Evaluation of confirmatory data following the Article 12 MRL review for dimethomorph

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Abstract
The applicant BASF SE submitted a request to the competent national authority in Germany to evaluate the confirmatory data that were identified for dimethomorph in the framework of the maximum residue level (MRL) review under Article 12 of Regulation (EC) No 396/2005 as not available. The submitted residue data on raspberries were satisfactorily addressing the data gaps on raspberries and blackberries. Considering the new information provided, it is appropriate to lower the existing MRLs for blackberries and raspberries to the limit of quantification. A revision of the consumer risk assessment previously performed for dimethomorph was not required.

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Keywords: dimethomorph, confirmatory data, pesticide, MRL, consumer risk assessment

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Summary

In 2011, when the European Food Safety Authority (EFSA) reviewed the maximum residue levels (MRLs) for dimethomorph according to Article 12 of Regulation (EC) No 396/2005 (MRL review), EFSA identified some information as unavailable (data gaps) and derived tentative MRLs for those uses which were not fully supported by data but for which no risk to consumers was identified. The following data gaps were noted:

1) four trials complying with the northern outdoor Good Agricultural Practice (GAP) on blackberries or raspberries;
2) two trials complying with the northern outdoor GAP on spinaches.

Tentative MRL proposals have been implemented in the MRL legislation by Commission Regulation (EU) No 668/2013, including footnotes related to data gap number 1 indicating the type of information that should be provided to maintain the tentative MRL by 13 July 2015. Data gap number 2 was not implemented in the MRL regulation, because an alternative MRL was established for spinaches which was fully supported by data; this alternative MRL was derived by EFSA in a reasoned opinion published after the MRL review was completed.

In accordance with the agreed procedure set out in the working document SANTE/10235/2016, BASF SE submitted an application to the competent national authority in Germany (rapporteur Member State (RMS)) to evaluate the confirmatory data identified during the MRL review. The RMS assessed the new information in an evaluation report, which was submitted to the European Commission and forwarded to EFSA on 26 April 2018. When assessing the evaluation report, EFSA identified points which needed further clarifications. On 16 July 2018, the evaluating Member State (EMS) submitted a revised evaluation report which addressed the points for clarification.

The summary table below provides an overview of the assessment of confirmatory data and the recommended MRL modifications to Regulation (EU) No 396/2005.

| Code(a) | Commodity | Existing EU MRL(b) (mg/kg) | Proposed EU MRL (mg/kg) | Comment/justification |
|---------|-----------|----------------------------|-------------------------|-----------------------|
| 0153010 | Blackberries | 0.05 (further risk management considerations required) | 0.01* (footnote related to data gap No 1) | The data gaps identified by EFSA concerning new residue trials have been addressed. For the uses on blackberries and raspberries assessed, it is appropriate to lower the MRL to the LOQ of 0.01 mg/kg. Before lowering the MRL, it should be clarified whether the current or a lower MRL needs to be maintained due to a more recent use authorised for a plant protection product containing dimethomorph on these crops leading to residues up to 0.05 mg/kg. The previous consumer risk assessment remains valid. |
| 0153030 | Raspberries (red and yellow) | 0.05 (further risk management considerations required) | 0.01* (footnote related to data gap No 1) | The data gaps identified by EFSA concerning new residue trials have been addressed. For the uses on blackberries and raspberries assessed, it is appropriate to lower the MRL to the LOQ of 0.01 mg/kg. Before lowering the MRL, it should be clarified whether the current or a lower MRL needs to be maintained due to a more recent use authorised for a plant protection product containing dimethomorph on these crops leading to residues up to 0.05 mg/kg. The previous consumer risk assessment remains valid. |

MRL: maximum residue level; LOQ: limit of quantification.
*: Indicates that the MRL is set at the limit of analytical quantification (LOQ).
(a): Commodity code number according to Annex I of Regulation (EC) No 396/2005.
(b): Existing EU MRL and corresponding footnote on confirmatory data.
ft 1: The European Food Safety Authority identified some information on residue trials as unavailable. When reviewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by 13 July 2015; or, if that information is not submitted by that date, the lack of it (footnote related to data gap No 1).
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Assessment

The review of existing maximum residue levels (MRLs) for the active substance dimethomorph\(^1\) according to Article 12 of Regulation (EC) No 396/2005\(^2\) (MRL review) has been performed in 2011 (EFSA, 2011a). The European Food Safety Authority (EFSA) identified some information as unavailable (data gaps) and derived tentative MRLs for those uses not fully supported by data but for which no risk to consumers was identified. The following data gaps were identified by EFSA:

1) four trials complying with the northern outdoor GAP on blackberries or raspberries;
2) two trials complying with the northern outdoor GAP on spinaches.

The MRL modifications proposed following the MRL review have been implemented in the MRL legislation by Commission Regulation (EU) No 668/2013\(^3\), including footnotes stating the data gaps identified by EFSA in point (1) above as confirmatory data requirement. The data gap identified by EFSA in point (2) above has not been implemented as a confirmatory data requirement in the MRL legislation because risk managers took into account the MRL for spinaches proposed by EFSA in a reasoned opinion published after the MRL review was completed (EFSA, 2011b).

Any parties having an interest in maintaining the proposed tentative MRL were requested to address the confirmatory data requirement by 13 July 2015. In accordance with the specific provisions the applicant, BASF SE, submitted an application to the competent national authority in Germany (designated rapporteur Member State (RMS)) to evaluate the confirmatory data identified during the MRL review. The applicant provided new residue trials on raspberries addressing the data gap on raspberries, which can be extrapolated to blackberries to cover the data gap identified for blackberries.

The RMS assessed the new information in an evaluation report, which was submitted to the European Commission and forwarded to EFSA on 26 April 2018 (Germany, 2018). The evaluation of confirmatory data was performed in accordance with the procedure set out in the Commission Staff Working Document SANTE/10235/2016 (European Commission, 2016). EFSA proceeded with the assessment of the application as requested by the European Commission in accordance with Article 9 of the Regulation. During the detailed assessment, EFSA identified points which needed further clarifications. On 16 July 2018, the RMS submitted a revised evaluation report which addressed the points for clarification.

EFSA based its assessment on the evaluation report submitted by the RMS (Germany, 2018) and the reasoned opinion on the MRL review, taking into account the additional assessments on dimethomorph performed after the MRL review (EFSA, 2011b, 2012, 2013, 2015, 2016a,b, 2017).

For this application, the data requirements established in Regulation (EU) No 544/2011\(^4\) and the guidance documents applicable at the date of implementation of the confirmatory data requirements are applicable. The assessment is performed in accordance with the legal provisions of the Uniform Principles for the Evaluation and the Authorisation of Plant Protection Products adopted by Commission Regulation (EU) No 546/2011\(^5\).

A detailed description of the Good Agricultural Practices (GAPs) for the uses of dimethomorph, which are relevant for the current confirmatory data evaluation, is reported in Appendix A. Compared to the GAP assessed in the MRL review where a preharvest interval (PHI) was not set, the applicant defined a minimum PHI of 90 days. This more critical use is considered still representative for the GAP assessed in the MRL review.

An updated list of end points, including the end points of the relevant confirmatory data evaluated in this application, is presented in Appendix B.

The peer review of the renewal of approval of the active substance in accordance with Regulation (EC) No 1107/2009 is currently ongoing; thus the conclusions reported in this reasoned opinion might need to be reconsidered in the light of the outcome of the peer review.

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1. The structural formula of the parent compound is reported in Appendix C.
2. Regulation (EC) No 396/2005 of the Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC. OJ L 70, 16.3.2005, p. 1–16.
3. Commission Regulation (EU) No 668/2013 of 12 July 2013 amending Annexes II and III to Regulation (EC) No 396/2005 of the European Parliament and of the Council as regards maximum residue levels for 2,4-DB, dimethomorph, indoxacarb, and pyraclostrobin in or on certain products. OJ L 192, 13.7.2013, p. 39–71.
4. Commission Regulation (EU) No 544/2011 of 10 June 2011 implementing Regulation (EC) No 1107/2009 of the European Parliament and of the Council as regards the data requirements for active substances. OJ L 155, 11.6.2011, p. 1–66.
5. Commission Regulation (EU) No 546/2011 of 10 June 2011 implementing Regulation (EC) No 1107/2009 of the European Parliament and of the Council as regards uniform principles for evaluation and authorisation of plant protection products. OJ L 155, 11.6.2011, p. 127–175.
The evaluation report submitted by the RMS (Germany, 2018) is considered as a supporting document to this reasoned opinion and, thus, is made publicly available as a background document to this reasoned opinion.

1. Residues in plants

1.1. Nature of residues and methods of analysis in plants

   Not relevant for the current assessment.

1.1.1. Nature of residues in primary crops

   Not relevant for the current assessment.

1.1.2. Nature of residues in rotational crops

   Not relevant for the current assessment.

1.1.3. Nature of residues in processed commodities

   Not relevant for the current assessment.

1.1.4. Methods of analysis in plants

   Dimethomorph (sum of isomers) can be enforced at or above 0.01 mg/kg in high acidic content commodities, to which group the crops assessed belong (EFSA, 2011a).

1.1.5. Stability of residues in plants

   Not relevant for the current assessment.

1.1.6. Proposed residue definitions

   Not relevant for the current assessment.

1.2. Magnitude of residues in plants

1.2.1. Magnitude of residues in primary crops

   In order to address the data gap number 1, six residue trials conducted in northern Europe (NEU) on raspberries were submitted. The extrapolation from data on raspberries to blackberries is possible (European Commission, 2011). EFSA disregarded one trial as it was extremely underdosed, whereas the other two were compliant with the GAP. Residues of dimethomorph at PHI were below the limit of quantification (LOQ) of 0.01 mg/kg. These trials confirmed that quantifiable residues are not expected in the fruits when dimethomorph is applied to raspberries at the early stages of leaf development, well before the formation of the consumable parts of the crop.

   The trial samples were stored for a maximum of 8 months under conditions for which integrity of the samples was demonstrated. According to the RMS, the analytical methods used to analyse the residue trial samples have been sufficiently validated (Germany, 2018).

   Overall, only two valid trials instead of the requested four GAP-compliant residue trials were available. EFSA concluded that the reduced data package is sufficient to address the data gaps for NEU use on raspberries and blackberries, taking into account the timing of the application from BBCH 07 (beginning of bud burst, first green or red leaf tips just visible) to BBCH 09 (leaf tips extended beyond scales), the findings of metabolism studies in primary crops (EFSA, 2011a) and the results of the available residue trials which provided sufficient evidence that the reported use does not lead to quantifiable residues in raspberry and blackberry fruits.

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6 Data gap number 1: four trials complying with the northern outdoor GAP on blackberries or raspberries.
7 The RMS reported an indoor GAP and residue trials on raspberries conducted indoor. Since the indoor use on raspberries and blackberries was not assessed under the MRL review (EFSA, 2011a), this information is not relevant for the evaluation of the confirmatory data and was disregarded.
Data gap number 2\textsuperscript{8} was not implemented as a footnote for spinaches in the MRL legislation, because risk managers decided to take into consideration the MRL of 1 mg/kg\textsuperscript{9} proposed by EFSA in a further reasoned opinion (EFSA, 2011b).

1.2.2. Magnitude of residues in rotational crops
Not relevant for the current assessment.

1.2.3. Magnitude of residues in processed commodities
Not relevant for the current assessment.

1.2.4. Proposed MRLs
The new information provided is sufficient to derive a MRL for raspberries and, by extrapolation, blackberries. Based on the available data, the setting of the MRL at the LOQ of 0.01 mg/kg is appropriate.

2. Residues in livestock
Not relevant for the current assessment.

3. Consumer risk assessment
The submitted confirmatory data did not trigger a revision of the most recent consumer risk assessment performed for dimethomorph (EFSA, 2016b).

4. Conclusion and Recommendations
To address the data gaps identified in the framework of the MRL review, residue data on raspberries and, by extrapolation, to be used on blackberries were submitted by the applicant. The data gaps were considered satisfactorily addressed.

Considering the new information provided, it is appropriate to lower the existing MRLs for blackberries and raspberries to the LOQ. Further consideration may be required by risk managers before lowering the MRL to the LOQ. It should be clarified whether the current or a lower MRL needs to be maintained due to a more recent use authorised for a plant protection product containing dimethomorph on these crops leading to residues up to 0.05 mg/kg.

A revision of the consumer risk assessment for dimethomorph performed previously was not required.

The overview of the assessment of confirmatory data and the recommended MRL modifications are summarised in Appendix B.4.

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EFSA (European Food Safety Authority), 2011b. Modification of the existing MRLs for dimethomorph in spinach and beet leaves (chard). EFSA Journal 2011;9(11):2437, 24 pp. https://doi.org/10.2903/j.efsa.2011.2437
EFSA (European Food Safety Authority), 2012. Reasoned opinion on the modification of the existing MRLs for dimethomorph in several vegetable crops. EFSA Journal 2012;10(7):2845, 35pp. https://doi.org/10.2903/j.efsa.2012.2845
EFSA (European Food Safety Authority), 2013. Reasoned opinion on the modification of the existing MRLs for dimethomorph in seeds of spices and caraway. EFSA Journal 2013;11(2):3126, 27 pp. https://doi.org/10.2903/j.efsa.2013.3126
EFSA (European Food Safety Authority), 2015. Scientific support for preparing an EU position in the 47th Session of the Codex Committee on Pesticide Residues (CCPR). EFSA Journal 2015;13(7):4208, 178 pp. https://doi.org/10.2903/j.efsa.2015.4208

\textsuperscript{8} Data gap number 2: two trials complying with the northern outdoor GAP on spinaches.

\textsuperscript{9} The MRL for spinaches was further amended to the value of 30 mg/kg (Codex MRL) by Regulation (EU) No 2016/567.
EFSA (European Food Safety Authority), 2016a. Reasoned opinion on the modification of the existing maximum residues levels (MRLs) for dimethomorph in various crops. EFSA Journal 2016;14(1):4381, 19 pp. https://doi.org/10.2903/j.efsa.2016.4381

EFSA (European Food Safety Authority), 2016b. Reasoned opinion on the setting of import tolerance for dimethomorph in papaya. EFSA Journal 2016;14(4):4449, 19 pp. https://doi.org/10.2903/j.efsa.2016.4449

EFSA (European Food Safety Authority), 2017. Scientific support for preparing an EU position in the 49th Session of the Codex Committee on Pesticide Residues (CCPR). EFSA Journal 2017;15(7):4929, 162 pp. https://doi.org/10.2903/j.efsa.2017.4929

European Commission, 2011. Appendix D. Guidelines on comparability, extrapolation, group tolerances and data requirements for setting MRLs. 7525/VI/95-rev. 9.

European Commission, 2016. Commission staff working document on the evaluation of data submitted to confirm MRLs following the review of existing MRLs Finalised in the Standing Committee on Plants, Animals, Food and Feed at its meeting on 17 June 2016. SANTE/E4/VW 10235/2016 - Rev. 2, 3pp., Brussels, 17 June 2016.

Germany, 2018. Evaluation report on the evaluation of confirmatory data following the Article 12 MRL review for dimethomorph. February 2018, revised in July 2018, 24 pp.

**Abbreviations**

- **a.s.** active substance
- **BBCH** growth stages of mono- and dicotyledonous plants
- **CCPR** Codex Committee on Pesticide Residues
- **CF** conversion factor for enforcement to risk assessment residue definition
- **EMS** evaluating Member State
- **GAP** Good Agricultural Practice
- **HR** highest residue
- **InChIKey** International Chemical Identifer Key
- **IUPAC** International Union of Pure and Applied Chemistry
- **LOQ** limit of quantification
- **MRL** maximum residue level
- **NEU** northern Europe
- **PHI** pre-harvest interval
- **RA** risk assessment
- **RD** residue definition
- **RMS** rapporteur Member State
- **SEU** southern Europe
- **SMILES** simplified molecular-input line-entry system
- **STMR** supervised trials median residue
- **WP** wettable powder
## Appendix A – Summary of GAPs assessed in the evaluation of confirmatory data

| Crop and/or situation | NEU, SEU, MS or country | F G or I (a) | Pests or Group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days) (d) | Remarks |
|-----------------------|-------------------------|------------|-----------------------------------|-------------|-----------|-------------------------------|----------------|---------|
| Blackberries          | NEU F                    |            | Phytophthora megasperma, P. rubi  | WP 500 g/kg | Drenching BBCH 07-09          | 1 NA NA 1.5 kg/ha 90 | 0.5 g a.s./plant in 200 mL water (unit 1 plant) in autumn or spring at growth recovery |
| Raspberries           | NEU F                    |            | Phytophthora megasperma, P. rubi  | WP 500 g/kg | Drenching BBCH 07-09          | 1 NA NA 1.5 kg/ha 90 | 0.5 g a.s./plant in 200 mL water (unit 1 plant) in autumn or spring at growth recovery |

NEU: northern European Union; SEU: southern European Union; MS: Member State; a.s.: active substance; WP: wettable powder.

(a): Outdoor or field use (F), greenhouse application (G) or indoor application (I).

(b): CropLife International Technical Monograph no 2, 6th Edition. Revised May 2008. Catalogue of pesticide formulation types and international coding system.

(c): Growth stage range from first to 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): PHI: minimum pre-harvest interval.
Appendix B – List of end points

B.1. Residues in plants

B.1.1. Nature of residues and methods of analysis in plants

| Plant residue definition for monitoring (RD-Mo) | Dimethomorph (sum of isomers) |
|-----------------------------------------------|-------------------------------|
| Plant residue definition for risk assessment (RD-RA) | Dimethomorph (sum of isomers) |

B.1.1.1. Stability of residues in plants

Not relevant for the current application.
B.1.2. Magnitude of residues in plants

B.1.2.1. Summary of residues data from the supervised residue trials

| Commodity | Region/ Indoor(\(^a\)) | Residue levels observed in the supervised residue trials (mg/kg) | Comments/Source | Calculated MRL (mg/kg) | HR(\(^b\)) (mg/kg) | STMR(\(^c\)) (mg/kg) | CF(\(^d\)) |
|-----------|-------------------------|---------------------------------------------------------------|-----------------|------------------------|------------------|---------------------|-----------|
| Raspberries | NEU                    | EFSA (2011a): – Germany (2018): 2 × < 0.01                  | Residue trials on raspberries compliant with the GAP Reduced data set acceptable. The two trials confirmed that residues are not expected when dimethomorph is applied according to the GAP, well before the consumable part of the crop is formed Extrapolation to blackberries possible | 0.01* | 0.01 | 0.01 | NA |

MRL: maximum residue level; GAP: Good Agricultural Practice.

*: Indicates that the MRL is proposed at the limit of quantification.

(a): NEU: Outdoor trials conducted in northern Europe, SEU: Outdoor trials conducted in southern Europe, Indoor: indoor EU trials or Country code: if non-EU trials.

(b): Highest residue. The highest residue for risk assessment refers to the whole commodity and not to the edible portion.

(c): Supervised trials median residue. The median residue for risk assessment refers to the whole commodity and not to the edible portion.

(d): Conversion factor to recalculate residues according to the residue definition for monitoring to the residue definition for risk assessment. NA, not applicable.
B.1.2.2. Residues in rotational crops
Not relevant.

B.1.2.3. Processing factors
Not relevant for the current application. No processing studies were required.

B.2. Residues in livestock
Not relevant.

B.3. Consumer risk assessment
Not relevant since the previous consumer risk assessment remains valid.

B.4. Recommended MRLs

| Code (a) | Commodity           | Existing EU MRL(b) (mg/kg) | Proposed EU MRL (mg/kg) | Comment/justification                                                                                                                                 |
|---------|---------------------|----------------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0153010 | Blackberries        | 0.05 (ft 1)                | 0.01*                   | The data gaps identified by EFSA concerning new residue trials have been addressed. For the uses on blackberries and raspberries assessed, it is appropriate to lower the MRL to the LOQ of 0.01 mg/kg. Before lowering the MRL, it should be clarified whether the current or a lower MRL needs to be maintained due to a more recent use authorised for a plant protection product containing dimethomorph on these crops leading to residues up to 0.05 mg/kg. The previous consumer risk assessment remains valid. |
| 0153030 | Raspberries (red and yellow) | 0.05 (ft 1)                | 0.01*                   |                                                                                                                                                        |

MRL: maximum residue level; LOQ: limit of quantification.
*: Indicates that the MRL is set at the limit of analytical quantification (LOQ).
(a): Commodity code number according to Annex I of Regulation (EC) No 396/2005.
(b): Existing EU MRL and corresponding footnote on confirmatory data.
ft 1: The European Food Safety Authority identified some information on residue trials as unavailable. When re-viewing the MRL, the Commission will take into account the information referred to in the first sentence, if it is submitted by 13 July 2015, or, if that information is not submitted by that date, the lack of it (footnote related to data gap No 1).
### Appendix C – Used compound codes

| Code/trivial name<sup>(a)</sup> | IUPAC name/SMILES notation/InChiKey<sup>(b)</sup> | Structural formula<sup>(c)</sup> |
|----------------------------------|-----------------------------------------------|----------------------------------|
| dimethomorph                     | (EZ)-4-[3-(4-chlorophenyl)-3-(3,4-dimethoxyphenyl) acryloyl]morpholine  
O=C(\c1ccc(Cl)cc1)c1ccc(OC)c(OC)c1)N1CCOC1  
QNBTYORWCCMPQP-UHFFFAOYSA-N | ![Structural formula](image) |

IUPAC: International Union of Pure and Applied Chemistry; SMILES: simplified molecular-input line-entry system; InChIKey: International Chemical Identifier Key.

<sup>(a)</sup> The metabolite name in bold is the name used in the conclusion.

<sup>(b)</sup> ACD/Name 2015 ACD/Labs 2015 Release (File version N20E41, Build 75170, 19 December 2014).

<sup>(c)</sup> ACD/ChemSketch 2015 ACD/Labs 2015 Release (File version C10H41, Build 75059, 17 December 2014).