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OPINION OF THE SCIENTIFIC COMMITTEE ON PLANTS ON THE INVOCATION BY THE UNITED KINGDOM OF ARTICLE 16 OF COUNCIL DIRECTIVE 90/220/EEC REGARDING GENETICALLY MODIFIED MAIZE LINE T25 NOTIFIED BY AGREVO (NOW AVENTIS CROPSCIENCE, REF. C/F/95/12-07)

Opinion adopted by the Scientific Committee on Plants on 8 November 2001

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A. Title

OPINION OF THE SCIENTIFIC COMMITTEE ON PLANTS ON THE INVOCATION BY THE UNITED KINGDOM OF ARTICLE 16 OF COUNCIL DIRECTIVE 90/220/EEC REGARDING GENETICALLY MODIFIED MAIZE LINE T25 NOTIFIED BY AGREVO (NOW AVENTIS CROPSCIENCE, REF. C/F/95/12-07)
(Opinion adopted by the Scientific Committee on Plants on 8 November 2001).

B. Terms of reference

The Scientific Committee on Plants (SCP) is requested to express its opinion on the following question:

"Does the information submitted by the UK constitute relevant scientific evidence, which could cause the Committee to consider that GM maize line T25 constitutes a risk to human health and the environment in the sense of Article 16 of Directive 90/220/EEC? In particular, the scientific relevance with respect to environmental risk and negative effects on the state and the maintenance of the environment pointed out by the UK authorities should be considered."

C. Opinion of the Committee

The Scientific Committee on Plants has examined the information submitted by the UK authorities and concludes that it does not provide new scientific information which requires any changes to the original risk assessment carried out on the AgrEvo (now Aventis CropScience) maize line T25. The SCP considers the issue raised in the question is related to management and not to risk assessment and is therefore unable to comment on non-scientific issues related to the co-existence of GM and non-GM crops and the wider interpretation of existing guidelines presented in this case.

A. Title

REPORT OF THE SCIENTIFIC COMMITTEE ON PLANTS ON THE INVOCATION BY THE UNITED KINGDOM OF ARTICLE 16 OF COUNCIL DIRECTIVE 90/220/EEC REGARDING GENETICALLY MODIFIED MAIZE LINE T25 NOTIFIED BY AGREVO (NOW AVENTIS CROPSCIENCE, REF. C/F/95/12-07)

B. Background

The Scientific Committee on Plants (SCP) was consulted by the Commission on the dossier for a genetically modified maize line T25 transformed to express the *pat* gene from *Streptomyces viridochromogenes* which encodes phosphinothricin acetyltransferase - PAT: this enzyme inactivates glufosinate ammonium, thereby conferring an increased tolerance to the post-emergence herbicide to the maize plants. The SCP published a favourable opinion on 10 February 1998[1]. A Commission Decision to place this maize on the market was adopted on 22 April (Decision n° 98/293/EC[2]) and the French authorities issued the corresponding consent on 3 August 1998.

In July 2001, the UK authorities informed the Commission on their decision to invoke Article 16 of Directive 90/220/EEC. The marketing of the GM maize line T25, notified by Aventis CropScience has been restricted in the territory of Wales.

According to the National Assembly of Wales, risk from unrestricted use of GM maize line T25 arises from the potential of cross-pollination when GM and non-GM crops are grown in close proximity. In order to safeguard an environment within which organic and non-GM crops can continue to be grown, the National Assembly of Wales has introduced legally enforceable distances between T25 and non-GM maize crops in Wales.

In Wales, planting of T25 maize line is prohibited within:
- 200 m of organic farms,
- 200 m of farms growing non GM sweet corn, and
- 80 m of non-GM forage maize,

except where notice of any proposed planting of T25 is given to farms within the specified distances from the proposed planting site, and the notified farmers do not respond or confirm that they are not growing or do not propose to grow sweet corn or maize within the specified separation distances from the proposed planting site of the T25 maize.

In order to prepare its opinion, the Committee had access to the documents listed hereafter.

Documents made available to the Committee:

1. UK Article 16 regarding GM maize line T25: Terms of reference, submitted by DG Environment on 17 September 2001 (Document GMO/T25-UK/001, 20 Sept. 2001).

[1] Opinion revised on 5 September 2001 http://europa.eu.int/comm/food/fs/sc/scp/out108_gmo_en.pdf
[2] OJ No L131, 22.4.98 p30

2. UK Article 16 regarding GM maize line T25: Letter from UK permanent representation to the EU, dated 13 July 2001, submitted by DG Environment on 17 September 2001 (Document GMO/T25-UK/003, 20 Sept. 2001).

3. UK Article 16 regarding GM maize line T25: Justification for the measures taken (attached to notification letter, 13 July 2001), submitted by DG Environment on 17 September 2001 (Document GMO/T25-UK/004, 20 Sept. 2001).

4. UK Article 16 regarding GM maize line T25: Prohibition notice of the National Assembly of Wales, dated 13 July 2001, submitted by DG Environment on 17 September 2001 (Document GMO/T25-UK/005, 20 Sept. 2001).

5. UK Article 16 regarding GM maize line T25: Summary notification information format for GM maize line T 25, dated 13 July 2001, submitted by DG Environment on 17 September 2001 (Document GMO/T25-UK/006, 20 Sept. 2001).

C. Scientific Background on which the opinion is based

Opinion of the Committee:

The Scientific Committee on Plants has examined the information submitted by the UK authorities and concludes that it does not provide new scientific information which requires any changes to the original risk assessment carried out on the AgrEvo (now Aventis CropScience) maize line T25. The SCP considers the issue raised in the question is related to management and not to risk assessment and is therefore unable to comment on non-scientific issues related to the co-existence of GM and non-GM crops and the wider interpretation of existing guidelines presented in this case.

Scientific background on which the opinion is based:

The SCP was provided with a letter from UK permanent representation to the EU, dated 13 July 2001, informing the Commission of action taken by one of the UK's designated competent authorities - the National Assembly for Wales - under Article 16 of Directive 90/220/EEC on the deliberate release into the environment of genetically modified organisms.

The National Assembly for Wales has formed the opinion that the unrestricted release of T25 transformed maize would involve a "risk to the environment" in the terms of the Directive in that the lack of controls on the planting of the GM crop would prevent the maintenance of an environment where organically pure crops can continue to be grown. Equally the unrestricted planting of GM maize could damage the integrity of other non-GM maize crops. The National Assembly for Wales considers that this risk arises from the potential for cross-pollination when GM and non-GM maize crops are grown in close proximity. In the case of proximity of GM maize to its organically grown counterparts, the Assembly also indicates that cross-pollination potentially threatens the organic status of such crops, resulting in a loss of non-GM status. In order to safeguard an environment within which organic and non-GM crops can continue to be grown, the National Assembly of Wales has introduced legally enforceable separation distances between T25 GM maize and non-GM maize crops in Wales.

The Committee considered this UK document as the basis for its opinion to the Commission.

At the outset the SCP advises the Commission that this UK document does not contain any new scientific information which is relevant to the original scientific risk assessment that the Committee published in 1998 and which was revised on 5 September 2001. Rather the document contains arguments for a broad interpretation of Article 16 allowing 'protection of the environment' under the Directive to include protection of an environment within which organic and non-GM crops can continue to be grown. The SCP considers this a management issue and not a risk assessment and is therefore unable to comment on non-scientific issues related to the co-existence of GM and non-GM crops and the wider interpretation of existing guidelines presented in this case.

Genetic transfer:

Zea mays is an anemophilous species, i.e. largely pollinated by wind and gravity. Since pollen production and viability are unchanged by the introduced genetic modification, dispersal and out-crossing frequency from T25 should be no different from other maize varieties. There are many reported studies of pollen dispersal (e.g. Paterniani & Stort 1973, OECD 1993, Eastham & Sweet 2000, Ingram 2000), some of which show that maize pollen may travel long distances. However, most of the released pollen is deposited close to the crop plant and there is a very steep gradient in the fall off in pollen deposition with increasing distance from the source. In low to moderate winds it has been estimated that, compared with pollen concentrations only 1 m from the source, approximately 2% of the pollen is recorded at 60 m, 1.1% at 200 m and 0.75-0.5% at 500 m distance from the same source (Emberlin *et al.* 1999).

Field grown crops are always exposed to pollen from sources both within and outside their immediate location. GM crops may therefore cross-pollinate neighbouring, compatible organic and/ or non-GM crops, when both are grown in proximity. The Scientific Committee on Plants has indicated[3] that from experience of research on unintentional seed mixing and gene-flow, and from long experience of commercial seed production, a zero level of adventitious presence of GM seed in non-GM crops cannot be guaranteed under commercial practice. However, there is no scientific evidence that the potential for cross-pollination of non-GM maize by the GM maize in question constitutes a risk to either human health or the environment under the terms identified in Directive 90/220/EEC.

D. REFERENCES

Eastham K. & Sweet J.B. (2000) Genetically Modified Organisms (GMO's): the significance of gene flow through pollen transfer. European Science Foundation, November 2000, pp103.

Emberlin, J., Adams-Groom B. and Tidmarsh J. (1999). A report on the dispersal of maize pollen. National Pollen Research Unit for the Soil Association.

Ingram, J. (2000). Report on the separation distances required to ensure cross-pollination is below specified limits in non-seed crops of sugar beet, maize and oilseed rape. National Institute of Agricultural Botany, Cambridge. UK.

[3] Opinion of the Scientific Committee on Plants concerning the adventitious presence of GM seeds in conventional seeds: http://europa.eu.int/comm/food/fs/sc/scp/out93_gmo_en.pdf

OECD 1993: Traditional crop breeding practices: an historical review to serve as a baseline for assessing the role of modern biotechnology., pp 113-121. ISBN 92-64-14047-6.

Paterniani E. & Stort A.C. (1973) Effective maize pollen dispersal in the field. *Euphytica* 23: 129-134.

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[4] Scientific Committee on Animal Nutrition.
[5] Scientific Committee on Food.