



EUROPEAN COMMISSION
HEALTH & CONSUMERS DIRECTORATE-GENERAL

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

Clethodim
SANCO/13456/2010 final
28 January 2011

Review report for the active substance **clethodim**
finalised in the Standing Committee on the Food Chain and Animal Health at its meeting on
28 January 2011
in view of the inclusion of clethodim 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 clethodim, made in the context of a new application by the data submitter after the non-inclusion of this substance.

Clethodim is a substance that was covered by the third stage 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 market¹, with a view to the possible inclusion of this substance in Annex I to the Directive.

Article 11(e) of Commission Regulation (EC) No 1490/2002² laying down detailed rules for the implementation of the third stage of the work programme offered the possibility for the notifier to withdraw, under specific conditions, its support for the active substance. All notifiers withdrew their support and clethodim was not included through Commission Decision 2008/934/EC³.

In accordance with Article 13 of Regulation (EC) No 33/2008⁴, Arysta LifeSciences S.A.S., the sole data submitter presented, on 3 June 2009 a request to the Netherlands, the rapporteur Member State, for a new application aiming at Annex I inclusion of the substance.

The Netherlands finalised in November 2009 its examination, in the form of an additional report to the original Draft Assessment Report. This Report was sent to the Commission and the European Food Safety Authority on 1 December 2009 and included a recommendation as to include clethodim in Annex I for the supported use.

¹ O.J. No L 230, 19.8.1991

² O.J. No L 224, 21.8.2002

³ OJ No L 333, 11.12.2008, p.11

⁴ OJ No L 252, 20.9.2008, p. 37

In accordance with the provisions of Article 19 of Regulation (EC) No 33/2008, the EFSA organised the consultation on the draft assessment report by all the Member States as well as by Arysta LifeSciences S.A.S. being the sole data submitter, on 18 January 2010 by making it available.

The EFSA organised a focused consultation of scientific experts from a certain number of Member States, to review the additional report, the draft assessment report and the comments received thereon (peer review) and to deliver its conclusion.

In accordance with the provisions of Article 20 of Regulation (EC) No 33/2008 the EFSA sent to the Commission its conclusion on the risk assessment of the active substance clethodim⁵. This conclusion refers to background document A (draft assessment report and additional report) and background document B (EFSA peer review report).

In accordance with the provisions of Article 21 of Regulation (EC) No 33/2008, the Commission referred 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 28 January 2011.

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 hereto, has been developed and finalised in support of Commission Directive **2011/21/EU**⁶ concerning the inclusion of clethodim in Annex I to Directive 91/414/EEC, and to assist the Member States in decisions on individual plant protection products containing clethodim they have to take in accordance with 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 22 of Regulation (EC) No 33/2008, this review report will be made available for public consultation by any interested parties.

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

⁵ *European Food Safety Authority ; Conclusion on the peer review of the pesticide risk assessment of the active substance clethodim. EFSA Journal 2010; 8(9):1771. [93 pp.]. doi:10.2903/j.efsa.2010.1771. Available online: www.efsa.europa.eu*

⁶ OJ L 58, 3.3.2011, p. 49–52

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 clethodim 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 clethodim 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 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 amendment of the inclusion directive 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	0.16 mg/kg bw/day
ARfD	not allocated/not necessary
AOEL	0.2 mg/kg bw/day

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) is $\leq 3\%$ of the Acceptable Daily Intake (ADI), (EFSA PRIMo rev. 2). Additional intake from water is not expected to give rise to intake problems.

The review has identified 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.

4. Identity

The main identity of clethodim is given in Appendix I.

At the time of the evaluation no FAO specification was allocated.

The review has established that for the active substance notified by the data submitter the manufacturing impurity toluene is considered to be of toxicological concern and the maximum level of 4 g/kg is established.

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 clethodim.

On the basis of the proposed and supported use (as listed in Appendix II), the following particular issues have been identified as requiring particular and short term attention from all Member States, in the framework of any authorisations to be granted:

Only uses as herbicide on sugar beet may be authorised.

Member States should pay particular attention to:

- The protection to aquatic organisms, birds and mammals and ensure that conditions of use prescribe the application of adequate risk mitigation measures.

7. List of studies to be generated

Further studies were identified which were at this stage considered necessary in relation to the inclusion of clethodim in Annex I under the current inclusion conditions.

The concerned Member States shall request the submission of further information on the quantification of the soil metabolite clethodim oxazole sulfoxide, confirmation of soil and groundwater exposure assessments for the two soil photolysis metabolites 2-[3-chloroallyloxyimino]butanoic acid and trans-3-chloroacrylic acid and on the residue definition for risk assessment and consequently the consumer risk assessment in relation to the metabolites M3A, M15R, M17R and M18R, identification of the breakdown products in the shelf-life study and the isomer ratio present in the residue in treated crops.

They shall ensure that the notifier at whose request clethodim has been included in this annex provide such studies to the Commission within two years from the entry into force of the Directive of inclusion.

Some other 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 Conclusions.

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 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

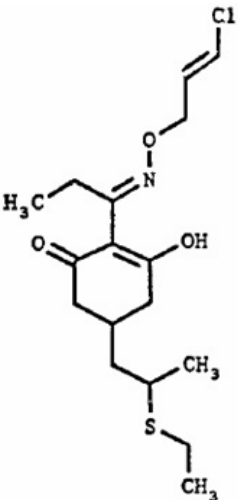
Article 13 of Directive 91/414/EEC in the Member States. It is based on the best information available but it does not prejudice any rights or obligations of Member States or operators with regard to its uses in the implementation of the provisions of Article 13 of the Directive 91/414/EEC and neither 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 clethodim in Annex I of the Directive.

APPENDIX I

Identity
CLETHODIM

Common name (ISO)	Clethodim
Chemical name (IUPAC)	<i>(5RS)-2-[(1EZ)-1-[(2E)-3-chloroallyloxyimino]propyl]-5-[(2RS)-2-(ethylthio)propyl]-3-hydroxycyclohex-2-en-1-one</i>
Chemical name (CA)	2-[1-[[[(2E)-3-chloro-2-propen-1-yl]oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one
CIPAC No	508
CAS No	99129-21-2
EEC No	Not available
FAO SPECIFICATION	Not available
Minimum purity	930 g/kg
Identity of relevant impurities (of toxicological, ecotoxicological and/or environmental concern)	toluene max. 4 g/kg
Molecular formula	C ₁₇ H ₂₆ ClNO ₃ S
Molecular mass	359.92 g/mol
Structural formula	 <p>The image shows the chemical structure of Clethodim. It consists of a cyclohexene ring with a ketone group (=O) at position 1, a hydroxyl group (-OH) at position 2, and a propyl chain at position 3. The propyl chain is substituted with a methyl group (-CH₃) at the 2-position and an ethylthio group (-S-CH₂-CH₃) at the 1-position. At position 4 of the cyclohexene ring, there is an imino group (=N-). The nitrogen atom of the imino group is bonded to a propyl chain that is substituted with a methyl group (-CH₃) at the 2-position and an allyloxy group (-O-CH₂-CH=CH-Cl) at the 1-position. The allyloxy group is in the (1EZ) configuration, and the imino group is in the (2E) configuration.</p>

APPENDIX II
List of uses supported by available data
CLETHODIM

Crop and/or situation (a)	Member State or Country	Product name	F G or I (b)	Pests or Group of pests controlled (c)	Preparation		Application				Application rate per treatment (for explanation see the text in front of this section)			PHI (days) (m)	Remarks
					Type (d-f)	Conc. as g/l (i)	method kind (f-h)	growth stage & season (j)	number min/max (k)	interval between applications (min)	kg as/hL min-max (l)	Water L/ha min-max	kg as/ha min-max (l)		
Sugar beet	Northern Europe	Select 240	F	Annual and perennial grass weeds	EC	240 g / L	Downwards spraying with tractor mounted equipment	Ca. 40	1	n.a.	0.15	200	0.3	56	Select 240 is to be used in combination with an oily adjuvant (0.5% v/v)
Sugar beet	Southern Europe	Select 240	F	Annual and perennial grass weeds	EC	240 g/L	Downwards spraying with tractor mounted equipment	Ca. 40	2	2 weeks	0.064	300	0.192	56	Select 240 is to be used in combination with an oily adjuvant (0.5% v/v)

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