

EUROPEAN COMMISSION
HEALTH AND CONSUMERS DIRECTORATE-GENERAL

Directorate E – Safety of the food chain
Unit E.3 - Chemicals, contaminants, pesticides

Ethephon

SANCO/10037/2006 – rev. 3

2 December 2008¹

FINAL

Review report for the active substance **ethephon**

Finalised in the Standing Committee on the Food Chain and Animal Health at its meeting on
14 July 2006

in view of the inclusion of ethephon in Annex I of Directive 91/414/EEC

1. Procedure followed for the re-evaluation process

This review report has been established as a result of the re-evaluation of ethephon, made in the context of the work programme for review of existing active substances provided for in Article 8(2) of Directive 91/414/EEC concerning the placing of plant protection products on the market, with a view to the possible inclusion of this substance in Annex I to the Directive.

Commission Regulation (EC) No 451/2000⁽²⁾ laying down the detailed rules for the implementation of the second and third stages of the programme of work referred to in Article 8(2) of Council Directive 91/414/EEC, as last amended by Regulation (EC) No 1490/2002⁽³⁾, has laid down the detailed rules on the procedure according to which the re-evaluation has to be carried out. Ethephon is one of the existing active substances covered by this Regulation.

In accordance with the provisions of Article 4 of Regulation (EC) No 451/2000, Aventis Crop Science, Phytorus SA and Scientific Consulting Company GmbH notified to the Commission of their wish to secure the inclusion of the active substance ethephon in Annex I to the Directive.

In accordance with the provisions of Article 5 of Regulation (EC) No 451/2000, the Commission, designated the Netherlands as rapporteur Member State to carry out the assessment of ethephon on the basis of the dossiers submitted by the notifiers. In Regulation (EC) No 703/2001⁴ the Commission specified furthermore that the deadline for the notifiers with regard to the submission to the rapporteur Member States of the dossiers required under Article 6(2) of

¹ On 2 December 2008 the Standing Committee on the Food Chain and Animal Health has taken note of an amendment to the review report as regards the setting of the ARfD (chapter 3 of the review report).

² OJ No L 55, 29.02.2000, p.25.

³ OJ No L 224, 21.8.2002, p.23.

⁴ OJ No L 98, 7.4.2001, p. 6.

Regulation (EC) No 451/2000, as well as for other parties with regard to further technical and scientific information was 30 April 2002.

Aventis Crop Science, now Bayer CropScience, submitted by the deadline a dossier to the rapporteur Member State which did not contain substantial data gaps, taking into account the supported uses. Phytorus SA submitted a dossier which was considered not complete. Only an evaluation of the specification of the technical material from the Phytorus-source was carried out. Scientific Consulting Company GmbH rescinded the notification of ethephon by letter dated 14 March 2002. Therefore, Bayer CropScience was considered to be the main data submitter.

In accordance with the provisions of Article 8(1) of Regulation (EC) No 451/2000, the Netherlands submitted on 21 April 2004 to the EFSA the report of their examination, hereafter referred to as the draft assessment report, including, as required, a recommendation concerning the possible inclusion of ethephon in Annex I to the Directive. Moreover, in accordance with the provisions of Article 8(2) of Regulation (EC) 451/2000, the Commission and the Member States received also the summary dossier on ethephon from Bayer CropScience, on 24 May 2004. In accordance with the provisions of Article 8 of Regulation (EC) No 451/2000, the EFSA organised the consultation on the draft assessment report by all the Member States as well as by Bayer CropScience being the main data submitters, on 28 June 2004 by making it available.

The EFSA organised an intensive consultation of technical experts from a certain number of Member States, to review the draft assessment report and the comments received thereon (peer review).

In accordance with the provisions of Article 8 (7) of Regulation 451/2000 the EFSA sent to the Commission its conclusion on the risk assessment [Conclusions regarding the peer review of the pesticide risk assessment of the active substance ethephon (finalised 24 April 2006)⁵]. This conclusion refers to background document A (draft assessment report) and background document B (EFSA peer review report).

In accordance with the provisions of Article 8 (7) of Regulation (EC) No 451/2000, the Commission referred on 14 July 2006 a draft review report to the Standing Committee on the Food Chain and Animal Health, for final examination. The draft review report was finalised in the meeting of the Standing Committee on 14 July 2006.

The present review report contains the conclusions of the final examination by the Standing Committee. Given the importance of the conclusion of the EFSA, and the comments and clarifications submitted after the conclusion of the EFSA (background document C), these documents are also considered to be part of this review report.

2. Purposes of this review report

This review report, including the background documents and appendices thereto, has been developed and finalised in support of the Directive **2006/85/EC**⁶ concerning the inclusion of ethephon in Annex I to Directive 91/414/EEC, and to assist the Member States in decisions on individual plant protection products containing ethephon they have to take in accordance with

⁵ *EFSA Scientific Report* (2006) 67, 1–61

⁶ OJ No L 293, 24.10.2006, p.3-5

the provisions of that Directive, and in particular the provisions of article 4(1) and the uniform principles laid down in Annex VI.

This review report provides also for the evaluation required under Section A.2.(b) of the above mentioned uniform principles, as well as under several specific sections of part B of these principles. In these sections it is provided that Member States, in evaluating applications and granting authorisations, shall take into account the information concerning the active substance in Annex II of the directive, submitted for the purpose of inclusion of the active substance in Annex I, as well as the result of the evaluation of those data.

In accordance with the provisions of Article 8(9) of Regulation (EC) No 451/2000, Member States will keep available or make available this review report for consultation by any interested parties or will make it available to them on their specific request.

The information in this review report is, at least partly, based on information which is confidential and/or protected under the provisions of Directive 91/414/EEC. It is therefore recommended that this review report would not be accepted to support any registration outside the context of Directive 91/414/EEC, e.g. in third countries, for which the applicant has not demonstrated to have regulatory access to the information on which this review report is based.

3. Overall conclusion in the context of Directive 91/414/EEC

The overall conclusion from the evaluation is that it may be expected that plant protection products containing ethephon will fulfil the safety requirements laid down in Article 5(1)(a) and (b) of Directive 91/414/EEC. This conclusion is however subject to compliance with the particular requirements in sections 4, 5, 6 and 7 of this report, as well as to the implementation of the provisions of Article 4(1) and the uniform principles laid down in Annex VI of Directive 91/414/EEC, for each ethephon containing plant protection product for which Member States will grant or review the authorisation.

Furthermore, these conclusions were reached within the framework of the uses which were proposed and supported by the main data submitter and mentioned in the list of uses supported by available data (attached as Appendix II to this review report).

Extension of the use pattern beyond those described above will require an evaluation at Member State level in order to establish whether the proposed extensions of use can satisfy the requirements of Article 4(1) and of the uniform principles laid down in Annex VI of Directive 91/414/EEC.

The following reference values have been finalised as part of this re-evaluation:

ADI: 0.03 mg/kg bw/d

ARfD: 0.05 mg/kg bw/d⁷

AOEL: 0.03 mg/kg bw/d

With particular regard to residues, the review has established that the residues arising from the proposed uses, consequent on application consistent with good plant protection practice, have no harmful effects on human or animal health. The Theoretical Maximum Daily Intake (TMDI;

⁷ (see *EFSA Scientific Report* (2008) 174, 1–75)

excluding water and products of animal origin) for a 60 kg adult is 2.2 % of the Acceptable Daily Intake (ADI), based on the FAO/WHO European Diet (August 1994).

Additional intake from water and products of animal origin are not expected to give rise to intake problems.

Estimates of acute dietary exposure of adults and toddlers revealed that the Acute Reference Dose (ARfD) would not be exceeded (Dutch diet: 2.7 % or 3.3 % for respectively adults or children).

The review has identified several acceptable exposure scenarios for operators, workers and bystanders, which require however to be confirmed for each plant protection product in accordance with the relevant sections of the above mentioned uniform principles.

The review has also concluded that under the proposed and supported conditions of use there are no unacceptable effects on the environment, as provided for in Article 4 (1) (b) (iv) and (v) of Directive 91/414/EEC, provided that certain conditions are taken into account as detailed in section 6 of this report.

4. Identity

The identity of ethephon is given in Appendix I.

The active substance shall comply with the FAO specification and there seem not to be reasons for deviating from that specification; the FAO specification is given in Appendix I of this report.

The manufacturing impurities Mono 2-chloroethyl ester, 2-chloroethyl phosphonic acid and 1,2-Dichloroethane are of toxicological concern and must not exceed respectively 20 g/kg and 0.5 g/kg in the technical material and 2% and 0.04% of the ethephon declared content in the technical concentrate.

5. Endpoints and related information

In order to facilitate Member States, in granting or reviewing authorisations, to apply adequately the provisions of Article 4(1) of Directive 91/414/EEC and the uniform principles laid down in Annex VI of that Directive, the most important endpoints were identified during the re-evaluation process. These endpoints are listed in the conclusion of the EFSA, and at section 3 of this report.

6. Particular conditions to be taken into account on short term basis by Member States in relation to the granting of authorisations of plant protection products containing ethephon

On the basis of the proposed and supported uses (as listed in Appendix II) no particular issues have been identified as requiring particular and short term attention from all Member States.

7. List of studies to be generated

No further studies were identified which were at this stage considered necessary in relation to the inclusion of ethephon in Annex I under the current inclusion conditions.

Some endpoints however may require the generation or submission of additional studies to be submitted to the Member States in order to ensure authorisations for use under certain conditions. The list of studies to be generated, still ongoing or available but not peer reviewed can be found in the relevant part of the EFSA Scientific report (page 27).

8. Information on studies with claimed data protection

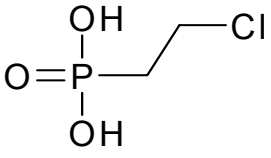
For information of any interested parties, the rapporteur Member State will keep available a document which gives information about the studies for which the main data submitter has claimed data protection and which during the re-evaluation process were considered as essential with a view to annex I inclusion. This information is only given to facilitate the operation of the provisions of Article 13 of Directive 91/414/EEC in the Member States. It is based on the best information available but it does not prejudice any rights or obligations of Member States or operators with regard to its uses in the implementation of the provisions of Article 13 of the Directive 91/414/EEC and neither does it commit the Commission.

9. Updating of this review report

The information in this report may require to be updated from time to time in order to take account of technical and scientific developments as well as of the results of the examination of any information referred to the Commission in the framework of Articles 7, 10 or 11 of Directive 91/414/EEC. Any such adaptation will be finalised in the Standing Committee on the Food Chain and Animal Health, in connection with any amendment of the inclusion conditions for ethephon in Annex I of the Directive.

APPENDIX I**Identity**

ETHEPHON

Common name (ISO)	Ethephon (No ISO common name is available, the name “ethephon” is approved by the American National Standards Institute, and the name “chlorethephon” is used in New Zealand.)
Chemical name (IUPAC)	2-chloroethylphosphonic acid
Chemical name (CA)	(2-chloroethyl)phosphonic acid
CIPAC No	373
CAS No	16672-87-0
EEC No	240-718-3
FAO SPECIFICATION	Ethephon technical: > 910 g/kg <u>MEPHA</u> : Mono 2-chloroethyl ester, 2-chloroethyl phosphonic acid: maximum 20 g/kg <u>1,2-Dichloroethane</u> : maximum 0.5 g/kg (Specification 373/TC/S/F (2000))
Minimum purity	910 g/kg (technical dry material - TC) 692 g/kg (technical concentrate - TK) <u>MEPHA</u> : Mono 2-chloroethyl ester, 2-chloroethyl phosphonic acid : Maximum 2 % of the ethephon declared content <u>1,2-Dichloroethane</u> : Maximum 0.04% of the ethephon declared content
Molecular formula	C ₂ H ₆ ClO ₃ P
Molecular mass	144.5
Structural formula	

APPENDIX II

List of uses supported by available data

ETHEPHON

Crop and/or situation (a)	Member State or Country	Product name	F G or I (b)	Pests or Group of pests controlled (c)	Formulation		Application				Application rate per treatment			PHI (days) (l)	Remarks: (m)
					Type (d-f)	Conc. of as (i)	method kind (f-h)	growth stage & season (j)	number min max (k)	interval between applications (min)	kg as/hl min max	water l/ha min max	kg as/ha min max		
Cereals: wheat (winter)	EU South	Cerone	F	Growth regulation	SL	480 g/L	Foliar spraying	BBCH 37-39 (maxi)	1	not applicable	0.24	200	0.48	Cf. growth stage	PHI: treatment period is determined by growth stage
Cereals: wheat (winter)	EU North	Cerone	F	Growth regulation	SL	480 g/L	Foliar spraying	M-N Baggiolini scale (BBCH 41-51)	1	not applicable	0.24	200	0.48	Cf. growth stage	PHI: treatment period is determined by growth stage

Crop and/or situation (a)	Member State or Country	Product name	F G or I (b)	Pests or Group of pests controlled (c)	Formulation		Application				Application rate per treatment			PHI (days) (l)	Remarks: (m)
					Type (d-f)	Conc. of as (i)	method kind (f-h)	growth stage & season (j)	number min max (k)	interval between applications (min)	kg as/hl min max	water l/ha min max	kg as/ha min max		
Cereals: barley (winter and spring)	EU South	Cerone	F	Growth regulation	SL	480 g/L	Foliar spraying	BBCH 37-39 (maxi)	1	not applicable	S: 0.18 W: 0.24	200	S: 0.36 W: 0.48	Cf. growth stage	PHI: treatment period is determined by growth stage
Cereals: barley (winter and spring)	EU North	Cerone	F	Growth regulation	SL	480 g/L	Foliar spraying	M-N Baggiolini scale (BBCH 41-51)	1	not applicable	S: 0.18 W: 0.24	200	S: 0.36 W: 0.48	Cf. growth stage	PHI: treatment period is determined by growth stage

S: spring; W: Winter

- Remarks:**
- (a) For crops, the EU and Codex classifications (both) should be used; where relevant, the use situation should be described (*e.g.* fumigation of a structure)
 - (b) Outdoor or field use (F), glasshouse application (G) or indoor application (I)
 - (c) *e.g.* biting and suckling insects, soil born insects, foliar fungi, weeds
 - (d) *e.g.* wettable powder (WP), emulsifiable concentrate (EC), granule (GR)
 - (e) GCPF Codes - GIFAP Technical Monograph No 2, 1989
 - (f) All abbreviations used must be explained
 - (g) Method, *e.g.* high volume spraying, low volume spraying, spreading, dusting, drench
 - (h) Kind, *e.g.* overall, broadcast, aerial spraying, row, individual plant, between the plants - type of equipment used must be indicated
 - (i) g/kg or g/l
 - (j) Growth stage at last treatment (BBCH Monograph, Growth Stages of Plants, 1997, Blackwell, ISBN 3-8263-3152-4), including where relevant, information on season at time of application
 - (k) The minimum and maximum number of application possible under practical conditions of use must be provided
 - (l) PHI - minimum pre-harvest interval
 - (m) Remarks may include: Extent of use/economic importance/restrictions