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Mariculture Committee

REPORT OF THE JOINT MEETING OF
THE WORKING GROUP ON GENETICS

AND

THE WORKING GROUP ON INTRODUCTIONS AND TRANSFERS OF MARINE ORGANISMS

Helsinki, Finland, June 5, 1991

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**Joint Meeting of the Working Group on Genetics and the
Working Group on Introductions and Transfers of Marine Organisms**

INTRODUCTION

C. Res. 1990/2:38 called for a joint session of the Working Group (WG) on Introductions and Transfers of Marine Organisms and the Working Group on Genetics to review the ICES Codes of Practice on introductions and transfers of marine organisms relative to genetically modified organisms (GMOs) with a view to developing an extension of the ICES Code of Practice.

JOINT MEETING

The Joint Meeting was held 6 June 1991 at the Finnish Game and Fisheries Research Institute in Helsinki, Finland, with Dr. W. Villwock of the Genetics WG and Dr. J. T. Carlton of the Introductions and Transfers WG as co-chairs. Dr. A. L. Munro was appointed as Rapporteur for the Joint Session. WG members present were:

<u>WG Introductions and Transfers</u>		<u>WG Genetics</u>	
J. Carlton	USA	K. Goryczko	Poland
T. G. Carey	Canada	K. Jorstad	Norway
G. Dahle	Norway	R. Saunders	Canada
B. I. Dybern	Sweden	J.-M. Sevigny	Canada
H. Grizel	France	W. Villwock	Germany
B. Holmberg	Sweden		
V. H. Jacobsen	Denmark		
D. Minchin	Ireland		
A. Munro	U.K.		
T. R. Porter	Canada		
R. Rahkonen	Finland		
J. Stottrup	Denmark		
I. Wallentinus	Sweden		

In addition, U. Sienknecht and E. Witten (both from Germany), students of Prof. Villwock's, were present as observers. The Agenda was considered and approved (Appendix I). The purposes and goals of the Joint Meeting were reviewed by the co-chairs.

Prof. W. Villwock introduced the subject by defining GMO's, methods of their production and the limitations of current information concerning their performance. In particular it was emphasized that the small number of individuals produced serve only as progenitors of new genetic lines. However stable integration of the introduced genetic construct may take some generations to establish and it would take some time to establish the effects on various aspects of fitness for release to the natural environment.

Prof. Villwock was of the opinion that several more years of experience of transgenic organisms would be necessary before conclusions about their fitness for release could be made. He concluded by urging that suitable tests

should be performed on the adaptability of transformed and inbred lines of stocks in the natural environment and comparisons made between them and the mother stock.

Dr. Carlton briefly described the current 1990 version of the Code of Practice and the content of the Co-Operative Research Reports 130 and 159, after which discussion of the topic followed. Prof. Villwock contended that a release of a GMO should be viewed as a release of an introduced species and therefore it was necessary to modify the Code of Practice to recommend strong regulatory powers on such releases. It was agreed that there was a case for altering the Code to include a recommendation for considering control of the release of GMOs but the form of this recommendation should await further discussion.

The EC Directive 90/220, "On the deliberate release into the environment of genetically modified organisms" was discussed as a model for legislation. It was learned that all EC member states would be enacting legislation to incorporate the principles of the Directive. The position of non-member states was as follows:

Canada: No law

Finland: A supplement to existing legislation was planned

Norway: A new law should be enacted within one year

Sweden: No laws or guidelines

USA: The existing federal laws encompass only terrestrial species.

A draft of Irish legislation resulting from the EC Directive was viewed as a good example a State could adopt to control the release of GMOs. A statement on Finnish legislation on GMOs was prepared and submitted by M.-L. Koljonen (Appendix II).

Prof. Villwock also urged that National Committees making decisions on the release of GMOs should contain scientists. After discussion it was decided to recommend to the ICES Council that ICES member countries should adopt this proposal.

It was also argued that the respective Chairmen of the WGs should write to the Council urging that other international bodies and non-ICES member countries should be made aware of the Revised Code and in particular the inclusion of GMOs within the content of the Code.

A draft of the new section concerning GMOs was introduced by Dr. Carlton. Several modifications of the wording and content were discussed. Specific agreed additions were as follows:

1. The EC Directive 90/220 to which nine ICES member states must introduce comparable National legislation as a legal and regulatory basis for controlling the release of GMOs was to be referred to as an example only, as several states had no part in its drafting.
2. ICES member states should notify Council of an impending release at "an early stage", i.e., well before any release, and that they include a risk assessment of the effects of the release. It was anticipated that some significant details of the nature of the GMO would be included. An initial proposal that every proposed release of a GMO should be treated as a proposal to release a new introduction was rejected on the grounds that based on a number of developments in the GMO field it was impossible that the current ICES mechanisms could

handle such a volume of material and in the case of nine EC member states it was a duplication of effort.

3. Where feasible that initial releases of GMOs should be reproductively sterile.
4. That research should be undertaken to study the ecological effects of releases of GMOs.

As a result of these day-long discussions, a **REVISED 1991 CODE OF PRACTICE TO REDUCE THE RISKS OF ADVERSE EFFECTS ARISING FROM THE INTRODUCTIONS AND TRANSFERS OF MARINE ORGANISMS, INCLUDING THE RELEASE OF GENETICALLY MODIFIED ORGANISMS** was approved by the Joint Meeting, as attached. It was agreed to recommend to the Council that the Revised 1991 Code be adopted.

It was agreed by both WGs that another joint meeting, two years hence, would be most useful, to review progress that had been made in light of the many issues set for in this meeting.

RECOMMENDATION

During the course of the meeting, the following recommendation to the parent committee was formulated by the Joint Meeting of the Working Groups:

- (1) That the **REVISED 1991 CODE OF PRACTICE TO REDUCE THE RISKS OF ADVERSE EFFECTS ARISING FROM THE INTRODUCTION AND TRANSFERS OF MARINE ORGANISMS, INCLUDING THE RELEASE OF GENETICALLY MODIFIED ORGANISMS** be presented to the Council for adoption.

Bold face = Changes and New Sections

REVISED 1991 CODE OF PRACTICE TO REDUCE THE RISKS OF ADVERSE
EFFECTS ARISING FROM THE INTRODUCTIONS AND TRANSFERS OF MARINE ORGANISMS,
INCLUDING THE RELEASE OF GENETICALLY MODIFIED ORGANISMS

- I. Recommended procedure for all species prior to reaching a decision regarding new introductions. (A recommended procedure for introduced or transferred species which are part of current commercial practice is given in Section IV; a recommended procedure for the consideration of the release of genetically modified organisms is given in Section V).
- V. Recommended procedure for the consideration of the release of genetically modified organisms (GMOs).
- (a) Recognizing that little information exists on the genetic, ecological, and other effects of the release of genetically modified organisms into the natural environment (where such releases may result in the mixing of altered and wild populations of the same species, and in changes to the environment), the Council urges member countries to establish strong legal measures (*) to regulate such releases, including the mandatory licensing of physical or juridical persons engaged in genetically modifying, or in importing, using, or releasing any genetically modified organism.
- (b) Member countries contemplating any release of genetically modified organisms into open marine and fresh water environments are requested at an early stage to notify the Council before such releases are made. This notification should include a risk assessment of the effects of this release on the environment and on natural populations.
- (c) It is recommended that whenever feasible that initial releases of GMOs be reproductively sterile in order to minimize impacts on the genetic structure of natural populations.
- (d) Research should be undertaken to evaluate the ecological effects of the release of GMOs.

(*) Such as the European Economic Communities "Council Directive of 23 April 1990 on the Deliberate Release into the Environment of Genetically Modified Organisms (90/220/EEC)", Official Journal of the European Communities, No. L, 117:

15 - 27 (1990).

VI. (= old Section V)

References

- Ferguson, M. M.
1990. The genetic impact of introduced fishes on native species. *Canadian Journal of Zoology* 68: 1053 - 1057.
- Kapuscinski, A. R. and E. M. Hallerman.
1990. Transgenic fish and public policy: anticipating environmental impacts of transgenic fish, pp. 2 - 11; : regulatory concerns, pp. 12 - 20; : patenting of transgenic fish, pp. 21 - 24. *Fisheries* 15(1).
- Mooney, H. A. and G. Bernardi, eds.
1990. Introduction of genetically modified organisms into the environment. SCOPE 44. John Wiley, New York, 201 pp.
- National Research Council (National Academy of Sciences)
1989. Field testing genetically modified organisms. National Academy Press, 170 pp.
- Parsons, P. A.
1990. Risks from genetically engineered organisms: energetics and environmental stress. *Functional Ecology* 4: 265 - 271.
- Tiedje, J. M. et al.
1989. The planned introduction of genetically engineered organisms: ecological considerations and recommendations. *Ecology* 70: 298-315.

Appendix I.

**Joint Meeting of the Working Group on Genetics and the
Working Group on Introductions and Transfers of Marine Organisms**

Helsinki, Finland, June 6, 1991

AGENDA

- 9:00 *Purpose and Goals of this Joint Meeting:*
- ~ Remarks by Dr. W. Villwock, Chair, Genetics WG
 - ~ Remarks by Dr. J. Carlton, Chair, Introductions WG
 - ~ Appointment of Rapporteur
 - ~ Genetically Modified Organisms: Definitions, Concepts, and Issues
- Prof. Dr. W. Villwock
- 10:30 Break
- 11:30 Discussion of Needs to Modify the "Code of Practice"
- 12:15 LUNCH
- 1:30 Reconvene: Continue Discussion of Needs to Modify "Code of Practice"
- 3:30 Break
- 4:00 Review of Suggested Additions to "Code of Practice"
- 5:00 Final Remarks by Co-Chairs

FINLAND AND LEGISLATION ON GENETICALLY MODIFIED ORGANISMS

Compiled by Marja-Liisa Koljonen according to the memorandum on 31.1.1990 of the Finnish Ministry of the Environment

There is no actual legislation in Finland designed to regulate the risks to the environment and to human health ensuing from the use of genetically modified organisms in research and product development. The legislation on health care, environmental protection and agriculture does not define live genetically modified organisms, and this legislation, with the exception of the Decree on Infectious Diseases, cannot as such be applied to research or product development within biotechnology or genetic engineering.

The Act for the Prevention of Cruelty to Animals as a rule forbids such breeding as repeatedly leads to the birth of individuals whose delivery or the maintenance of whose vital functions calls for specific measures within veterinary medicine or other fields. The import to Finland of such animals is likewise forbidden. The Decree on Test Animals extensively regulates tests with vertebrate animals raised or acquired for test purposes. There is no legislation on the use of genetic engineering in fish breeding. No binding regulations can be invoked in respect of field tests or to forestall their possible harmful consequences.

According to the memorandum of the Finnish Ministry of the Environment, matters related to biotechnology will be delegated within the administration in such a manner that each task rests with the central authority in the respective field. Fish breeding, like all animal breeding in Finland falls within the jurisdiction of the Ministry of Agriculture. A joint delegation on genetic engineering, intended to function as an expert board and to develop this field, has been appointed to coordinate the activities of the different authorities in this matter.

Finnish legislation on biotechnology will be developed by supplementing the relevant specific Acts with the required regulations. Legislation on environmental protection, health care, agriculture and industrial production will be developed to supervise the use of genetically modified organisms (GMOs). The Council of the State will appoint a Committee for the required legislation work.