



Agenda item 6.7(f)
For decision

Council

CNL(00)33

Transgenic Atlantic Salmon

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1. At its 1997 meeting the Council expressed its concerns about the risks posed to the wild stocks by transgenic salmon and adopted Guidelines for Action on Transgenic Salmon (document CNL(97)48). These guidelines recognise that, while there may be benefits from the introduction of transgenic salmon if, for example, they could not interbreed with wild stocks, there are also risks which may lead to irreversible genetic changes and ecological interactions. The Council considered that there was an urgent need to take steps to ensure the protection of the wild stocks and under the Resolution the Parties agreed *inter alia* to:
 - advise NASCO Council of any proposal to permit the rearing of transgenic salmonids and provide details of the proposed method of containment and other measures to safeguard the wild stocks;
 - take all possible actions to ensure that the use of transgenic salmon, in any part of the NASCO Convention area, is confined to secure, self-contained, land-based facilities.
2. The attached letter has been received from Canada advising the Council that a company located in Eastern Canada is presently producing transgenic Atlantic salmon and rainbow trout broodstock in Eastern Canada. Information from the company's website states that A/F Protein's mission includes "to develop fish with improved growth rates and other economically desirable traits through the use of gene constructs utilizing antifreeze protein gene promoters". The main focus of the work at the company's facility at Fortune Bay, Prince Edward Island, has been the production of Atlantic salmon with enhanced growth rates through use of a gene construct comprised of a chinook salmon gene sequence for growth hormone linked to a promoter sequence controlling antifreeze production in ocean pout. The effect is that the fish produce growth hormone all year round and are capable of growing 4-6 times faster than "standard" salmon grown under the same conditions.
3. Since the Council's last Annual Meeting there has been considerable media interest in transgenic salmon. Much of this was in relation to trials conducted in Scotland about five years ago (see document CNL(00)16) but more recent articles refer to ongoing development of transgenic Atlantic salmon by the company A/F Protein which is seeking US Food and Drug Administration and Health Canada approval of their transgenic salmon for human consumption.
4. The issue of transgenic salmon was considered by the Working Group on the Precautionary Approach which met in Brussels in 1998. At that meeting a paper was tabled by A/F Protein on the role transgenic salmon might play in contributing to the protection of the wild stocks. It was suggested in that paper that the use of transgenic salmon could facilitate the development of salmon farming based upon fully enclosed, land-based facilities at a distance from the coast and far from rivers containing wild salmon stocks. The Working Group recognised, however, that the development of transgenic salmon posed additional risks to the wild stocks. Under the Action Plan for

Application of the Precautionary Approach the issue of transgenic salmon will be addressed by the Standing Committee on the Precautionary Approach when it considers application of a Precautionary Approach to introductions and transfers, etc.

5. The issue of transgenic salmon was also considered at the 1998 meetings of the Wild and Farmed Salmon Liaison Group. The International Salmon Farmers' Association (ISFA) representatives indicated that it was not in favour of transgenic salmon and that a protocol on transgenic salmon has been developed by the ISFA. The Liaison Group did, however, recognise that there is a different attitude to genetically modified organisms between North America and Europe. Wild and farmed salmon interests are concerned, for different reasons, about the use of transgenic salmon.
6. Under the Guidelines for Action on Transgenic Salmon the Parties also agree to take into account the ongoing work by the Parties to the Convention on Biological Diversity to develop a Protocol on Biosafety. This Protocol, referred to as the Cartagena Protocol on Biosafety, was finalised in Montreal in January this year and will enter into force after 50 countries have ratified it. The Protocol reflects growing concerns about the potential risks from biotechnology. The Press Release following the agreement in Montreal indicates that, under the protocol, governments will signal whether or not they are willing to accept imports of agricultural commodities that include living modified organisms (LMOs). Stricter Advanced Informed Agreement procedures will apply to seeds, live fish and other LMOs that are to be intentionally introduced into the environment. The exporter must provide detailed information to each importing country in advance of the first shipment and the importer must then authorise the shipment, so that the recipient country has the opportunity to assess the risks.
7. Under the North American Commission's Discussion Document for revision to the Protocols for the Introduction and Transfer of Salmonids, a different approach is proposed under which reproductively viable transgenic salmonids may only be introduced to land-based facilities where the possibility of escapement is minimal, but transgenic salmonids may be used in marine and freshwater cages if they are reproductively sterile. These proposals for revision to the Protocols have not yet been agreed by the North American Commission. A/F Protein have indicated that they would intend to supply only sterile transgenic salmon for use in cage rearing units.
8. Salmon will likely be the first animal to be commonly available in transgenic form for food. A/F Protein have indicated that they will have transgenic salmon available for commercial production in 2001. A/F Protein are expecting a decision from the FDA in the near future. However, we are not aware of the situation regarding resolution of any environmental impacts. Although the industry has reacted against it, due mainly to marketing concerns, it is possible that some producers will decide that the advantages outweigh the marketing problems. The Council is asked to consider if further action should be taken.

Secretary
Edinburgh
12 May, 2000



MAY 4 2000

your file votre référence

Our file Notre référence

Dr Malcolm Windsor
NASCO Secretary
11 Rutland Square
Edinburgh

Facsimile transmission 011-44-131-228-4384

Dear Dr Windsor:

In accordance with undertakings under the 1997 Guidelines for Action on Transgenic Salmon, I would like to inform you that a company located in Eastern Canada is currently producing transgenic Atlantic salmon and rainbow trout broodstock. Relevant data will be sent to the U.S. Food and Drug Administration (FDA) and Health Canada for food safety evaluation. In Canada, the food safety evaluation will be done under the novel food guidelines of the *Food and Drugs Act*. (I would invite you to consult the company's website at <http://webhost.avint.net.afprotein> to learn more about the company's objectives.)

The Department of Fisheries and Oceans has not received any formal proposal for grow out. Should this be the case, the proposal would be thoroughly evaluated and the 1997 Guidelines taken fully into account in the examination and a risk analysis performed. A section 56 transfer licence under the *Fisheries Act* would need to be issued before transgenic (or any other) fish can move from the hatchery into a marine site.

For your information, we are working to finalize our new regulation under the *Fisheries Act* to regulate the use of transgenic aquatic organisms. Until a regulation is passed that is equivalent to the intent of the *Canadian Environmental Protection Act (CEPA)*, the CEPA represents the safety net authority.

I trust that this is helpful.

Yours sincerely,

J. Robichaud
Head of the Canadian delegation to NASCO

