EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR HEALTH AND FOOD SAFETY

Safety of the Food Chain
Pesticides and Biocides

COMMISSION STAFF WORKING DOCUMENT[1]

2,4-D
SANCO/11961/2014 Rev 3 final
9 October 2015

Final Review report for the active substance 2,4-D

finalised in the Standing Committee on Plants, Animals, Food and Feed
at its meeting on 9 October 2015
in view of the approval of 2,4-D as active substance in accordance with
Regulation (EC) No 1107/2009

1. Procedure followed for the re-evaluation process

This review report has been established as a result of the evaluation of the active substance 2,4-D, in accordance with Regulation (EC) No 1107/2009[2] and Commission Regulation (EU) No 1141/2010[3] following the submission of an application to renew the approval of this active substance expiring in December 2015.

Commission Regulation (EU) No 1141/2010, as amended by Commission Implementing Regulation (EU) No 380/2013[4], lays down the procedure for the renewal of the second group of active substances in Annex I to Directive 91/414/EEC[5] and includes 2,4-D.

2,4-D is a substance that was included in Annex I to Council Directive 91/414/EEC concerning the placing of plant protection products on the market, by Commission Directive 2001/103/EC[6]. 2,4-D is deemed to have been approved under Regulation (EC) No 1107/2009 and is listed in Part A of the Annex to Commission Implementing Regulation (EU) No 540/2011[7].

In accordance with the provisions of Article 5 of Directive 91/414/EEC, the European Union 2,4-D Task Force 2012 notified to the Commission of their wish to renew the approval of the active substance 2,4-D in Annex I to the Directive. Commission Directive 2010/77/EU[8] extended until 31 December 2015 the period of approval of 2,4-D to allow the completion of its review.

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1 Does not necessarily represent the views of the Commission.
2 OJ L 309, 24.11.2009, p. 1.
3 OJ L 322, 8. 12.2010, p. 10.
4 OJ L 116, 26.4.2013, p.4.
5 OJ L 230, 19.8.1991, p. 1.
6 OJ L 113, 30.11.2001, p. 37.
7 OJ L 153, 11.6.2011, p. 1.
8 OJ L 293, 11.11.2010, p. 48
8 EFSA (European Food Safety Authority), 2014. Conclusion on the peer review of the pesticide risk assessment of the active substance 2,4-D. EFSA Journal 2014;12(9):3812, 77 pp.

Commission Regulation (EU) No 1141/2010 designated the rapporteur Member States and the co-rapporteur Member States which had to submit the relevant renewal assessment reports and recommendations to the European Food Safety Authority (EFSA).

For 2,4-D the rapporteur Member State was Greece and the co-rapporteur Member State was Poland.

Greece finalised in March 2013 its examination, in the form of a renewal assessment report. This Report was sent to the Commission and the European Food Safety Authority on 4 March 2013 and included a recommendation concerning the decision to be taken with regard to the renewal of the approval of 2,4-D for the supported uses.

In accordance with Article 16 of Commission Regulation (EU) No 1141/2010, the Commission requested EFSA to arrange an expert consultation on the rapporteur Member State's renewal assessment report and deliver its conclusions.

Therefore, EFSA organised an intensive consultation of technical experts from Member States, to review the renewal assessment report and the comments received thereon (peer review).

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)[9]. This conclusion refers to background document A (renewal assessment report and additional report) and background document B (EFSA peer review report).

According to the provisions of Article 17 of Regulation (EU) No 1141/2010, the Commission referred a draft review report on the renewal of approval to the Standing Committee on Plants, Animals, Food and Feed for final examination. The draft review report on renewal of approval was finalised in the meeting of the Standing Committee on 9 October 2015.

The present review report on renewal of approval 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 (part of 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 Implementing Regulation (EU) 2015/2033[10]** concerning the renewal of approval of 2,4-D as active substances under Regulation (EC) No 1107/2009, and to assist the Member States in decisions on individual plant protection products containing 2,4-D they have to take in accordance with the provisions of that Regulation, and in particular the provisions of Article 29(1) of Regulation (EC) No 1107/2009 and the uniform principles laid down in Regulation (EU) No 546/2011[11].

This review report provides also for the evaluation required under part I, Section A.2(b) of the above mentioned uniform principles, as well as under several specific sections of chapter B of these

[10] OJ L 298, 14.11.2015, p. 8-11.
[11] OJ L 155, 11.6.2011, p. 127.

principles. In these sections it is provided that Member States, in evaluating applications and granting authorisations, shall take into account the information concerning the requirements of Regulation (EU) No 544/2011[12], submitted for the purpose of (renewal of) approval of the active substances, as well as the result of the evaluation of those data.

In accordance with the provisions of Article 18 of Regulation (EU) No 1141/2010, this review report will be made available to the public.

The information in this review report is, at least partly, based on information which is confidential and/or protected under the provisions of Regulation (EC) No 1107/2009. It is therefore recommended that this review report would not be accepted to support any registration outside the context of that Regulation, 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 Regulation (EC) No 1107/2009

The overall conclusion from the evaluation is that it may be expected that plant protection products containing 2,4-D will still fulfil the safety requirements laid down in Article 4(1) to (3) of Regulation (EC) No 1107/2009. 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 29(1) of Regulation (EC) No 1107/2009 and the uniform principles laid down in Regulation (EU) No 546/2011, for each 2,4-D 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 applicant 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 29 (1) of Regulation (EC) No 1107/2009 and of the uniform principles laid down in Regulation (EU) No 546/2011.

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

ADI: 0,05 mg/kg bw per day,
ARfD: 0,75 mg/kg bw,
AOEL: 0,15 mg/kg bw per 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) for all considered consumer groups is estimated to be less than 2% of the Acceptable Daily Intake (ADI) based on EFSA PRIMo Model rev.2 and the highest International Estimated Short-Term Intake (IESTI) is less than 1% of the Acute Reference dose (ARfD) (milk, UK infant).

[12] OJ L 155, 11.6.2011, p. 1.

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(3)(e) of Regulation (EC) No 1107/2009, provided that certain conditions are taken into account as detailed in section 6 of this report.

2,4-D is not classified or proposed to be classified as a carcinogenic substance of category 2 or a substance toxic for reproduction of category 2 in accordance with the provisions of Regulation (EC) No 1272/2008. As a consequence, the conditions of the interim provisions of Annex II, Point 3.6.5 of Regulation (EC) No 1107/2009 concerning human health for the consideration of endocrine disrupting properties are not met. However, it is considered that for further reducing scientific uncertainty regarding the potential endocrine disruption potential of 2,4-D, the complete study results from the existing extended one-generation toxicity study should be examined. Therefore, a request for the submission of these data as confirmatory information is made.

In its conclusion EFSA points out there is evidence of potentially adverse endocrine effects on the thyroid hormone system which also might affect other organ systems. Furthermore, cases of increased adrenal weight and cortical hypertrophy have been reported. Considering however that these effect only occurred at levels far above the levels derived from the most critical mammalian toxicity studies that have been retained for setting the NOAEL, it may be assumed that any risk specifically linked to endocrine mediated effects is adequately covered by the current risk assessment.

With regards to the ecotoxicological potential endocrine activity of 2,4-D, EFSA does not identify specific concerns for birds and fish and therefore no specific assays in these domains are to be submitted. Nonetheless, it cannot be excluded that the aforesaid activity on thyroid hormone systems observed a high doses in mammals, is of relevance to amphibians. It is thus necessary that an Amphibian Metamorphosis Assay (AMA) (OECD (2009) Test No 231) is performed and assessed as confirmatory information.

4. Identity

The main identity of 2,4-D is given in Appendix I.

The active substance shall have a minimum purity of 960 g/kg.

The maximum contents of free phenols (expressed as 2,4-DCP) shall not exceed 3 g/kg.

The content of dioxins and furans that could be formed as manufacturing by-products shall be maximum 0,01 mg/kg TCDD toxic equivalents. The review has established that the sources of all the companies of the EU 2,4 Task Force 2012 comply with this limit. The Dow AgroSciences specification is fully accepted. For Nufarm a revised specification is needed to include one additional significant impurity, and the Makhteshim-Agan Agro Poland S.A. (now ADAMA)-source needs a revised specification where the significant phenols are specified separately.

5. Endpoints and related information

In order to facilitate Member States, in granting or reviewing authorisations, to apply adequately the provisions of Article 29(1) of Regulation (EC) No 1107/2009 and the uniform principles laid down in Regulation (EU) No 546/2011, the most important endpoints were identified during the re-evaluation process. These endpoints are listed in the conclusion of the EFSA, and in 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 2,4-D

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

- the risk to aquatic organisms from the parent substance and photolysis metabolite 1,2,4-benzenetriol;
- the risk to aquatic organisms and terrestrial organisms from metabolite 4-CP in anaerobic conditions;
- the consumer risk from residues of 2,4-D and metabolite 2,4-DCP in cases of uses above 750 g/ha.

Conditions of use shall include risk mitigation measures, where appropriate.

7. List of studies to be generated

Further information is identified which was at this stage considered necessary in relation to the approval of 2,4-D under the current approval conditions. This is particularly the case for:

1. The submission of the complete study results from the existing extended one-generation study;

2. The submission of an Amphibian Metamorphosis Assay (AMA) (OECD (2009) Test No 231) as to verify potential endocrine properties of the substance.

The notifier shall submit to the Commission, the Member States and the Authority the information set out in point (1) by 4 June 2016 and the information set out in point (2) by 4 December 2017.

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.
A complete list of studies to be generated, still ongoing or available but not peer reviewed can be found in the relevant part of the EFSA Conclusion (page 17 - 18).

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 applicant has claimed data

protection and which during the re-evaluation process were considered as essential with a view to approval under Regulation (EC) No 1107/2009. This information is only given to facilitate the operation of the provisions of Article 62 of Regulation (EC) No 1107/2009 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 62 of Regulation (EC) No 1107/2009 and neither does it commit the Commission.

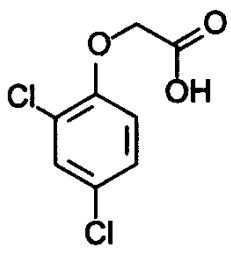
9. Updating of this review report

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 13, 21, 38, 44, 56 of Regulation (EC) No 1107/2009. Any such adaptation will be finalised in the Standing Committee on Plants, Animals, Food and Feed in connection with any amendment of the approval conditions for 2,4-D.

APPENDIX I

Main identity

2,4-D

Common name (ISO)	2,4-D
Chemical name (IUPAC)	(2,4-dichlorophenoxy)acetic acid
Chemical name (CA)	(2,4-dichlorophenoxy)acetic acid
CIPAC No	1
CAS No	94-75-7
EC No (EINECS or ELINCS) ‡	202-361-1
FAO SPECIFICATION	AGP: CP/310, FAO 1994: 960 g/kg
Minimum purity	960 g/kg EU 2,4-D Task Force 2012: Nufarm: min. 960 g/kg Dow AgroSciences: min. 960 g/kg Makhteshim-Agan Agro Poland S.A: min 970 g/kg
Identity of relevant impurities (of toxicological, ecotoxicological and/or environmental concern) in the active substance as manufactured	Dioxins and furans: Free phenols (expressed as 2,4 DCP): not more than 3 g/kg TCDD toxic equivalents (TEQ): not more than 10 µg/kg (all the companies of the "EU 2,4-D Task Force 2012" comply with this limit)
Molecular formula	$C_8H_6Cl_2O_3$
Molecular mass	221 g/mol
Structural formula	

APPENDIX II
List of uses supported by available data
2,4-D

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. of a.s. (i)	method kind (f-h)	growth stage & season (j)	number min-max (k)	Interval between applications	g a.s./hL min-max (l)	Water L/ha min-max	g a.s./ha min-max (l)		
Winter wheat, winter barley, winter oats, winter rye & triticale	EU	2,4-D DMA 600 SL	F	Dicotyledonous weeds	SL	600 g a.s./L	Broad-cast	21 to 32 (Feb to May)	1	-	187.5 - 750	100-400	Max 750	N/A	
Spring wheat, spring barley, spring oats & spring rye	EU	2,4-D DMA 600 SL	F	Dicotyledonous weeds	SL	600 g a.s./L	Broad-cast	11 to 32 (March to May)	1	-	187.5 - 750	100-400	Max 750	N/A	

(a) For crops, the EU and Codex classifications (both) should be taken into account; where relevant, the use situation should be described (e.g. fumigation of a structure)
(b) Outdoor or field use (F), greenhouse application (G) or indoor application (I)
(c) *e.g.* biting and sucking insects, soil born insects, foliar fungi, weeds
(d) *e.g.* wettable powder (WP), emulsifiable concentrate (EC), granule (GR)
(e) CropLife International Technical Monograph no 2, 6th Edition. Revised May 2008. Catalogue of pesticide
(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 plant- 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) Indicate the minimum and maximum number of applications possible under practical conditions of use
(l) The values should be given in g or kg whatever gives the more manageable number (e.g. 200 kg/ha instead of 200 000 g/ha or 12.5 g/ha instead of 0.0125 kg/ha
(m) PHI - minimum pre-harvest interval