

**FISH HEALTH**

# Multi-agency research project focuses on juvenile deformities in European hatcheries



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Europe's numerous small and medium-sized finfish hatcheries have been reluctant to admit they have a problem.

But according to the coordinator of an international research project linking hatcheries and scientists in nine countries across Europe, so many of the region's small and medium-sized enterprises (SMEs) have been having such large numbers of deformed fish that they have finally started to acknowledge that there's a problem.

The trouble is, says Courtney Hough, coordinator for the \$5-million (Eu), three-year FineFish Collective Research Project, that almost the whole of Europe's finfish aquaculture industry is based on juveniles from hatcheries; and the area has about 600-700 SME hatcheries.

As a result, conservative estimates on levels of the problem indicate that the European aquaculture industry is losing as much as \$46 million a year in revenue owing to deformities and impaired fish-growth.

So after a couple of workshops at which SMEs started to admit their concern to others in the industry, the Federation of European Aquaculture Producers put together a research proposal to the European Union Commission and the EUC agreed to invest in a multi-agency research project. The first priority was to determine the full extent of the problem in the main species being produced by SME hatcheries – and then to try to identify the cause or causes and how to counter them.

"Given the costs, we feel the project will pay for itself even if it only reduces the deformities by just five per cent," said Hough.

Hough explained that first of all researchers from some of Europe's major institutions are visiting hatcheries to help the operators identify the extent of the deformities and put together a malformations manual to assist personnel in identification in future.

Even as that is being done, trial work is zeroing in on salmon, trout, sea bass, sea bream and cod, trying to find the best rearing temperatures, best nutritional components for the fish, and the abiotic factors of tank environment that affect the incidence and development of deformities.

To help the project's participants with data-sharing as the project progresses, a website will be developed for all individuals and companies to pass around comments, information and experiences.

Well before the end of the project it's planned to have a set of Best Management Practices for the industry to follow to at least reduce, if not fully resolve, the problem.

Shared between 19 partners in nine countries from Denmark, Portugal, Israel and the UK to Greece and France, the FineFish Project, is still in the initial development stages. It will focus particularly on the severest and most frequent forms of skeletal, backbone and gill malformation in hatchery juveniles, steering away for the most part from those that develop later in saltwater, such as short-tail.

Hough mentioned Akvafosk in Norway, where considerable research has already been done regarding deformities in fish farming.

"From this," says a statement from the project, "it has emerged that the temperature of the water and the moment the fish come out of the egg are of major importance."