

# Project aims to cut deformities

A NEW EU-funded collective research project – FineFish – has been launched to generate practical knowledge on how to reduce the incidence of deformities in major European farmed finfish species.

The results will be applied to the hatchery sector.

FineFish has as its main aim improved sustainability of European fish farming through better control of malformations – but in particular, it seeks to combine available information on the causal relation of deformities between species, so as to obtain new results faster and with higher precision.

Available scientific knowledge and practical

experience on the causes of deformities in young fish led to the identification of the following focus areas:

- Identify optimal rearing temperatures for early life stages of the major European farmed species, given as a table specifying “lethal and teratogenic temperatures” for different stages of life

- Identify nutritional components influencing the incidence of malformations, concentrating on bone mineralisation and muscle growth as affected by dietary components in starter diets and in fast growing juveniles

- Identify abiotic factors of tank environment that influence the incidence and development of

malformations, including tank hydrodynamics as well as gas supplementation

The species to be investigated by the project are Atlantic salmon, cod, rainbow trout, seabass and seabream, thus covering the main commercial sectors in European fish farming that depend on hatcheries.

Coordinated by Feap (Federation of European Aquaculture Producers), this three-year project combines hands-on experience and scientific know-how, joining ten top European hatcheries with scientists specialising in fish development, for a long-range study on the health of young fish.

Hatcheries from around

Europe are included as SME partners within the project.

FineFish was established as a response to conclusions made in the Profet workshops (organised by Feap, the European Aquaculture Society and AquaTT), specifically one that looked to assess the situation in European hatcheries.

During that meeting, held in Bordeaux, France, in 2004, hatchery managers from across Europe reported high levels of skeletal, backbone and gill malformations in fingerlings.

Such deformities represent a major source of financial losses for both SME hatcheries and

producers due to the loss of production efficiency and quality aspects. Thus, finding ways to reduce or prevent malformations was identified as one of the major research tasks for European aquaculture.

Knowledge generated by strategies to avoid malformations will be summarised as guidelines for use in best practice hatchery operating manuals. Such manuals will provide clear recommendations for the improvement of operations within the hatcheries concerned.

Besides the manuals, a classification handbook for deformity identification will be prepared – helping the operators to identify and determine malformations early.

A special monitoring programme is to be developed to establish benchmarks for the measurement of improvements; this programme may be enlarged to include other hatcheries at a later stage in the project.

Feap is responsible for ensuring that the new strategies developed by the project are transferred to SMEs in the EU via workshops, training programmes and other dissemination means.

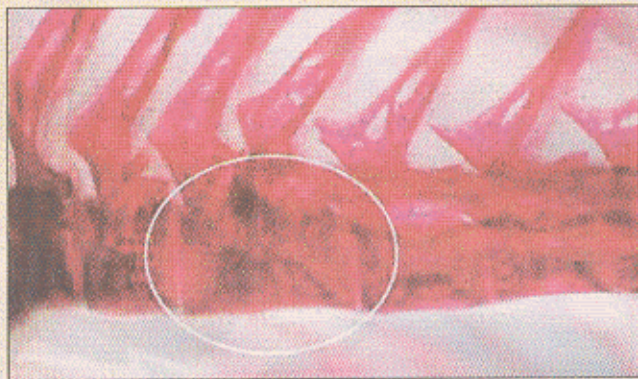
■ [www.finefish.info](http://www.finefish.info)

## Project research and technology partners:

Participant	Country
Akvaforsk	Norway
Royal Veterinary College	UK
UMR NuAge,	
INRA-IFREMER-Univ Bordeaux I	France
Centro de Ciencias do	
Mar do Algarve	Portugal
Israel Oceanographic and	
Limnological Research, National	Israel
Centre for Marine Research	Greece
Hellenic Centre for Marine Research	
Institut Francais de Recherche	France
pour l'Exploitation de la Mer	Greece
University of Patras	

## SME hatcheries:

Participant	Country
Profunda AS	Norway
Ferme Marine de Douhet SA	France
AquaSearch Ova	Denmark
Viveiro Vila Nova SA	Portugal
Tinamenor	Spain
Bolaks AS	Norway
Viviers de France	France
Brow Well Fisheries Ltd	UK
Andromeda SA	Greece
Panittica Pugliese Spa	Italy



**Examples of deformities:** Fusion of vertebrae in juvenile cod (top), where bones have been stained with Alizarine Red to display the bone structure; and malformed jaws in Atlantic salmon

Photos: Akvaforsk