmings of fish from sustainable fisheries,
- organic feed material of plant origin or animal origin,
- fishmeal & fish oil from whole fish caught in certified sustainable fisheries.

The composition of trimmings fluctuates and can be unbalanced; furthermore, trimmings from the same species as that reared cannot be used in its feed. Since supplemental amino acids are not allowed in feeds, the use of fishmeal and fish oil from trimmings may negatively affect both growth performance

and environmental impact, which in turn might be in conflict with the organic principles. Therefore, trimmings will always constitute only a part of the feed ingredients.

Biosecurity, health and welfare

The optimal welfare of species reared in organic aquaculture is ensured by limiting the stocking density and by monitoring water quality and the condition of the organism.

Minimising all stress factors is essential to maximise the organism's natural immunity.

Water quality in transport or temporary storage tanks should fulfil the physiological needs of the aquaculture species. Live transport should be done in such a way to ensure the best welfare.

Biosecurity measures (such as tank and equipment cleaning, disinfection etc...) are essential since the use of antibiotics is strictly limited and only a few environmentally-friendly substances have been approved for water treatment.

Homeopathic veterinary medical products and probiotics may be used.

Farm economics and competitiveness of organic aquaculture

Organic fish production is, on average, 30% more expensive than conventional aquaculture methods.

The main reasons for this difference at farm level are:

- **juvenile fish** - because of higher production costs of organically-produced juveniles,
- **feed and growth** - because of a higher feed price, a more cautious feeding regime and, in some cases, a lower energy content of the feed,
- **fixed assets** - because of an imposed maximum stocking density, implies more investments in production capacity per fish,
- **labour costs** - because of lower production capacity, more intensive control procedures and more efforts to secure the required quality standards.

A cost analysis of the supply chain has shown consumer prices to be influenced not only by the costs of organic fish production at farm level, but also by the margins applied for processing and retailing.

Environmental impact

Environmental impacts need to be minimised for all types of production systems.

All wastes generated, ranging from nutrients in rearing water to the packaging of the final products, should be recycled as completely as possible.

A specific management plan should be in place to minimise the ecological footprint of the production system and processes, which should be updated and assessed annually.

Institutional framework and control

The institutional framework for organic aquaculture is currently too complex and fragmented; harmonisation is necessary to reinforce investor confidence to develop and grow production.

Furthermore, harmonisation among control authorities is necessary for efficient control of product quality and to enhance consumer confidence.

New provisions should be in line with both practical and economic realities but derogations to the requirements applicable to organic production processes should be strictly limited and controlled by the National competent authorities.

The Oraqua project

The overall vision of the OrAqua project is to reinforce the economic growth of the organic aquaculture sector in Europe, supported by science-based regulations that are in line with the organic principles and consumer confidence in the organic aquaculture processes.

Within a **holistic approach to achieving this vision**, OrAqua suggests improvements of the current EU regulatory framework for organic aquaculture based on:

- a review of the relevant scientific knowledge available,
- a review of organic aquaculture production and economics,
- an assessment of consumer perceptions of organic aquaculture.

Oraqua has focused on the aquaculture production of relevant European species of finfish, molluscs, crustaceans and seaweed. Throughout the project, a multi-stakeholder platform was used to ensure interactions with all relevant stakeholders.

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Organic aquaculture is rooted in four general principles:

Health

- to assure the production of organisms while sustaining and enhancing the health of the ecosystems, including the humans they feed and the planet as a holistic entity.

Ecology

- to work, emulate and contribute to sustain these ecological systems and cycles that interact with nature.

Fairness

- to build on relationships that ensure fairness regarding the shared environment and life opportunities.

Care

- to manage in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

The three main objectives of organic aquaculture

1- Establish a sustainable aquaculture production that :

- respects nature's systems and cycles and enhances the health of the receiving ecosystem, water, plants and animals,
- contributes to a high level of biodiversity,
- makes responsible use of energy and other natural resources,
- respects high animal welfare standards.

2- Produce high quality products.

3- Produce a wide variety of products that

- respond to consumer demands using processes that interact positively with the environment, contribute to human health and assure the health and welfare of the aquatic organism produced.