

RESEARCH

New fish-reproduction R&D centre planned for Norway

Plans are under way for establishing a dedicated fish-reproduction research and development centre in Hamar, Norway.

Jorn Ulheim, founder and managing director of Cryogenetics AS in Hamar, anticipates that the program could move quickly into handling cold, cool, and warm-water species at centres throughout the Western Hemisphere, and into establishing centres for other species in Asia and the Eastern Hemisphere.

Shortly before beginning a visit to British Columbia, where the company already has a cryogenic-preservation unit on Vancouver Island, Ulheim told *Hatchery International* that he sees a bright future for an expanding fish-reproduction program covering many species and using a variety of different technologies.

Effective aquaculture production systems already depend on effective reproduction, and Ulheim said that this will be the foundation for up-scaling the production of many species, using cryopreservation, genetics and other reproductive technologies.

The objective, he said, will be to grow increasing quantities of juveniles more efficiently, more cost-effectively and more profitably than at present. And he hopes to see the new centre assist in developing new sectors within the aquaculture industry, and create new and more effective stock-enhancement programs by private companies, government agencies and non-government conservation organizations.



Ragnhild Blene Rud (left) from Cryogenetics and four staff from AquaGen Chile S.A.

Ulheim said that the new centre will likely be set up by a few administrative staff over the next few months, but he has already started to contact fish-reproduction experts and companies in several different fields, and he projects the number of employees climbing quickly to 15-20 researchers.



Inger Grevle of Cryogenetics with halibut broodfish.

Of particular importance, said Ulheim, will be cold-water fish species such as Atlantic salmon, rainbow trout, brown trout, sturgeon, coho salmon, chinook salmon, Arctic char, sablefish and maybe pike. He also said that perhaps 10 warm-water species such as tilapia, shrimp, cobia, carp, and catfish could be included.

Ulheim said he expects that the focus areas will be: egg, milt, and embryo quality; cryo-preservation technologies; microscope-based technologies; genetic analysis, and assessment tools focused on reproduction leading to a better understanding of fish reproduction in fish. He anticipates that there will be transfer of technology from the animal and human sectors into aquaculture, and the creation of a lengthening list of fish species amenable to breeding in artificial and laboratory settings.

"The centre will be organized by matching leading international academic institutions with aquaculture companies and technology providers, to ensure focus and capacity to make necessary progress," he said.

According to Ulheim, the aquaculture industry worldwide is worth \$2-3 billion a year at present, but he believes that could be increased substantially by breeding fish that are genetically resistant to diseases.

At present, Ulheim said, only 10 to 30% of the broodstock owned by some of the major producers carry such genes, but he anticipates this will become more important, particularly for male fish, and that governments will require the inclusion of such traits as a condition for international transfer of milt and sperm.

Many countries have become more restrictive on the international trading

of fish reproductive materials, out of concern for bio-security. And he hopes that the new centre will provide the basis for countries such as Canada, the US and parts of Europe, which restrict the international trade of fish eggs and milt, to relax some of those restrictions and so help the development of aquaculture worldwide. Similar centres in countries such

as Singapore, China, Brazil and Mexico, will help feed an increasingly fish-hungry world.

And Ulheim noted that one important aspect of his program is that it has begun to garner financial support from major organizations such as Innovation Norway.

— *Quentin Dodd*

Cryogenetics SA plans to launch US facility

Before he develops the new international fish-reproduction centre in Norway, company boss Jorn Ulheim said Cryogenetics SA will be expanding its existing facilities and operations in North America. The company currently has one cryo-preservation unit employing two people on the Canadian west coast, and will develop a similar unit north of Boston, Massachusetts, to help clients on the eastern seaboard. This is in keeping with a trend to minimize the transfer of fish and reproductive materials between the two coasts.

The west coast unit has expanded considerably since it opened three years ago, and now has clients from BC, Washington and Oregon. There is still room for expansion and Ulheim anticipates the centre being used by clientele from California – and possibly Alaska, which has an extensive hatchery-based sea-ranching fishery for salmon.

Ulheim said that current salmon-breeding programs are high-tech and expensive to set up and operate, but he hopes to see that change within the next five years as a result of the new international centre in Norway. He hopes that salmon and other species such as tilapia and shrimp will become more competitive with low-cost, low-tech species such as *Pangasius*.

— *Quentin Dodd*

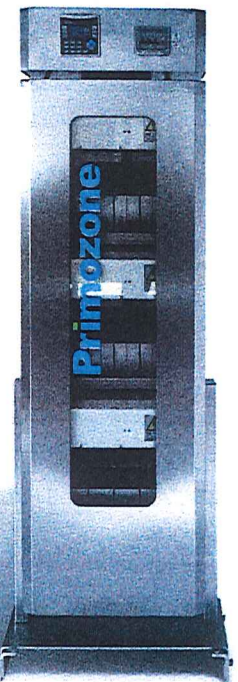


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