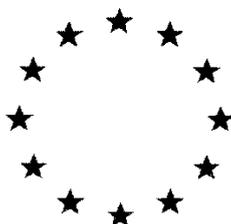


European Commission



**Renewal Assessment Report prepared according to the Commission
Regulation (EU) N° 1107/2009**

MECOPROP-P

List of Endpoints

Rapporteur Member State : United Kingdom

Co-Rapporteur Member State : Ireland

Version History

When	What
31/03/2016	Initial Renewal Assessment Report (RAR)

List of end points

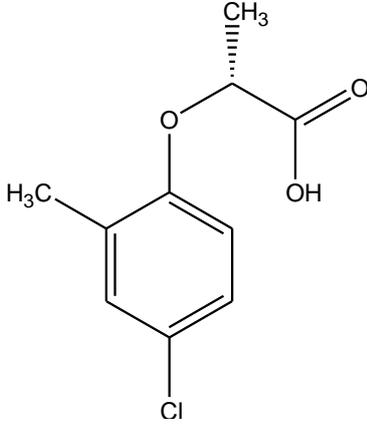
Rapporteur Member State	Month and year	Active Substance (Name)
UK	March 2016	Mecoprop-P

Section 1 Identity, Physical and Chemical Properties, Details of Uses, Further Information, Methods of Analysis

Identity, Physical and Chemical Properties, Details of Uses, Further Information (Regulation (EU) N° 283/2013, Annex Part A, points 1.3 and 3.2)

Active substance (ISO Common Name)	Mecoprop-P (Producer's development code number: G750)
Function (e.g. fungicide)	Herbicide
Rapporteur Member State	UK
Co-rapporteur Member State	IE

Identity (Regulation (EU) N° 283/2013, Annex Part A, point 1)

Chemical name (IUPAC)	(R)- 2-(4-chloro-2-methylphenoxy)propanoic acid
Chemical name (CA)	(R)(+)-2-(4-chloro-2-methylphenoxy)-propanoic acid
CIPAC No	475
CAS No	16484-77-8
EC No (EINECS or ELINCS)	240-539-0
FAO Specification (including year of publication)	None
Minimum purity of the active substance as manufactured	890 g/kg
Identity of relevant impurities (of toxicological, ecotoxicological and/or environmental concern) in the active substance as manufactured	None
Molecular formula	C ₁₀ H ₁₁ ClO ₃
Molar mass	214.65 g/mol
Structural formula	

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Rapporteur Member State	Month and year	Active Substance (Name)
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Section 1 Identity, Physical and Chemical Properties, Details of Uses, Further Information, Methods of Analysis

Physical and chemical properties (Regulation (EU) N° 283/2013, Annex Part A, point 2)

Melting point (state purity)	93.5 – 97.5°C (99.8%)
Boiling point (state purity)	Boiling point could not be determined. Decomposes above 240°C without boiling.
Temperature of decomposition (state purity)	240 °C (99.8%)
Appearance (state purity)	White solid at 20°C (99.8 %) Dark cream solid at 20°C (technical)
Vapour pressure (state temperature, state purity)	1.4×10^{-3} Pa at 25°C (99.8 %)
Henry's law constant	1.7×10^{-4} Pa.m ³ .mol ⁻¹
Solubility in water (state temperature, state purity and pH)	Measured at 20°C (99.8 %) pH 4 6.65 g/L pH 7 >250 g/L pH 10 >250 g/L Purified water (pH3) 880 mg/L
Solubility in organic solvents (state temperature, state purity)	Measured at 20°C (92.63 %) Acetone >250 g/L Dichloromethane >250 g/L Ethyl acetate >250 g/L Methanol >250 g/L Heptane 7.69 g/L Toluene >250 g/L
Surface tension (state concentration and temperature, state purity)	50.0 mN/m at 20 °C (90 % saturated solution) (99.8%)
Partition coefficient (state temperature, pH and purity)	log P _{OW} = 2.19 at 20°C (pH 4) (99.8%) log P _{OW} = -0.19 at 20°C (pH 7) (99.8%) log P _{OW} = -0.64 at 20°C (pH 10) (99.8%) <u>Calculated values of log₁₀P_{ow}</u> mecoprop-P = 2.94 HMCPP = 1.47 CCPP = 1.93 Data on metabolites HMCPP and CCPP should be provided, as these are included in the plant risk assessment residue definition. Only calculated values have been supplied and test data is required.
Dissociation constant (state purity)	pKa = 3.7(99.8%)

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Section 1 Identity, Physical and Chemical Properties, Details of Uses, Further Information, Methods of Analysis

UV/VIS absorption (max.) incl. ϵ
(state purity, pH)

Distilled water solution:
 λ_{\max} (nm) = 229 ϵ (L mol⁻¹ cm⁻¹) = 9530
 λ_{\max} (nm) = 280 ϵ (L mol⁻¹ cm⁻¹) = 1470
 λ_{\max} (nm) = 285 ϵ (L mol⁻¹ cm⁻¹) = 1290
 No UV adsorption maxima > 400 nm. (99.8%)

0.1M HCl solution:
 λ_{\max} (nm) = 227 ϵ (L mol⁻¹ cm⁻¹) = 8860
 λ_{\max} (nm) = 279 ϵ (L mol⁻¹ cm⁻¹) = 1340
 λ_{\max} (nm) = 284 ϵ (L mol⁻¹ cm⁻¹) = 1770
 No UV adsorption maxima > 400 nm. (99.8%)

0.1M NaOH solution:
 λ_{\max} (nm) = 229 ϵ (L mol⁻¹ cm⁻¹) = 9520
 λ_{\max} (nm) = 280 ϵ (L mol⁻¹ cm⁻¹) = 1560
 λ_{\max} (nm) = 286 ϵ (L mol⁻¹ cm⁻¹) = 1360
 No UV adsorption maxima > 400 nm. (99.8%)

Flammability (state purity)

Not flammable (91.5% technical)

Explosive properties (state purity)

Not explosive (91.5% technical)

Oxidising properties (state purity)

Not oxidising (91.5% technical)

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Rapporteur Member State

Month and year

Active Substance (Name)

UK	March 2016	Mecoprop-P
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Section 1 Identity, Physical and Chemical Properties, Details of Uses, Further Information, Methods of Analysis

Summary of representative uses evaluated, for which all risk assessments needed to be completed (*mecoprop-P*) (Regulation (EU) N° 284/2013, Annex Part A, points 3, 4)

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			PHI (days) (m)	Remarks
					Type (d-f)	Conc. a.s. (i)	method kind (f-h)	range of growth stages & season (j)	number min-max (k)	Interval between application (min)	kg a.s./hL min-max (l)	Water L/ha min-max	kg a.s./ha min-max (l)		
Winter and Spring Cereals - Wheat (including durum and spelt), Barley, Rye, Oats, Triticale	Various	Mecoprop-P K 600	F	Broadleaved weeds	SL	600 g/L	Tractor mounted boom spray	Up to and including BBCH 32	1	N/A	0.003 - 0.006	200 – 400 L	1.2	N/A	Applied from 01/03

<p>(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)</p> <p>(b) Outdoor or field use (F), greenhouse application (G) or indoor application (I)</p> <p>(c) e.g. biting and sucking insects, soil born insects, foliar fungi, weeds</p> <p>(d) e.g. wettable powder (WP), emulsifiable concentrate (EC), granule (GR)</p> <p>(e) CropLife International Technical Monograph no 2, 6th Edition. Revised May 2008. Catalogue of pesticide</p> <p>(f) All abbreviations used must be explained</p> <p>(g) Method, e.g. high volume spraying, low volume spraying, spreading, dusting, drench</p> <p>(h) Kind, e.g. overall, broadcast, aerial spraying, row, individual plant, between the plant- type of equipment used must be indicated</p>	<p>(i) g/kg or g/L. Normally the rate should be given for the active substance (according to ISO) and not for the variant in order to compare the rate for some active substances used in different variants (e.g. fluoroxypry). In certain cases, where only one variant is synthesised, it is more appropriate to give the rate for the variant (e.g. benthialdicarb-isopropyl).</p> <p>(j) 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</p> <p>(k) Indicate the minimum and maximum number of applications possible under practical conditions of use</p> <p>(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)</p> <p>(m) PHI - minimum pre-harvest interval</p>
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Rapporteur Member State	Month and year	Active Substance (Name)
UK	March 2016	Mecoprop-P

Section 1 Identity, Physical and Chemical Properties, Details of Uses, Further Information, Methods of Analysis

Summary of additional intended uses for which MRL applications have been made, that in addition to the uses above, have also been considered in the consumer risk assessment (name of active substance or the respective variant)
Regulation (EC) N° 1107/2009 Article 8.1(g)

Important note: efficacy, environmental risk and risk to humans by exposure other than via their diet have not been assessed for these uses

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			PHI (days) (m)	Remarks
					Type (d-f)	Conc. a.s. (i)	method kind (f-h)	range of growth stages & season (j)	number min-max (k)	Interval between application (min)	kg a.s./hL min-max (l)	Water L/ha min-max	kg a.s./ha min-max (l)		
MRL Application (according to Article 8.1(g) of Regulation (EC) No 1107/2009)															
None															

<p>(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)</p> <p>(b) Outdoor or field use (F), greenhouse application (G) or indoor application (I)</p> <p>(c) e.g. biting and sucking insects, soil born insects, foliar fungi, weeds</p> <p>(d) e.g. wettable powder (WP), emulsifiable concentrate (EC), granule (GR)</p> <p>(e) CropLife International Technical Monograph no 2, 6th Edition. Revised May 2008. Catalogue of pesticide</p> <p>(f) All abbreviations used must be explained</p> <p>(g) Method, e.g. high volume spraying, low volume spraying, spreading, dusting, drench</p> <p>(h) Kind, e.g. overall, broadcast, aerial spraying, row, individual plant, between the plant- type of equipment used must be indicated</p>	<p>(i) g/kg or g/L. Normally the rate should be given for the active substance (according to ISO) and not for the variant in order to compare the rate for same active substances used in different variants (e.g. fluoroxypr). In certain cases, where only one variant is synthesised, it is more appropriate to give the rate for the variant (e.g. benthialdicarb-isopropyl).</p> <p>(j) 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</p> <p>(k) Indicate the minimum and maximum number of applications possible under practical conditions of use</p> <p>(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)</p> <p>(m) PHI - minimum pre-harvest interval</p>
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Rapporteur Member State	Month and year	Active Substance (Name)
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Section 1 Identity, Physical/ Chemical Properties, Details of Uses, Further Information, Methods of Analysis

Further information, Efficacy

Effectiveness (Regulation (EU) N° 284/2013, Annex Part A, point 6.2)

Control of broad-leaved weeds.
Mecoprop-p, which is a hormone type herbicide, is absorbed mainly by the green parts of the plants, but with some absorption through the roots and is rapidly translocated within herbaceous plants.

It has been used in broad leaved weed control for many years with product registration in many EU Member States.

Details to be evaluated at product renewal.

Adverse effects on field crops (Regulation (EU) N° 284/2013, Annex Part A, point 6.4)

Mecoprop-P has been used in broad leaved weed control for many years with product registration in many EU Member States.

Details to be evaluated at product renewal.

Observations on other undesirable or unintended side-effects (Regulation (EU) N° 284/2013, Annex Part A, point 6.5)

Mecoprop-P has been used in broad leaved weed control for many years with product registration in many EU Member States.

Details to be evaluated at product renewal.

Groundwater metabolites: Screening for biological activity (SANCO/221/2000-rev.10-final Step 3 a Stage 1)

Activity against target organism

<i>Met1</i>	<i>Met2</i>	<i>Met3</i>	<i>Met4</i>	<i>Met5</i>	<i>Met6</i>
N/A	N/A	N/A	N/A	N/A	N/A

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Rapporteur Member State	Month and year	Active Substance (Name)
UK	March 2016	Mecoprop-P

Section 1 Identity, Physical/ Chemical Properties, Details of Uses, Further Information, Methods of Analysis

Methods of Analysis

Analytical methods for the active substance (Regulation (EU) N° 283/2013, Annex Part A, point 4.1 and Regulation (EU) N° 284/2013, Annex Part A, point 5.2)

Technical a.s. (analytical technique)	HPLC with UV detection
Impurities in technical a.s. (analytical technique)	HPLC with UV detection
Plant protection product (analytical technique)	HPLC with UV detection

Analytical methods for residues (Regulation (EU) N° 283/2013, Annex Part A, point 4.2 & point 7.4.2)

Residue definitions for monitoring purposes

Food of plant origin	Mecoprop-P
Food of animal origin	Mecoprop-P
Soil	Mecoprop-P
Sediment	Mecoprop-P
Water surface	Mecoprop-P
drinking/ground	Mecoprop-P
Air	Mecoprop-P
Body fluids and tissues	Not required (mecoprop-P is not classified as toxic or very toxic)

Monitoring/Enforcement methods

Food/feed of plant origin (analytical technique and LOQ for methods for monitoring purposes)	Single method LC-MS/MS (LOQ 0.01 mg/kg) Wheat grain and straw (dry), wheat foliage (high water), olives (high oil) and orange (high acid).
Food/feed of animal origin (analytical technique and LOQ for methods for monitoring purposes)	Single method LC-MS/MS (LOQ 0.01 mg/kg)
Soil (analytical technique and LOQ)	Single method LC-MS/MS (LOQ 0.01 mg/kg)
Water (analytical technique and LOQ)	Single method LC-MS/MS (LOQ 0.01µg/L)
Air (analytical technique and LOQ)	Single method LC-MS/MS (LOQ 0.05µg/tube)
Body fluids and tissues (analytical technique and LOQ)	Not required (mecoprop-P is not classified as toxic or very toxic)

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Rapporteur Member State	Month and year	Active Substance (Name)
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Section 1 Identity, Physical/ Chemical Properties, Details of Uses, Further Information, Methods of Analysis

Classification and labelling with regard to physical and chemical data (Regulation (EU) N° 283/2013, Annex Part A, point 10)

Substance

Mecoprop-P

Harmonised classification according to Regulation (EC) No 1272/2008 and its Adaptations to Technical Process [Table 3.1 of Annex VI of Regulation (EC) No 1272/2008 as amended]¹:

Not classified.

Peer review proposal ² for harmonised classification according to Regulation (EC) No 1272/2008:

Not classified.

¹ Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. OJ L 353, 31.12.2008, 1-1355.

² It should be noted that harmonised classification and labelling is formally proposed and decided in accordance with Regulation (EC) No 1272/2008. Proposals for classification made in the context of the evaluation procedure under Regulation (EC) No 1107/2009 are not formal proposals.

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Rapporteur Member State	Month and year	Active Substance (Name)
UK	March 2016	Mecoprop-P

Section 2 Mammalian Toxicology

Impact on Human and Animal Health

Absorption, distribution, metabolism and excretion (toxicokinetics) (Regulation (EU) N° 283/2013, Annex Part A, point 5.1)

Rate and extent of oral absorption/systemic bioavailability	In rats 90 to 100 % in males and 80 to 95% in females (based on urinary excretion within 168 h) (based on available data, single administration) 100% oral absorption assumed for AOEL
Toxicokinetics	Following single oral dose of 5 mg/kg bw: Cmax 27.8/31.5 µg equivalents/g T max 1.8/2.7 hr Plasma T _{1/2} 6.4/4.2 hr in males/females respectively
Distribution	Thyroid, kidney, blood and plasma were main organs of exposure.
Potential for bioaccumulation	Elimination from fat and skin slower than for other tissues but no clear evidence of accumulation.
Rate and extent of excretion	Rapid, > 95% (low dose) within 48 hours, mainly via urine (>90%)
Metabolism in animals	Limited, 66-83% excreted as parent. Main metabolic step hydroxylation.
<i>In vitro</i> metabolism	Mouse and rat considered more relevant to humans than the dog as the dog has reduced capacity for renal clearance of mecoprop.
Toxicologically relevant compounds (animals and plants)	Parent compound (state name; toxicity of individual metabolites not known)
Toxicologically relevant compounds (environment)	

Acute toxicity (Regulation (EU) N° 283/2013, Annex Part A, point 5.2)

Rat LD ₅₀ oral	431 mg/kg bw	H302
Rat LD ₅₀ dermal	> 2000 mg/kg bw	
Rat LC ₅₀ inhalation	> 2.13 mg/L air /4h (whole body exposure)	
Skin irritation	Non-irritant	
Eye irritation	Severely irritating	H318
Skin sensitisation	Not sensitising	
Phototoxicity	Not phototoxic	

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Rapporteur Member State	Month and year	Active Substance (Name)
UK	March 2016	Mecoprop-P

Section 2 Mammalian Toxicology

Short-term toxicity (Regulation (EU) N° 283/2013, Annex Part A, point 5.3)

Target organ / critical effect	Rat: kidney (increased weight, increased blood urea nitrogen) Dog: Haematological changes	H373 Kidneys
Relevant oral NOAEL	90-day, dog: 4 mg/kg bw per day 7 week rat: 4.4 mg/kg bw per day	
Relevant dermal NOAEL	90-day, rabbit: 1000 mg/kg bw per day	
Relevant inhalation NOAEL	No data - not required	

Genotoxicity (Regulation (EU) N° 283/2013, Annex Part A, point 5.4)

<i>In vitro</i> studies	Ames tests and mammalian cell gene mutation studies negative. Equivocal findings for clastogenicity in human lymphocytes.	
<i>In vivo</i> studies	Mouse micronucleus and Chinese hamster cytogenetic tests negative for clastogenicity	
Photomutagenicity	Mecoprop-P meets criteria for photomutagenicity but a study has not been conducted	
Potential for genotoxicity	Taking a weight of evidence approach mecoprop-P is unlikely to be genotoxic	

Long-term toxicity and carcinogenicity (Regulation (EU) N°283/2013, Annex Part A, point 5.5)

Long-term effects (target organ/critical effect)	Rat & mouse: Kidney (increase weight, chronic nephropathy. Liver (increased weight, enzyme induction)	
Relevant long-term NOAEL	2-year, rat: 3 mg/kg bw per day 18-month, mouse: 10 mg/kg bw per day	
Carcinogenicity (target organ, tumour type)	Rat: benign lipoma in males Mouse: increased hepatic adenoma in females Limited evidence of a carcinogenic effect	Cat 2 H351
Relevant NOAEL for carcinogenicity	2-year, rat: 1.1mg/kg bw per day; 18-month, mouse: 4 mg/kg bw per day	

Reproductive toxicity (Regulation (EU) N° 283/2013, Annex Part A, point 5.6)

Reproduction toxicity

Reproduction target / critical effect	Parental toxicity: 50% reduction in bw gain in females on days 0-7 during gestation,	
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Section 2 Mammalian Toxicology

	increased relative kidney weight Reproductive toxicity: 21% reduction in implantation sites Offspring's toxicity: increased pup mortality days 0 to 4 post-partum. Up to 11% reduction in body weight	
Relevant parental NOAEL	8.0 mg/kg bw per day	
Relevant reproductive NOAEL	8.0 mg/kg bw per day	
Relevant offspring NOAEL	8.0 mg/kg bw per day	

Developmental toxicity

Developmental target / critical effect	Rat: Maternal toxicity: 22% ↓ food consumption, 18% ↓ bodyweight gain Developmental toxicity 2% ↓ foetal weight, four fold ↑ rudimentary cervical ribs, four fold ↑ sternebrae not ossified Rabbit: Maternal toxicity: no adverse findings Developmental toxicity: ↑ late resorptions	
Relevant maternal NOAEL	Rat: 50 mg/kg bw per day Rabbit: >50 mg/kg bw per day	
Relevant developmental NOAEL	Rat: 50 mg/kg bw per day Rabbit: 20 mg/kg bw per day	

Neurotoxicity (Regulation (EU) N° 283/2013, Annex Part A, point 5.7)

Acute neurotoxicity	No evidence of neurotoxicity up to maximum dose of 700 mg/kg bw	
Repeated neurotoxicity	Study not required	
Additional studies (e.g. delayed neurotoxicity, developmental neurotoxicity)	Study not required	

Other toxicological studies (Regulation (EU) N° 283/2013, Annex Part A, point 5.8)

Supplementary studies on the active substance	Evidence of liver enzyme induction in the mouse. Immunotoxicity studies in rats suggested indirect effects related to a stress-induced release of steroid hormones from adrenals.	
Endocrine disrupting properties	No studies available	
Studies performed on metabolites or impurities	Hydroxymethyl-mecoprop-P (HMCPP) LD50 concluded to be > 2150 mg/kg bw.	

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Rapporteur Member State	Month and year	Active Substance (Name)
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Section 2 Mammalian Toxicology

Medical data (Regulation (EU) N° 283/2013, Annex Part A, point 5.9)

Cases of acute poisoning have been reported. Available epidemiological data are inadequate for determining an association between exposure and cancer in humans.

Summary³ (Regulation (EU) N°1107/2009, Annex II, point 3.1 and 3.6)

	Value (mg/kg bw (per day))	Study	Uncertainty factor
Acceptable Daily Intake (ADI)	0.01	rat, 2-year	100
Acute Reference Dose (ARfD)	0.5	rat, developmental	100
Acceptable Operator Exposure Level (AOEL)	0.04	dog, 90-day	100*
Acute Acceptable Operator Exposure Level (AAOEL)		Not required	

* No correction required for oral absorption

Dermal absorption (Regulation (EU) N° 284/2013, Annex Part A, point 7.3)

Representative formulation: Mecoprop-P K 600 g/L (CA3015).

Concentrate: 1 % (600g/L)
 Spray dilution 10% for 3g/L active substance, 5% for 6g/L active substance.
 Based on *in vitro* study in human skin on a 600g/L formulation that was sufficiently similar to the representative product to allow read-across with adjustment to account for differences in the spray dilution concentration.

Exposure scenarios (Regulation (EU) N° 284/2013, Annex Part A, point 7.2)

Operators

Use: cereals, tractor mounted /trailed field crop sprayer, application rate 1.2 kg a.s./ha
Exposure estimates (model): % of AOEL
UK POEM⁴
 Gloves during mixing/loading and application: 102%
German model⁵
 Gloves during mixing/loading, and gloves, coveralls and sturdy footwear during application: 14%

³ If available include also reference values for metabolites

⁴ Estimation of Exposure and Absorption of Pesticides by Spray Operators, Scientific subcommittee on Pesticides and British Agrochemical association Joint Medical Panel Report (UK MAFF), 1986 and the Predictive Operator Exposure Model (POEM) V 1.0, (UK MAFF), 1992, 2007 version. ("UK POEM").

⁵ Uniform Principles for Safeguarding the Health of Applicators of Plant Protection Products (Uniform Principles for Operator Protection), Mitteilungen aus der Biologischen Bundesanstalt für Land-und Forstwirtschaft, Berlin-Dahlem, Heft 277, 1992. ('German Model').

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Rapporteur Member State	Month and year	Active Substance (Name)
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Section 2 Mammalian Toxicology

Workers	<p><u>Activity:</u> Crop inspection</p> <p><u>Exposure estimates (model):</u> % of AOEL</p> <p><u>Europoem II worker re-entry model⁶</u></p> <p>Without PPE: 75%</p>
Bystanders and residents	<p><u>Modelling Approach: UK</u> % of AOEL</p> <ul style="list-style-type: none"> • Bystander and resident exposure to vapour (surrogate value derived from Californian Environmental Protection Agency studies ⁷) 10% adult 21% child • Bystander and resident exposure to spray drift (measurements of simulated bystander exposure for field crop sprayers in a UK study⁸) 3% • Bystander and resident exposure to fallout (children model⁹) 2%

Classification with regard to toxicological data (Regulation (EU) N° 283/2013, Annex Part A, Section 10)

Substance :	Mecoprop-P
Harmonised classification according to Regulation (EC) No 1272/2008 and its Adaptations to Technical Process [Table 3.1 of Annex VI of Regulation (EC) No 1272/2008 as amended] ¹⁰ :	<p>H302 Harmful if swallowed</p> <p>H318 Causes serious eye damage</p>
Peer review proposal ¹¹ for harmonised classification according to Regulation (EC) No 1272/2008:	No change proposed to existing Harmonised classification

⁶ van Hemmen et al (2002). Post-application exposure of workers to pesticides in agriculture. Report of the re-entry working group, EUROPOEM II project: FAIR3-CT96-1406

⁷ California Environmental Protection Agency, Air Resources Board (1998). Report for the application and ambient air monitoring for chlorpyrifos (and the oxon analogue) in Tulare County during spring/summer 1996.

⁸ Lloyd G.A. and Bell G.J. (1983). Hydraulic nozzles: comparative spray drift study (MAFF/ADAS).

⁹ Series 875, Occupational and Residential Exposure Test Guidelines: Group B – Postapplication Exposure Monitoring Test Guidelines (v 5.4, February 1998). USA EPA, Science Advisory Council for Exposure Policy 12, (February 2001): Recommended Revisions to the Standard Operating Procedures (SOPs) for Residential Exposure Assessment, USA EPA and Overview of Issues Related to the Standard Operating Procedures for Residential Exposure Assessment (August 1999 Presentation to the FIFRA Scientific Appraisal Panel), US EPA.

Rautmann, D., Strelke, M. and Winkler, R. (2001). New basic drift values in the authorisation procedure for plant protection Products. In Forster, R. and Strelke, M. Workshop on risk assessment and risk mitigation measures in the context of the authorisation of plant protection Products (WORMM). Mitt. Biol. Bundesanst. Land-Forstwirtschaft. Berlin-Dahlem, Heft 381

¹⁰ Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. OJ L 353, 31.12.2008, 1-1355.

¹¹ It should be noted that harmonised classification and labelling is formally proposed and decided in accordance with Regulation (EC) No 1272/2008. Proposals for classification made in the context of the evaluation procedure under Regulation (EC) No 1107/2009 are not formal proposals.

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Section 3 Residues

Residues in or on treated products food and feed

Metabolism in plants (Regulation (EU) N° 283/2013, Annex Part A, points 6.2.1, 6.5.1, 6.6.1 and 6.7.1)

Primary crops (Plant groups covered) OECD Guideline 501	Crop groups	Crop(s)	Application(s)	DAT (days)
	Fruit crops	N/A		
	Root crops	N/A		
	Leafy crops	N/A		
	Cereals/grass crops	Wheat	1.41 kg as/ha at BBCH 32 (post emergence) ¹	Foliage: 28 Straw: 103 Grain: 103
	Pulses/Oilseeds	N/A		
	Miscellaneous	N/A		
¹ Treated with a 1:15 mixture of ¹⁴ C-mecoprop-P (labelled on the aromatic ring, ≥98.5% pure) and cold mecoprop-P (99.9% pure).				
Rotational crops (metabolic pattern) OECD Guideline 502	Crop groups	Crop(s)	PBI (days)	Comments
	Root/tuber crops			
	Leafy crops			
	Cereal (small grain)			
	Other			
Rotational crop and primary crop metabolism similar?	No data required. Mecoprop-P is not persistent in soil (DT ₅₀ 10.12 days).			
Processed commodities (standard hydrolysis study) OECD Guideline 507	Conditions			
	20 min, 90°C, pH 4			
	60 min, 100°C, pH 5			
	20 min, 120°C, pH 6			
Residue pattern in processed commodities similar to residue pattern in raw commodities?	Considering the likely residues of mecoprop-P in cereal grain, it can be concluded that residues are likely to be <0.01 mg/kg and no further information on the nature of mecoprop-P residues during processing is required.			
Plant residue definition for monitoring (RD-Mo) OECD Guidance, series on pesticides No 31	Mecoprop-P			

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Section 3 Residues

Plant residue definition for risk assessment (RD-RA)

Mecoprop-P, 2-carboxy-4-chloro-phenoxypropionic acid (CCPP) and 2-hydroxymethyl-4-chloro-phenoxypropionic acid (HMCPP), expressed as mecoprop-P.

Conversion factor (monitoring to risk assessment)

Tentative conversion factors based on metabolism data were derived: 4 (cereal grain) and 2.2 (cereal straw)

Metabolism in livestock (Regulation (EU) N° 283/2013, Annex Part A, points 6.2.2, 6.2.3, 6.2.4, 6.2.5 6.7.1)

OECD Guideline 503 and SANCO/11187/2013 rev. 3 (fish)	Animal	Dose (mg/kg bw/d)	Duration (days)	N rate/comment
Animals covered	Laying hen	N/A		
	Goat	0.13 mecoprop-P 1.27 mecoprop-P	7 7	13 (dairy), 10 (beef) 127 (dairy), 98 (beef)
	Pig	N/A		
	Fish	N/A		
	¹ N rates calculated with respect to the SEU maximum dietary burden as these are worst-case intakes.			
Time needed to reach a plateau concentration in milk and eggs (days)	2 days			
Animal residue definition for monitoring (RD-Mo) OECD Guidance, series on pesticides No 31	Mecoprop-P			
Animal residue definition for risk assessment (RD-RA)	Mecoprop-P			
Conversion factor (monitoring to risk assessment)	Not applicable			
Metabolism in rat and ruminant similar (Yes/No)	Yes			
Fat soluble residues (Yes/No) (FAO, 2009)	No			

Residues in succeeding crops (Regulation (EU) N° 283/2013, Annex Part A, point 6.6.2)

Confined rotational crop study (Quantitative aspect) OECD Guideline 502	No data required.
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Section 3 Residues

Field rotational crop study

[OECD Guideline 504](#)

No data required.

Stability of residues (Regulation (EU) N° 283/2013, Annex Part A, point 6.1)

[OECD Guideline 506](#)

Plant products (Category)	Commodity	T (°C)	Stability (Month/Year)			
High water content	wheat foliage	< -18	12	High water content	wheat foliage	< -18
High oil content	N/A			High oil content	N/A	
High protein content	N/A			High protein content	N/A	
High starch content	wheat grain	< -18	12	High starch content	wheat grain	< -18
High acid content	N/A			High acid content	N/A	
This storage period accommodates the storage of the specimens in the residue trials.						
No data on the stability of residues of HMCPP and CCPP was provided.						
Animal	Animal commodity	T (°C)	Stability (Month/Year)			
Cattle	Muscle	≤ -18	9	9	9	3
	Fat	≤ -18	9	9	9	< 3
	Liver	≤ -18	9	9	9	< 3
	Kidney	≤ -18	9	9	9	< 3
	Milk	≤ -18	9	9	9	9
Cattle	Muscle	≤ -18	9	9	9	3
¹ Low post-storage recoveries of PCOC in muscle, liver, kidney and fat after 3 and 9 months of frozen storage indicate that residues of PCOC do degrade on storage. Recovery in muscle at 3 months was acceptable (not more than a 30% difference in recovery), thus the main concern is PCOC residue in fat, liver and kidney which would appear to be stable for less than 3 months. This is not of concern as levels of PCOC are controlled as part of the manufacture of the technical active substance and as PCOC is not formed as a result of metabolism in animals the levels expected in the animal samples would be very low, well below the level of toxicological relevance.						

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Section 3 Residues

Summary of residues data from the supervised residue trials (Regulation (EU) N° 283/2013, Annex Part A, point 6.3) [OECD Guideline 509](#), [OECD Guidance, series on pesticides No 66 and OECD MRL calculator](#)

Crop	Region/ Indoor (a)	Residue levels (mg/kg) observed in the supervised residue trials relevant to the supported GAPs (Monitoring RD)	Residue levels (mg/kg) observed in the supervised residue trials relevant to the supported GAPs (Risk assessment RD)	Recommendations/comments (OECD calculations)	MRL proposals (mg/kg)	HR (mg/kg) (c)	STMR (mg/kg) (d)
Representative uses							
Wheat grain	SEU Outdoor	8 x < 0.05*	8 x 0.2	Combines trials on wheat (5) and barley (3), as application is early on in growing season therefore extrapolation acceptable. NEU and SEU trials are also combined for straw as data were confirmed to arise from the same population, according to the Mann-Whitney U test.	0.05*	0.2	0.2
Wheat grain	NEU Outdoor	4 x 0.01*	4 x 0.04		0.01*	0.04	0.04
Wheat straw	NEU + SEU Outdoor	< 0.01*, 2 x < 0.05*, 0.06, 0.07, 0.10, 0.11, 0.20, 0.27, 0.28, 0.29, 0.32	0.022, 2 x 0.11, 0.132, 0.154, 0.22, 0.242, 0.44, 0.594, 0.616, 0.638, 0.704		N/A	0.704	0.231
MRL application							
N/A							
Summary of the data on formulation equivalence OECD Guideline 509							
Crop	Region	Residue data (mg/kg)		Recommendations/comments			
N/A							
Summary of data on residues in pollen and bee products (Regulation (EU) No 283/2013, Annex Part A, point 6.10.1) Not a current EU requirement as there is not an agreed established guidance document.							

(a): NEU or SEU for northern or southern outdoor trials in EU member states (N+SEU if both zones), Indoor for glasshouse/protected crops, Country if non-EU location.

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Section 3 Residues

- (b): Residue levels in trials conducted according to GAP reported in ascending order (*e.g.* 3x <0.01, 0.01, 6x 0.02, 0.04, 0.08, 3x 0.10, 2x 0.15, 0.17). When residue definition for monitoring and risk assessment differs, use **Mo/RA** to differentiate data expressed according to the residue definition for **Monitoring and Risk Assessment**.
- (c): **HR**: Highest residue. When residue definition for monitoring and risk assessment differs, HR according to residue definition for monitoring reported in brackets (HR_{Mo}).
- (d): **STMR**: Supervised Trials Median Residue. When residue definition for monitoring and risk assessment differs, STMR according to definition for monitoring reported in brackets (STMR_{Mo}).

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Section 3 Residues

Inputs for animal burden calculations¹

Feed commodity	Median dietary burden		Maximum dietary burden	
	(mg/kg)	Comment	(mg/kg)	Comment
Representative uses				
Cereal (wheat, barley, oats, rye and triticale) grain	SEU: 0.2 NEU: 0.04		SEU: 0.2 NEU: 0.04	STMR used for grain
Cereal (wheat, barley, oats, rye and triticale) straw	0.231	Same value for both NEU and SEU	0.704	Same value for both NEU and SEU
MRL application				
N/A				

¹Including tentative conversion factors of 4 (grain) and 2.2 (straw).

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Section 3 Residues

Residues from livestock feeding studies (Regulation (EU) N° 283/2013, Annex Part A, points 6.4.1, 6.4.2, 6.4.3 and 6.4.4)

Animal dietary burden calculation have been performed in line with OECD 73

Dietary burden of mecoprop-P by domestic animals in SEU

Animals	Median burden (mg/kg bw)	Maximum burden (mg/kg bw)	Above 0.004 mg /kg bw	Maximum burden (mg/kg DM)	Highest contributing commodities	
Dairy cattle	0.006	0.010	Yes	0.40	Barley	straw
Beef cattle	0.006	0.013	Yes	0.33	Barley	straw
Ram/Ewe	0.008	0.019	Yes	0.57	Barley	straw
Lamb	0.010	0.024	Yes	0.57	Barley	straw
Pig (breeding)	0.004	0.004	Yes	0.18	Barley	grain
Pig (finishing)	0.005	0.005	Yes	0.18	Barley	grain
Poultry broiler	0.011	0.011	Yes	0.16	Barley	grain
Poultry layer	0.016	0.019	Yes	0.28	Wheat	straw
Turkey	0.010	0.010	Yes	0.14	Rye	grain

Dietary burden of mecoprop-P by domestic animals in NEU

Animals	Median burden (mg/kg bw)	Maximum burden (mg/kg bw)	Above 0.004 mg /kg bw	Maximum burden (mg/kg DM)	Highest contributing commodities	
Dairy cattle	0.003	0.006	Yes	0.27	Barley	straw
Beef cattle	0.004	0.010	Yes	0.26	Barley	straw
Ram/Ewe	0.006	0.016	Yes	0.49	Barley	straw
Lamb	0.007	0.021	Yes	0.49	Barley	straw
Pig (breeding)	0.001	0.001	No	0.04	Barley	grain
Pig (finishing)	0.001	0.001	No	0.04	Barley	grain
Poultry broiler	0.002	0.002	No	0.03	Barley	grain
Poultry layer	0.005	0.008	Yes	0.12	Wheat	straw
Turkey	0.002	0.002	No	0.03	Rye	grain

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Section 3 Residues

In both NEU and SEU, animal intakes for dairy and beef cattle are above the trigger of 0.004 mg/kg bw/day. In SEU pig and chicken intakes are also triggered. The exceedance of the trigger in the SEU calculation is by an insignificant amount (0.001 and 0.0015 mg/kg bw/day for pig and poultry layer respectively) and the inputs for the dietary burden are significantly worst case. They have incorporated worst-case conversion factors for the metabolites and in SEU these conversion factors have been applied to an LOQ of 0.05 mg/kg. This LOQ in itself represents a worst-case, as residue levels are realistically expected to be well below the LOQ, even < 0.01 mg/kg. Hence it can confidently be concluded that pig and chicken dietary burdens could be expected to be much lower than those shown in SEU DB, their intakes will not realistically be of concern and therefore no further consideration will be required.

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Section 3 Residues

Conversion Factors (CF) for monitoring to risk assessment

Animal products

Not relevant. RD-Mo = RD-RA

Plant products

Using the metabolism study tentative conversion factors have been calculated for cereal grain (4) and cereal straw (2.2) for use in the risk assessment. These are not calculated from residue trials data so should not be regarded as formal conversion factors, but as a method for estimating the worst case for use in the risk assessment.

Processing factors (Regulation (EU) N° 283/2013, Annex Part A, points 6.5.2 and 6.5.3)

No data required.

Consumer risk assessment (Regulation (EU) N° 283/2013, Annex Part A, point 6.9)

Including all uses (representative uses and uses related to an MRL application).

ADI

TMDI according to EFSA PRIMo

NTMDI, according to (to be specified)

IEDI (% ADI), according to EFSA PRIMo

NEDI (% ADI), according to (to be specified)

Factors included in the calculations

0.01 mg/kg bw per day

Not applicable; see representative uses below

N/A

ARfD

UESTI (% ARfD), according to EFSA PRIMo

NESTI (% ARfD), according to (to be specified)

Factors included in IESTI and NESTI

0.5 mg/kg bw

Not applicable; see representative uses below

Not applicable; see representative uses below

N/A

Consumer risk assessment limited to the representative uses

TMDI (% ADI), according to EFSA PRIMo

NTMDI (% ADI), according to UK

IEDI (% ADI), according to EFSA PRIMo

NEDI (% ADI), according to UK

Factors included in the calculations

Highest TMDI: 22.4 % ADI (NL, child)

Highest NTMDI: 46 % ADI (UK infant, UK chronic consumer version 1.1)

Highest IEDI: 22.4 % ADI (NL, child)

Highest NEDI: 46 % ADI (UK infant, UK chronic consumer version 1.1)

N/A

UESTI (% ARfD, according to EFSA PRIMo)

NESTI (% ARfD, according to UK)

Factors included in IESTI and NESTI

Highest IESTI: 1.0 % ARfD (Milk)

Highest NESTI: 1.0 % ARfD (Milk)

N/A

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Section 3 Residues

Proposed MRLs (Regulation (EU) No 283/2013, Annex Part A, points 6.7.2 and 6.7.3)

Code ^(a)	Commodity/Group	MRL/Import tolerance ^(b) (mg/kg) and Comments	
Plant commodities (RD-Mo = Mecoprop-P)			
Representative uses			
0500090	Wheat (including triticale)	0.05*	Current MRL accommodates requested use.
0500010	Barley	0.05*	Current MRL accommodates requested use.
0500050	Oat	0.05*	Current MRL accommodates requested use.
0500070	Rye	0.05*	Current MRL accommodates requested use.
Animal commodities (RD-Mo = Mecoprop-P)			
1012000	Bovine (all commodities)	0.01	Default MRL proposed
1013000	Sheep (all commodities)	0.01	Default MRL proposed
1014000	Goat (all commodities)	0.01	Default MRL proposed
1020000	Milk (cattle, sheep, goat)	0.01	Default MRL proposed

(a): Commodity code number, as listed in Annex I of Regulation (EC) No 396/2005

(b): MRLs proposed at the LOQ, should be annotated by an asterisk (*) after the figure.

These are the proposed MRLs based on a residue definition (monitoring) of mecoprop-P. It should be noted that a formal change in MRL is not considered appropriate until the data gap for further residue trials is addressed. These MRLs should be taken forward as part of the confirmatory data assessment.

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Section 4 Environmental fate and behaviour

Environmental fate and behaviour

Route of degradation (aerobic) in soil (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.1.1)

Mineralisation after 100 days	39.7 % after 191 d, [¹⁴ C-phenyl]-label (n ¹² = 1) 42-51 % after 100 d, [¹⁴ C-phenyl]-label (n = 3)
Non-extractable residues after 100 days	44.4 % after 191 d, [¹⁴ C-phenyl]-label (n= 1) 43-51 % after 100 d, [¹⁴ C-phenyl]-label (n= 3)
Metabolites requiring further consideration - name and/or code, % of applied (range and maximum)	No metabolites that require further consideration

Route of degradation (anaerobic) in soil (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.1.2)

Mineralisation after 100 days	<i>No data – not required</i>
Non-extractable residues after 100 days	<i>No data – not required</i>
Metabolites that may require further consideration for risk assessment - name and/or code, % of applied (range and maximum)	<i>No data – not required</i>

Route of degradation (photolysis) on soil (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.1.3)

Metabolites that may require further consideration for risk assessment - name and/or code, % of applied (range and maximum)	<i>No metabolites that require further consideration</i>
Mineralisation at study end	3 % after 30 d, [¹⁴ C-phenyl]-label (n= 1)
Non-extractable residues at study end	15 % after 30 d, [¹⁴ C-phenyl]-label (n= 1)

¹² n corresponds to the number of soils.

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Section 4 Environmental fate and behaviour

Rate of degradation in soil (aerobic) laboratory studies active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.1.1 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.1)

Parent	Dark aerobic conditions (modelling)					
Soil type	pH ^{a)}	t. °C / % FMC (1/3 bar)	DT ₅₀ /DT ₉₀ (d)	DT ₅₀ (d) 20 °C pF2/10kPa ^{b)}	St. (χ ²)	Method of calculation
Soil type	pH ^{a)}	t. °C / % FMC (1/3 bar)	DT ₅₀ /DT ₉₀ (d)	DT ₅₀ (d) 20 °C pF2/10kPa ^{b)}	St. (χ ²)	Method of calculation
Sandy Loam (Timmerman)	7.4	20 / 75	7.67 / 25.5	4.7	8.52	SFO
Sand (Speyer 2.1)	6.9	20 / 75	7.0 / 23.1	4.0	10.5	SFO
Loamy Sand (Speyer 2.2)	6.0	20 / 75	10.12* / 33.6	8.2	4.9	FOMC *DT ₉₀ /3.32
Geometric mean (if not pH dependent)				5.24		
pH dependence,				No		

^{a)} Solution measured in is not reported

^{b)} Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7

Rate of degradation in soil (aerobic) laboratory studies transformation products (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.1.2 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.1)

Not required / no aerobic soil transformation products to consider

Met 1	Dark aerobic conditions Metabolite dosed or the precursor from which the f.f. was derived was <i>xxx</i>							
Soil type	X ⁷	pH ^{a)}	t. °C / % MWHC	DT ₅₀ / DT ₉₀ (d)	f. f. k _f /k _{dp}	DT ₅₀ (d) 20 °C pF2/10kPa ^{b)}	St. (χ ²)	Method of calculation
Geometric mean (if not pH dependent)								
Arithmetic mean								
pH dependence, <i>Yes or No</i>								

^{a)} Measured in [medium to be stated, usually calcium chloride solution or water]

^{b)} Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7

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Section 4 Environmental fate and behaviour

Rate of degradation field soil dissipation studies (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.2.1 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.2.1)

No field dissipation data available

Parent	Aerobic conditions								
Soil type (indicate if bare or cropped soil was used).	Location (country or USA state).	X ¹³	pH ^{a)}	Depth (cm)	DT ₅₀ (d) actual	DT ₉₀ (d) actual	St. (χ ²)	DT ₅₀ (d) Norm ^{b)} .	Method of calculation
Geometric mean (if not pH dependent)									
pH dependence, <i>Yes or No</i>									

^{a)} Measured in [medium to be stated, usually calcium chloride solution or water]

^{b)} Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7, values are DegT50matrix

Met 1	Aerobic conditions Metabolite dosed or the precursor from which the f.f. was derived was <i>xxx</i>									
Soil type	Location	X ^δ	pH ^{a)}	Depth (cm)	DT ₅₀ (d) actual	DT ₉₀ (d) actual	St. (χ ²)	DT ₅₀ (d) Norm ^{b)} .	f. f. k _f / k _{dp}	Method of calculation
Geometric mean (if not pH dependent)										
Arithmetic mean										
pH dependence, Yes or No										

^{a)} Measured in [medium to be stated, usually calcium chloride solution or water]

^{b)} Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7 values are DegT50matrix

¹³ X This column is reserved for any other property that is considered to have a particular impact on the degradation rate. Column and this footnote may be removed if not used.

List of end points

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Section 4 Environmental fate and behaviour

Combined laboratory and field kinetic endpoints for modelling (when not from different populations)

Not required / no field data available

Rate of degradation in soil active substance, normalised geometric mean (if not pH dependent)	(d)	
Rate of degradation in soil transformation products, normalised geometric mean (if not pH dependent)	<i>Met I</i> <i>?? (d)</i>	Met II <i>?? (d)</i>
Kinetic formation fraction (f. f. k_f / k_{dp}) of transformation products, arithmetic mean	Met I from <i>??define precursor</i>	Met 2 from <i>??define precursor</i>

Soil accumulation (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.2.2 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.2.2)

Soil accumulation and plateau concentration

Not calculated as soil $DT_{90} < 365$ days

Rate of degradation in soil (anaerobic) laboratory studies active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.1.3 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.1)

Not required / no anaerobic soil studies available

Parent	Dark anaerobic conditions						
	X^{14}	pH ^{a)}	t. °C / % MWHC	DT_{50} / DT_{90} (d)	DT_{50} (d) 20 °C ^{b)}	St. (χ^2)	Method of calculation
Geometric mean (if not pH dependent)							

^{a)} Measured in [medium to be stated, usually calcium chloride solution or water]

^{b)} Normalised using a Q10 of 2.58

¹⁴ X This column is reserved for any other property that is considered to have a particular impact on the degradation rate. Column and this footnote may be removed if not used.

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Rate of degradation in soil (anaerobic) laboratory studies transformation products (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.1.4 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.1)

Not required / no anaerobic soil studies available

Met 1	Dark anaerobic conditions Metabolite dosed or the precursor from which the f.f. was derived was <i>xxx</i> .							
Soil type	X^{t0}	pH ^{a)}	t. °C / % MWHC	DT ₅₀ / DT ₉₀ (d)	f. f. k _f / k _{dp}	DT ₅₀ (d) 20°C ^{b)}	St. (χ^2)	Method of calculation
Geometric mean (if not pH dependent)								
Arithmetic mean								

^{a)} Measured in [medium to be stated, usually calcium chloride solution or water]
^{b)} Normalised using a Q10 of 2.58

Rate of degradation on soil (photolysis) laboratory active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.1.3)

Parent	Soil photolysis				
Soil type	pH ^{a)}	t. °C / % FMC (1/3bar)	DT ₅₀ / DT ₉₀ (d) calculated at 42°N	St. (χ^2)	Method of calculation
Sandy Loam	7.4	25 / 75	20.7 / 68.6	3.96	SFO

^{a)} Solution measured in is not reported

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Soil adsorption active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.3.1.1 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.2.1)

Parent							
Soil Type	OC %	Soil pH ^{a)}	K _d (mL/g)	K _{doc} (mL/g)	K _F (mL/g)	K _{Foc} (mL/g)	1/n
Sandy (Zeist)	4.5	5.2*	-	-	4.5	139	0.66
Sandy (De Krakeling)	3.5	5.3*	-	-	3.5	167	0.69
Sandy (Maarn)	3.3	5.2*	-	-	3.3	135	0.75
Sandy Loam (Fox)	1.3	7.6**	-	-	0.30	22	0.94
Silty Clay Loam (Hagerstown)	1.5	6.6**	-	-	0.43	30	1.01
Silt Loam (Plano)	3.4	6.8**	-	-	0.69	20	0.96
Sandy Loam (Calke)	3.1	5.8	-	-	0.56	18	0.85
Clay Loam (South Witham)	3.7	7.3	-	-	0.46	12	0.89
Sandy Clay Loam (Lockington)	3.1	5.7	-	-	0.64	21	0.85
Loamy Sand (Hagen)	2.9	5.7	-	-	0.98	34	0.93
Geometric mean			pH <5.5 (n = 3)		3.7	146	
			pH >5.5 (n = 7)		0.54	21	
Arithmetic mean			pH <5.5 (n = 3)				0.70
			pH >5.5 (n = 7)				0.92
pH dependence			Yes				

^{a)} Measured in water

* Calculated from $\text{pH}(\text{H}_2\text{O}) = 0.820\text{pH}(\text{KCl}) + 1.69$

** Solution not reported in study, assumed to be H₂O

Soil adsorption transformation products (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.3.1.2 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.2.1)

Not required / no transformation products to consider

Metabolite 1							
Soil Type	OC %	Soil pH ^{a)}	K _d (mL/g)	K _{doc} (mL/g)	K _F (mL/g)	K _{Foc} (mL/g)	1/n
Geometric mean (if not pH dependent)							
Arithmetic mean (if not pH dependent)							

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Section 4 Environmental fate and behaviour

pH dependence, <i>Yes or No</i>	
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^{a)} Measured in [medium to be stated, usually calcium chloride solution or water]

Mobility in soil column leaching active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.4.1.1 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.2.1)

Not required / no data available

Column leaching	Elution (mm): <i>x</i> mm Time period (d): <i>x</i> d
	Leachate: <i>x</i> % total residues/radioactivity in leachate <i>x</i> % active substance, <i>x</i> % <i>Met I</i> ,... <i>x</i> % <i>Met VII</i> > <i>x</i> % total residues/radioactivity retained in top <i>x</i> cm Koc (mL/g) = <i>(When it has not been possible to determine it by batch sorption experiments)</i> .

Mobility in soil column leaching transformation products (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.4.1.2 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.2.1)

Not required / no data available

Column leaching	Elution (mm): <i>x</i> mm Time period (d): <i>x</i> d
	Leachate: <i>x</i> % total residues/radioactivity in leachate <i>x</i> % active substance, <i>x</i> % <i>Met I</i> ,... <i>x</i> % <i>Met VII</i> > <i>x</i> % total residues/radioactivity retained in top <i>x</i> cm Koc (mL/g) = <i>(When it has not been possible to determine it by batch sorption experiments)</i> .

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Lysimeter / field leaching studies (Regulation (EU) N° 283/2013, Annex Part A, points 7.1.4.2 / 7.1.4.3 and Regulation (EU) N° 284/2013, Annex Part A, points 9.1.2.2 / 9.1.2.3)

Lysimeter/ field leaching studies

Location: Fraunhofer, Germany
Study type (e.g. lysimeter, field): *lysimeter*
Soil properties: sandy loam, 0-30cm depth - pH = 5.7, OC = 1.5, FMC = 20-30%
Dates of application : 18th May 1989
Crop : summer wheat (seeded April 1989), winter wheat (seeded September 1989), winter rape (seeded September 1990)
Interception estimated: 0% (applied to bare soil)
Number of applications: 1 years, 1 applications per year
Duration – 2 years
Application rate: 1200 g/ha/year
Average annual rainfall (mm): 868 mm
Average annual leachate volume (mm): 443 mm
Neither Mecoprop-P nor 4-chloro-2-methylphenol were detected at concentrations > 0.03µg/L. Unidentified compounds were present at 0.4-0.5 and 0.1-0.2µg/L a.s. equivalents 1 and 2 years after application, respectively.

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Hydrolytic degradation (Regulation (EU) N° 283/2013, Annex Part A, point 7.2.1.1)

Hydrolytic degradation of the active substance and metabolites > 10 %

pH 5: *stable to hydrolysis* at 25 and 70 °C

pH 7: *stable to hydrolysis* at 25 and 70 °C

pH 9: *stable to hydrolysis* at 25 and 70 °C

Aqueous photochemical degradation (Regulation (EU) N° 283/2013, Annex Part A, points 7.2.1.2 / 7.2.1.3)

Photolytic degradation of active substance and metabolites above 10 %

DT₅₀: 7 days

Natural light, 42°N; DT₅₀ 4.65 days

o-cresol: max 30.4 % AR (30 d)

Estimated DT₅₀ at 42 °N 42 days

Quantum yield of direct phototransformation in water at $\Sigma > 290$ nm

Not calculated

'Ready biodegradability' (Regulation (EU) N° 283/2013, Annex Part A, point 7.2.2.1)

Readily biodegradable (yes/no)

Yes

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Aerobic mineralisation in surface water (Regulation (EU) N° 283/2013, Annex Part A, point 7.2.2.2 and Regulation (EU) N° 284/2013, Annex Part A, point 9.2.1)

Parent										
System identifier (indicate fresh, estuarine or marine)	pH water phase	pH sed ^{a)}	t. °C ^{b)}	DT ₅₀ /DT ₉₀ whole sys. (suspended sediment test)		St. (χ ²)	DT ₅₀ /DT ₉₀ Water (pelagic test)		St. (χ ²)	Method of calculation
				At study temp	Normalised to x °C ^{c)}		At study temp	Normalised to x °C ^{c)}		
Rhineland-Palatinate (fresh)	8.28	-	20	-	-	-	>1000 days	-	-	Default value

^{a)} Measured in [medium to be stated, usually calcium chloride solution or water]

^{b)} Temperature of incubation=temperature that the environmental media was collected or std temperature of 20°C

^{c)} Normalised using a Q10 of 2.58 to the temperature of the environmental media at the point of sampling. (note temp of x should be stated).

Not required/no metabolites to consider

Metabolite X	Max in total system x % after n days									
System identifier (indicate fresh, estuarine or marine)	pH water phase	pH sed ^{a)}	t. °C ^{b)}	DT ₅₀ /DT ₉₀ whole sys. (suspended sediment test)		St. (χ ²)	DT ₅₀ /DT ₉₀ Water (pelagic test)		St. (χ ²)	Method of calculation
				At study temp	Normalised to x °C ^{c)}		At study temp	Normalised to x °C ^{c)}		

^{a)} Measured in [medium to be stated, usually calcium chloride solution or water]

^{b)} Temperature of incubation=temperature that the environmental media was collected or std temperature of 20°C

^{c)} Normalised using a Q10 of 2.58 to the temperature of the environmental media at the point of sampling. (note temp of x should be stated).

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Mineralisation and non extractable residues (for parent dosed experiments)					
System identifier (indicate fresh, estuarine or marine)	pH water phase	pH sed	Mineralisation x % after n d. (end of the study).	Non-extractable residues. max x % after n d (suspended sediment test)	Non-extractable residues. max x % after n d (end of the study) (suspended sediment test)
Rhineland-Palatinate (fresh)	8.28	-	2% after 58 days	-	-

Water / sediment study (Regulation (EU) N° 283/2013, Annex Part A, point 7.2.2.3 and Regulation (EU) N° 284/2013, Annex Part A, point 9.2.2)

Parent	Distribution (<i>Max. sed 22.13 % after 56 d</i>)									
Water / sediment system	pH water phase	pH sed ^{a)}	t. °C	DT ₅₀ whole sys.	St. (χ^2)	DT ₅₀ water	St. (χ^2)	DT ₅₀ sed	St. (χ^2)	Method of calculation
Manningtree	5.57	6.7	20	59	8.76	83	6.12	-	-	SFO (whole sys) HS, slow phase (water)
Ongar	6.94	8.6	20	163	2.99	86	1.63	-	-	HS, slow phase
Calwich Abbey	8.2	7.2	20	171	1.26	73	2.89	-	-	HS, slow phase
Swiss Lake	7.1	6.6	20	244	2.48	171	3.95	-	-	SFO
Geometric mean at 20°C ^{b)}				141		92		-		

^{a)} Measured in water

^{b)} Normalised using a Q10 of 2.58

Not required/no metabolites to consider

Metabolite X	Distribution (<i>e.g. max in water x after n d. Max. sed x % after n d</i>). Max in total system x % after n days, kinetic formation fraction (k_f/k_{dp}): <i>where possible indicate a value for each experiment, clarifying whether fraction was derived for whole system or sediment and or water compartments. The identity of the precursor should also be included (e.g. from parent). Arithmetic mean of kinetic formation fractions to be stated. When calculating arithmetic means, the compartments: whole system, water, sediment should not be mixed.</i>									
Water / sediment system	pH water phase	pH sed ^{a)}	t. °C	DT ₅₀ /DT ₉₀ whole sys.	St. (χ^2)	DT ₅₀ /DT ₉₀ water	St. (χ^2)	DT ₅₀ /DT ₉₀ sed	St. (χ^2)	Method of calculation

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Geometric mean at 20°C ^{b)}							
^{a)} Measured in [medium to be stated, usually calcium chloride solution or water] ^{b)} Normalised using a Q10 of 2.58							

Mineralisation and non extractable residues (from parent dosed experiments)					
Water / sediment system	pH water phase	pH sed	Mineralisation x % after n d. (end of the study).	Non-extractable residues in sed. max x % after n d	Non-extractable residues in sed. max x % after n d (end of the study)
Manningtree	5.57	6.7	55% after 100 d	28% after 100 d	28% after 100 d
Ongar	6.94	8.6	58% after 100 d	40% after 61 d	24% after 100 d
Calwich Abbey	8.2	7.2	50% after 98 d	32% after 98 d	32% after 98 d
Swiss Lake	7.1	6.6	13% after 98 d	10% after 98 d	10% after 98 d

Fate and behaviour in air (Regulation (EU) N° 283/2013, Annex Part A, point 7.3.1)

Direct photolysis in air

Not studied - no data requested

Photochemical oxidative degradation in air

DT₅₀ of 22 hours derived by the Atkinson model. OH (24 h) concentration assumed = $5 \times 10^6 \text{ cm}^{-3}$

Volatilisation

from plant surfaces (BBA guideline): <0.1 % after 24 hours

from soil surfaces (BBA guideline): <1 % after 24 hours

Metabolites

No data

Residues requiring further assessment (Regulation (EU) N° 283/2013, Annex Part A, point 7.4.1)

Environmental occurring residues requiring further assessment by other disciplines (toxicology and ecotoxicology) and or requiring consideration for groundwater exposure

Soil: mecoprop-P
 Surface water: mecoprop-P, *o*-cresol
 Sediment: mecoprop-P
 Ground water: mecoprop-P
 Air: mecoprop-P

Definition of the residue for monitoring (Regulation (EU) N° 283/2013, Annex Part A, point 7.4.2)

See section 5, Ecotoxicology

Monitoring data, if available (Regulation (EU) N° 283/2013, Annex Part A, point 7.5)

Soil (indicate location and type of study)

No monitoring data available

Surface water (indicate location and type of study)

Survey of monitoring programmes (2009-2014) – 28 European Union Member States + Norway and Switzerland
 Mecoprop-P monitored in Ireland, Italy, Luxembourg,

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Ground water (indicate location and type of study)	<p>Norway, Slovakia, Switzerland and the Netherlands. Total 341 sites monitored and 4,169 samples analysed Mecoprop-P > 0.1 µg/l in ≥43 samples. Maximum 1.8 µg/l (Norway)</p> <p>Survey of monitoring programmes (2009-2014) – 28 European Union Member States + Norway and Switzerland. Mecoprop-P monitored in Luxembourg, Norway and the Netherlands – total 267 sites, 1047 samples Mecoprop-P > 0.1 µg/l in ≤11 samples. Maximum 1.438 µg/l (Luxembourg)</p>
Air (indicate location and type of study)	No monitoring data available

PEC soil (Regulation (EU) N° 284/2013, Annex Part A, points 9.1.3 / 9.3.1)

Parent	DT ₅₀ (d): 10.12 days
Method of calculation	Kinetics: <i>pseudo-SFO (FOMC DT₉₀/3.32)</i> Field or Lab: <i>worst case non-normalised from laboratory studies.</i>
Application data	<p>Crop: <i>spring cereals</i> Depth of soil layer: 5cm Soil bulk density: 1.5g/cm³ % plant interception: 0% Number of applications: 1 Interval (d): - Application rate(s): 1200 g a.s./ha</p>

PEC _(s) (mg/kg)	Single application	Single application	Multiple application	Multiple application
	Actual	Time weighted average	Actual	Time weighted average
Initial	1.600		-	
Short term	24h	1.494	1.546	-
	2d	1.395	1.495	-
	4d	1.217	1.400	-
Long term	7d	0.991	1.271	-
	28d	0.613	1.029	-
	50d	0.235	0.712	-
	100d	0.052	0.452	-

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PEC _(s) (mg/kg)	Single application Actual	Single application Time weighted average	Multiple application Actual	Multiple application Time weighted average
Plateau concentration	<i>Not calculated</i>			

Not required/no metabolites to consider

Metabolite I	Molecular weight relative to the parent:			
Method of calculation	DT ₅₀ (d): <i>x</i> days			
	Kinetics: <i>SFO</i>			
	Field or Lab: <i>representative worst case from field studies.</i>			
Application data	Application rate assumed: <i>x g/ha (assumed Met I is formed at a maximum of x % of the applied dose) or formation fraction (if sequential modelling is employed)</i>			
PEC _(s) (mg/kg)	Single application Actual	Single application Time weighted average	Multiple application Actual	Multiple application Time weighted average
Initial				
Short term 24h				
2d				
4d				
Long term 7d				
28d				
50d				
100d				
Plateau concentration	<i>x mg/kg after n yr</i>			

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PEC ground water (Regulation (EU) N° 284/2013, Annex Part A, point 9.2.4.1)

Method of calculation and type of study (e.g. modelling, field leaching, lysimeter)

For FOCUS gw modelling, values used –
Modelling using FOCUS model(s), with appropriate FOCUSgw scenarios, according to FOCUS guidance.
Model(s) used: PEARL v4.4.4, PELMO v5.5.3, MACRO v4.4.2
Crop: Spring/winter cereals
Crop uptake factor: 0
Water solubility (mg/L): 250 000 mg/l at 20°C
Vapour pressure: 0.0014 Pa at 25°C
Geometric mean parent DT_{50 lab} 5.24 d (normalisation to 10kPa or pF2, 20 °C with Q10 of 2.58 and Walker equation coefficient 0.7).
K_{OC}: 21 mL/g, ¹/_n= 0.92 (pH > 5.5).
Metabolites: not required

Application rate

Gross application rate: 1200 g/ha.
Crop growth stage: BBCH13-32 spring cereals / BBCH20-32 winter cereals
Canopy interception %: 0% spring cereals / 20% winter cereals
Application rate net of interception: 1200 g/ha spring cereals / 960 g/ha winter cereals.
No. of applications: 1
Time of application (absolute or relative application dates): 1st March

PEC(gw) - FOCUS modelling results (80th percentile annual average concentration at 1m)

Spring Cereals	Scenario	Parent (µg/L)		
		PEARL	PELMO	MACRO
	Châteaudun	<0.001	<0.001	0.010
	Hamburg	0.024	0.052	-
	Jokioinen	0.005	0.035	-
	Kremsmünster	0.010	0.007	-
	Okehampton	0.023	0.056	-
	Piacenza	-	-	-
	Porto	<0.001	0.002	-
	Sevilla	-	-	-
	Thiva	-	-	-

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Winter Cereals	Scenario	Parent (µg/L)		
		PEARL	PELMO	MACRO
	Châteaudun	<0.001	0.002	<0.001
	Hamburg	0.015	0.073	-
	Jokioinen	0.005	0.076	-
	Kremsmünster	0.009	0.017	-
	Okehampton	0.031	0.115	-
	Piacenza	0.015	0.047	-
	Porto	0.001	0.006	-
	Sevilla	<0.001	<0.001	-
	Thiva	<0.001	<0.001	-

Not required.

Model / Crop	Scenario	Metabolite (µg/L)			
		<i>Met IV</i>	<i>Met V</i>	<i>Met VI</i>	<i>Met VII</i>
	Chateaudun				
	Hamburg				
	Jokioinen				
	Kremsmunster				
	Okehampton				
	Piacenza				
	Porto				
	Sevilla				
	Thiva				

PEC_(gw) From lysimeter / field studies

Parent	1 st year	2 nd year	3 rd year
Annual average (µg/L)			
Metabolite X	1 st year	2 nd year	3 rd year
Annual average (µg/L)			

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PEC surface water and PEC sediment (Regulation (EU) N° 284/2013, Annex Part A, points 9.2.5 / 9.3.1)

Parent Parameters used in FOCUS _{sw} step 1 and 2	Version control no. of FOCUS calculator: v.2.1 Molecular weight (g/mol): 214.65 K _{OC} /K _{OM} (mL/g): 21 / 12.18 DT ₅₀ soil (d): 5.24 days (Lab) DT ₅₀ water/sediment system (d): 141 d DT ₅₀ water (d): 141 d DT ₅₀ sediment (d): 1000 d Crop interception (%): spring cereals - 0 % (no interception) / winter cereals - 25% (minimal crop cover)
Parameters used in FOCUS _{sw} step 3 (if performed)	Version control no.'s of FOCUS software: SWASH v3.1 / SWAN v3.0 Water solubility (mg/L): 250000 Vapour pressure: 1.4 x10 ⁻³ Pa at 25°C K _{om} /K _{oc} (mL/g): 12.18 / 21 1/n: (Freundlich exponent) 0.92 Q10=2.58, Walker equation coefficient 0.7 Crop uptake factor: 0
Application rate	Crop and growth stage: spring cereals BBCH 13-32 / winter cereals BBCH 20-32 Number of applications: 1 Interval (d): - Application rate(s): 1200 g a.s./ha Application window: Step 1+2; Mar-May Step 3: Spring cereals – 7 days post emergence to 31 st July Winter cereals – 1 st March to 31 st July

FOCUS STEP 1 Scenario	Day after overall maximum	PEC _{sw} (µg/L)		PEC _{SED} (µg/kg)	
		Actual	TWA	Actual	TWA
Spring and Winter Cereals	0 h	400.14		81.71	
	24 h	397.88	399.01	83.55	82.63
	2 d	395.93	397.96	83.15	82.99
	4 d	392.05	395.97	82.33	82.86
	7 d	386.32	393.06	81.13	82.38

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FOCUS STEP 1 Scenario	Day after overall maximum	PEC _{sw} (µg/L)		PEC _{sed} (µg/kg)	
		Actual	TWA	Actual	TWA
	14 d	373.25	386.40	78.38	81.06
	21 d	360.62	379.90	75.73	79.72
	28 d	348.42	373.55	73.17	78.40
	42 d	325.25	361.27	68.30	75.84

FOCUS STEP 2 Scenario	Day after overall maximum	PEC _{sw} (µg/L)		PEC _{sed} (µg/kg)	
		Actual	TWA	Actual	TWA
Northern EU (Spring Cereals / March-May)	0 h	56.47		11.83	
	24 h	56.10	56.29	11.77	11.80
	2 d	55.83	56.13	11.72	11.77
	4 d	55.30	55.84	11.61	11.72
	7 d	54.51	55.44	11.44	11.63
	14 d	52.71	54.52	11.06	11.44
	21 d	50.96	53.62	10.70	11.25
	28 d	49.28	52.77	10.34	11.07
	42 d	46.08	51.05	9.67	10.71
Southern EU (Spring Cereals / March-May)	0 h	102.32		21.45	
	24 h	101.72	102.01	21.35	21.40
	2 d	101.23	101.79	21.25	21.35
	4 d	100.27	101.29	21.04	21.25
	7 d	98.83	100.52	20.74	21.10
	14 d	95.57	98.86	20.06	20.75
	21 d	92.40	97.23	19.39	20.41
	28 d	89.35	95.64	18.75	20.07
	42 d	83.55	92.57	17.53	19.43

FOCUS STEP 2 Scenario	Day after overall maximum	PEC _{sw} (µg/L)		PEC _{sed} (µg/kg)	
		Actual	TWA	Actual	TWA
Northern EU (Winter Cereals)	0 h	45.01		9.43	
	24 h	44.69	44.85	9.38	9.40
	2 d	44.48	44.72	9.34	9.38

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FOCUS STEP 2 Scenario	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
		Actual	TWA	Actual	TWA
/ March-May)	4 d	44.05	44.49	9.25	9.34
	7 d	43.43	44.17	9.11	9.27
	14 d	41.99	43.44	8.81	9.12
	21 d	40.60	42.72	8.52	8.97
	28 d	39.26	42.02	8.24	8.82
	42 d	36.71	40.67	7.70	8.54
Southern EU (Winter Cereals / March-May)	0 h	79.39		16.64	
	24 h	78.91	79.15	16.56	16.60
	2 d	78.53	78.94	16.48	16.56
	4 d	77.78	78.55	16.32	16.48
	7 d	76.67	77.98	16.09	16.36
	14 d	74.14	76.69	15.56	16.09
	21 d	71.69	75.43	15.05	15.83
	28 d	69.32	74.19	14.55	15.57
	42 d	64.81	71.81	13.60	15.07

Spring Cereals						
FOCUS STEP 3 Scenario	Water body	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
			Actual	TWA	Actual	TWA
D1	Ditch	0	13.363		8.248	
		24	13.320	13.359	8.244	8.247
		2d	13.214	13.347	8.232	8.246
		4d	12.883	13.301	8.187	8.242
		7d	12.225	13.176	8.078	8.231
		14d	9.855	12.634	7.679	8.180
		21d	7.724	11.749	7.153	8.099
		28d	5.956	10.789	6.584	7.987
		42d	3.440	9.011	5.481	7.685
		50d	2.504	8.194	4.918	7.480
		100d	0.407	5.032	2.744	6.076

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Spring Cereals						
FOCUS STEP 3 Scenario	Water body	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
			Actual	TWA	Actual	TWA
D1	Stream	0 h	8.276		4.214	
		24 h	8.233	8.272	4.177	4.212
		2 d	8.122	8.260	4.023	4.204
		4 d	7.764	8.220	3.280	4.172
		7 d	6.899	8.108	2.732	4.085
		14 d	0.0238	7.179	2.135	3.730
		21 d	0.00797	5.392	1.793	3.359
		28 d	0.00460	4.140	1.548	3.055
		42 d	0.00231	2.865	1.201	2.604
		50d	0.00175	2.447	1.057	2.407
		100d	0.000624	1.331	0.569	1.666
D3	Ditch	0 h	7.599		0.810	
		24 h	3.405	5.881	0.577	0.765
		2 d	0.346	3.664	0.414	0.676
		4 d	0.00663	1.871	0.295	0.536
		7 d	0.00183	1.070	0.225	0.424
		14 d	0.000583	0.536	0.161	0.310
		21 d	0.000317	0.357	0.131	0.256
		28 d	0.000200	0.268	0.112	0.223
		42 d	0.000112	0.179	0.0868	0.182
		50d	0.000106	0.150	0.0763	0.166
		100d	0.000059	0.0751	0.0404	0.111
D4	Pond	0 h	0.263		0.249	
		24 h	0.260	0.261	0.249	0.249
		2 d	0.257	0.260	0.249	0.249
		4 d	0.253	0.257	0.249	0.249
		7 d	0.246	0.254	0.248	0.249
		14 d	0.233	0.247	0.247	0.249
		21 d	0.221	0.240	0.245	0.248
		28 d	0.210	0.234	0.243	0.248

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UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 4 Environmental fate and behaviour

Spring Cereals						
FOCUS STEP 3 Scenario	Water body	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
			Actual	TWA	Actual	TWA
		42 d	0.190	0.223	0.237	0.247
		50 d	0.178	0.216	0.233	0.247
		100 d	0.125	0.183	0.203	0.241
D4	Stream	0 h	6.304		0.235	
		24 h	0.000523	0.714	0.0581	0.108
		2 d	0.000333	0.357	0.0421	0.0791
		4 d	0.000269	0.179	0.0304	0.0574
		7 d	0.000233	0.102	0.0233	0.0442
		14 d	0.000177	0.0512	0.0169	0.0319
		21 d	0.000113	0.0343	0.0138	0.0264
		28 d	0.000067	0.0258	0.0119	0.0230
		42 d	0.000003	0.0173	0.00938	0.0188
		50 d	0.000002	0.0146	0.00834	0.0172
		100 d	0.000005	0.00755	0.00464	0.0117
D5	Pond	0 h	0.262		0.257	
		24 h	0.258	0.260	0.257	0.257
		2 d	0.256	0.259	0.256	0.257
		4 d	0.251	0.256	0.256	0.257
		7 d	0.245	0.252	0.256	0.256
		14 d	0.233	0.245	0.255	0.256
		21 d	0.222	0.239	0.252	0.256
		28 d	0.211	0.234	0.250	0.256
		42 d	0.191	0.223	0.243	0.255
		50 d	0.182	0.217	0.239	0.254
		100 d	0.134	0.187	0.210	0.248
D5	Stream	0 h	5.958		0.107	
		24 h	0.000028	0.221	0.0172	0.0329
		2 d	0.000014	0.110	0.0124	0.0237
		4 d	0.000009	0.0552	0.00894	0.0171
		7 d	0.000007	0.0316	0.00682	0.0131

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Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 4 Environmental fate and behaviour

Spring Cereals						
FOCUS STEP 3 Scenario	Water body	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
			Actual	TWA	Actual	TWA
		14 d	0.000005	0.0158	0.00489	0.00940
		21 d	0.000004	0.0105	0.00401	0.00774
		28 d	0.000004	0.00789	0.00345	0.00673
		42 d	0.000003	0.00526	0.00274	0.00551
		50 d	0.000002	0.00442	0.00245	0.00504
		100 d	0.000000	0.00222	0.00139	0.00344
R4	Stream	0 h	32.316		3.377	
		24 h	0.0137	20.891	1.474	2.627
		2 d	0.00494	10.459	1.106	2.056
		4 d	2.125	6.808	1.515	1.746
		7 d	0.00175	4.202	0.968	1.545
		14 d	0.000494	2.119	0.664	1.181
		21 d	0.000252	1.463	0.530	0.988
		28 d	0.000159	1.098	0.447	0.864
		42 d	0.000084	0.732	0.340	0.707
		50 d	0.000064	0.615	0.296	0.645
		100 d	0.000000	0.308	0.150	0.428

Winter Cereals						
FOCUS STEP 3 Scenario	Water body	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
			Actual	TWA	Actual	TWA
D1	Ditch	0	158.372		54.830	
		24	151.690	157.712	54.787	54.826
		2d	137.512	155.477	54.678	54.813
		4d	115.752	148.964	54.342	54.764
		7d	93.779	136.698	53.696	54.641
		14d	63.302	113.633	53.411	54.199
		21d	48.843	96.932	51.260	53.806
		28d	43.743	85.352	48.167	53.420

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Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
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Winter Cereals						
FOCUS STEP 3 Scenario	Water body	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
			Actual	TWA	Actual	TWA
		42d	28.095	69.997	42.473	51.824
		50d	22.108	63.250	40.343	50.667
		100d	5.275	39.194	22.103	42.679
D1	Stream	0 h	98.801		54.830	
		24 h	94.401	98.359	54.787	54.826
		2 d	84.822	96.907	54.678	54.813
		4 d	71.331	92.690	54.342	54.764
		7 d	57.289	84.881	53.696	54.641
		14 d	37.524	70.062	53.411	54.199
		21 d	27.780	59.367	51.260	53.806
		28 d	26.634	51.864	48.167	53.420
		42 d	12.373	42.412	42.473	51.824
		50d	0.0583	37.357	40.343	50.667
		100d	0.0118	19.873	22.103	42.679
D2	Ditch	0 h	184.278		33.285	
		24 h	87.999	123.356	33.210	33.269
		2 d	70.834	101.589	33.053	33.241
		4 d	142.741	86.134	32.203	33.113
		7 d	69.496	86.917	30.734	32.720
		14 d	31.306	67.277	30.488	32.067
		21 d	34.689	55.979	31.307	31.885
		28 d	25.102	50.034	27.755	31.570
		42 d	10.230	38.696	22.525	29.729
		50 d	8.723	34.042	19.842	28.569
		100 d	2.614	19.395	10.900	22.134
D2	Stream	0 h	116.438		19.447	
		24 h	43.514	66.450	19.402	19.427
		2 d	35.416	58.294	19.237	19.395
		4 d	89.013	50.030	18.405	19.206
		7 d	39.606	48.060	17.195	18.815

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UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

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Winter Cereals						
FOCUS STEP 3 Scenario	Water body	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
			Actual	TWA	Actual	TWA
		14 d	16.457	36.518	16.809	18.179
		21 d	25.885	30.464	18.191	18.031
		28 d	15.550	27.436	16.093	17.934
		42 d	4.855	21.426	12.729	16.879
		50 d	4.606	18.763	11.388	16.196
		100 d	1.364	10.849	6.281	12.601
		D3	Ditch	0 h	7.583	
24 h	2.091			7.583	0.470	0.666
2 d	0.104			2.091	0.333	0.568
4 d	0.00345			0.104	0.238	0.439
7 d	0.00129			0.00345	0.182	0.345
14 d	0.000448			0.00129	0.130	0.251
21 d	0.000247			0.000448	0.106	0.207
28 d	0.000160			0.000247	0.0909	0.180
42 d	0.000092			0.000160	0.0707	0.147
50d	0.000078			0.000092	0.0624	0.134
100d	0.000057			0.000078	0.0333	0.0901
D4	Pond	0 h	0.263		0.314	
		24 h	0.260	0.261	0.314	0.314
		2 d	0.257	0.260	0.314	0.314
		4 d	0.253	0.258	0.314	0.314
		7 d	0.248	0.255	0.313	0.314
		14 d	0.235	0.248	0.311	0.314
		21 d	0.221	0.241	0.309	0.313
		28 d	0.208	0.237	0.306	0.313
		42 d	0.246	0.233	0.297	0.312
		50 d	0.238	0.235	0.291	0.311
		100 d	0.173	0.220	0.249	0.303

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Winter Cereals						
FOCUS STEP 3 Scenario	Water body	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
			Actual	TWA	Actual	TWA
D4	Stream	0 h	6.187		0.203	
		24 h	0.000421	0.545	0.0440	0.122
		2 d	0.000308	0.297	0.0320	0.122
		4 d	0.000261	0.280	0.0232	0.121
		7 d	0.000306	0.250	0.0178	0.119
		14 d	0.000560	0.193	0.0130	0.112
		21 d	0.00136	0.148	0.0111	0.104
		28 d	0.0383	0.116	0.0157	0.0963
		42 d	0.102	0.0808	0.114	0.0846
		50 d	0.0278	0.0745	0.0881	0.0795
100 d	0.000382	0.0409	0.0368	0.0575		
D5	Pond	0 h	0.262		0.250	
		24 h	0.258	0.260	0.250	0.250
		2 d	0.256	0.259	0.250	0.250
		4 d	0.251	0.256	0.249	0.250
		7 d	0.244	0.252	0.249	0.250
		14 d	0.232	0.245	0.248	0.249
		21 d	0.218	0.238	0.246	0.249
		28 d	0.204	0.231	0.244	0.249
		42 d	0.183	0.218	0.238	0.248
		50 d	0.175	0.212	0.233	0.248
100 d	0.132	0.182	0.203	0.242		
D5	Stream	0 h	5.978		0.109	
		24 h	0.000037	0.225	0.0176	0.0336
		2 d	0.000023	0.113	0.0127	0.0243
		4 d	0.000018	0.0563	0.00915	0.0175
		7 d	0.000016	0.0322	0.00698	0.0134
		14 d	0.000014	0.0161	0.00501	0.00961
		21 d	0.000010	0.0107	0.00411	0.00792
		28 d	0.000009	0.00806	0.00354	0.00689

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Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
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Winter Cereals						
FOCUS STEP 3 Scenario	Water body	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
			Actual	TWA	Actual	TWA
		42 d	0.000008	0.00538	0.00282	0.00564
		50 d	0.000007	0.00452	0.00252	0.00517
		100 d	0.000000	0.00227	0.00143	0.00353
D6	Ditch	0 h	8.127		1.397	
		24 h	4.483	6.680	1.176	1.357
		2 d	1.059	4.526	1.009	1.274
		4 d	0.530	2.587	0.888	1.133
		7 d	0.491	1.703	0.819	1.021
		14 d	0.450	1.100	0.761	0.906
		21 d	0.316	0.887	0.702	0.851
		28 d	0.347	0.779	0.664	0.806
		42 d	0.115	0.673	0.590	0.761
		50 d	0.0140	0.675	0.486	0.728
		100 d	0.00141	0.499	0.237	0.586
R1	Pond	0 h	0.662		0.598	
		24 h	0.655	0.658	0.598	0.598
		2 d	0.648	0.655	0.598	0.598
		4 d	0.636	0.649	0.597	0.598
		7 d	0.619	0.640	0.595	0.598
		14 d	0.582	0.620	0.589	0.597
		21 d	0.547	0.602	0.581	0.596
		28 d	0.515	0.584	0.568	0.595
		42 d	0.453	0.551	0.541	0.591
		50 d	0.418	0.533	0.524	0.588
		100 d	0.249	0.430	0.411	0.562
R1	Stream	0 h	19.599		1.825	
		24 h	0.0120	9.963	0.737	1.334
		2 d	0.00277	4.984	0.553	1.027
		4 d	0.000898	2.493	0.407	0.764
		7 d	0.000368	1.425	0.316	0.595

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Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
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Winter Cereals						
FOCUS STEP 3 Scenario	Water body	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
			Actual	TWA	Actual	TWA
		14 d	0.000133	0.715	0.230	0.434
		21 d	0.000072	0.525	0.188	0.359
		28 d	0.000046	0.395	0.161	0.313
		42 d	0.000024	0.264	0.125	0.257
		50 d	0.000022	0.221	0.111	0.235
		100 d	0.000008	0.111	0.0584	0.158
		R3	Stream	0 h	44.152	
24 h	0.0466			27.071	1.956	3.411
2 d	0.0126			13.603	1.461	2.680
4 d	0.00451			6.806	1.071	2.012
7 d	0.00193			3.891	0.829	1.569
14 d	1.397			2.089	0.761	1.141
21 d	0.000454			1.418	0.514	0.961
28 d	0.000341			1.079	0.434	0.840
42 d	0.000180			0.719	0.332	0.688
50 d	0.000140			0.604	0.291	0.628
100 d	0.000054			0.302	0.150	0.419
R4	Stream	0 h	5.012		0.261	
		24 h	0.000545	0.952	0.0755	0.141
		2 d	0.000161	0.476	0.0549	0.104
		4 d	0.000055	0.238	0.0396	0.0758
		7 d	0.000023	0.136	0.0302	0.0582
		14 d	0.000008	0.0681	0.0216	0.0418
		21 d	0.000005	0.0454	0.0177	0.0344
		28 d	0.000017	0.0355	0.0178	0.0303
		42 d	0.000002	0.0237	0.0129	0.0251
		50 d	0.000002	0.0199	0.0114	0.0231
		100 d	0.000001	0.0102	0.00656	0.0159

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Rapporteur Member State **Month and year** **Active substance and Plant Protection Product (Name)**

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Section 4 Environmental fate and behaviour

Spring Cereals – Surface Water											
Step 4	Max PEC_{sw} (µg/L)										
	5m NSBZ	10m NSBZ	5m VFS	10m VFS	20m VFS	50% DRT	75% DRT	95% DRT	5m NSBZ + 5m VFS	10m NSBZ + 5m VFS	10m NSBZ + 10m VFS
D1 (Ditch)	13.361	13.360	N/A	N/A	N/A	13.361	13.361	13.360	13.361	13.360	13.360
D1 (Stream)	8.276	8.276	N/A	N/A	N/A	8.276	8.276	8.276	8.276	8.276	8.276
D3 (Ditch)	2.060	1.092	N/A	N/A	N/A	3.800	1.900	0.487	2.060	1.093	1.092
D4 (Pond)	0.259	0.188	N/A	N/A	N/A	0.173	0.108	0.057	0.259	0.196	0.188
D4 (Stream)	2.334	1.245	N/A	N/A	N/A	3.192	1.617	0.373	2.334	1.255	1.245
D5 (Pond)	0.258	0.187	N/A	N/A	N/A	0.172	0.107	0.056	0.258	0.195	0.187
D5 (Stream)	2.193	1.167	N/A	N/A	N/A	3.001	1.511	0.320	2.193	1.172	1.167
R4 (Stream)	32.316	32.316	5.033	14.620	7.640	32.316	32.316	32.316	1.838	0.975	14.620

NSBZ - No spray buffer zone

VFS – Vegetated filter strip: 5m VFS – run-off and erosion reduction calculated using VFS mod. 10m VFS – Run-off reduction 0.6, Erosion reduction 0.85. 20m VFS – Run-off reduction 0.8, Erosion reduction 0.95.

DRT – Drift reduction technology

Winter Cereals – Surface Water											
Step 4	Max PEC_{sw} (µg/L)										
	5m NSBZ	10m NSBZ	5m VFS	10m VFS	20m VFS	50% DRT	75% DRT	95% DRT	5m NSBZ + 5m VFS	10m NSBZ + 5m VFS	10m NSBZ + 10m VFS
D1 (Ditch)	158.372	158.372	N/A	N/A	N/A	158.372	158.372	158.372	158.372	158.372	158.372
D1 (Stream)	98.801	98.801	N/A	N/A	N/A	98.801	98.801	98.801	98.801	98.801	98.801
D2 (Ditch)	184.278	184.278	N/A	N/A	N/A	184.278	184.278	184.278	184.278	184.278	184.278
D2 (Stream)	116.438	116.438	N/A	N/A	N/A	116.438	116.438	116.438	116.438	116.438	116.438
D3 (Ditch)	2.055	1.090	N/A	N/A	N/A	3.792	1.896	0.522	2.055	1.090	1.090
D4 (Pond)	0.273	0.204	N/A	N/A	N/A	0.198	0.154	0.119	0.273	0.204	0.204
D4 (Stream)	2.308	1.236	N/A	N/A	N/A	3.154	1.607	0.370	2.308	1.236	1.236
D5 (Pond)	0.272	0.197	N/A	N/A	N/A	0.189	0.125	0.073	0.272	0.197	0.197
D5 (Stream)	2.208	1.177	N/A	N/A	N/A	3.020	1.526	0.330	2.208	1.177	1.177
D6 (Ditch)	2.586	1.638	N/A	N/A	N/A	4.327	2.450	1.105	2.586	1.638	1.638
R1 (Pond)	0.674	0.609	0.262	0.402	0.315	0.602	0.545	0.499	0.273	0.208	0.349
R1 (Stream)	19.599	19.599	5.030	8.866	5.030	19.599	19.599	19.599	1.837	1.829	8.866
R3 (Stream)	44.152	44.152	7.039	20.082	10.519	44.152	44.152	44.152	2.571	1.363	20.082
R4 (Stream)	1.830	0.971	5.012	5.012	5.012	2.506	1.253	0.251	1.830	0.971	0.971

NSBZ - No spray buffer zone

VFS – Vegetated filter strip: 5m VFS – run-off and erosion reduction calculated using VFS mod. 10m VFS – Run-off reduction 0.6, Erosion reduction 0.85. 20m VFS – Run-off reduction 0.8, Erosion reduction 0.95.

DRT – Drift reduction technology

Spring Cereals - Sediment											
Step 4	Max PEC_{sed} (µg/kg)										
	5m NSBZ	10m NSBZ	5m VFS	10m VFS	20m VFS	50% DRT	75% DRT	95% DRT	5m NSBZ + 5m VFS	10m NSBZ + 5m VFS	10m NSBZ + 10m VFS
D1 (Ditch)	8.101	8.072	N/A	N/A	N/A	8.150	8.098	8.056	8.101	8.074	8.072
D1 (Stream)	4.211	4.210	N/A	N/A	N/A	4.212	4.210	4.209	4.211	4.210	4.210
D3 (Ditch)	0.247	0.138	N/A	N/A	N/A	0.436	0.234	0.071	0.247	0.143	0.138
D4 (Pond)	0.248	0.182	N/A	N/A	N/A	0.168	0.107	0.058	0.248	0.190	0.182

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D4 (Stream)	0.090	0.050	N/A	N/A	N/A	0.122	0.064	0.017	0.090	0.050	0.050
D5 (Pond)	0.256	0.188	N/A	N/A	N/A	0.173	0.110	0.059	0.256	0.196	0.188
D5 (Stream)	0.041	0.022	N/A	N/A	N/A	0.055	0.029	0.007	0.041	0.022	0.022
R4 (Stream)	3.362	3.357	0.278	1.574	0.851	3.366	3.359	3.353	0.154	0.150	1.554

NSBZ - No spray buffer zone

VFS - Vegetated filter strip: 5m VFS - run-off and erosion reduction calculated using VFS mod. 10m VFS - Run-off reduction 0.6, Erosion reduction 0.85. 20m VFS - Run-off reduction 0.8, Erosion reduction 0.95.

DRT - Drift reduction technology

Winter Cereals - Sediment											
Step 4 Scenario	Max PECsed (µg/kg)										
	5m NSBZ	10m NSBZ	5m VFS	10m VFS	20m VFS	50% DRT	75% DRT	95% DRT	5m NSBZ + 5m VFS	10m NSBZ + 5m VFS	10m NSBZ + 10m VFS
D1 (Ditch)	54.767	54.755	N/A	N/A	N/A	54.789	54.766	54.748	54.767	54.755	54.755
D1 (Stream)	33.948	33.947	N/A	N/A	N/A	33.948	33.948	33.947	33.948	33.947	33.947
D2 (Ditch)	32.609	32.474	N/A	N/A	N/A	32.844	32.598	32.400	32.609	32.474	32.474
D2 (Stream)	19.012	18.889	N/A	N/A	N/A	19.109	18.933	18.791	19.012	18.889	18.889
D3 (Ditch)	0.225	0.127	N/A	N/A	N/A	0.395	0.215	0.071	0.225	0.127	0.127
D4 (Pond)	0.326	0.260	N/A	N/A	N/A	0.252	0.195	0.148	0.326	0.260	0.260
D4 (Stream)	0.118	0.117	N/A	N/A	N/A	0.119	0.118	0.116	0.118	0.117	0.117
D5 (Pond)	0.262	0.193	N/A	N/A	N/A	0.185	0.124	0.074	0.262	0.193	0.193
D5 (Stream)	0.042	0.023	N/A	N/A	N/A	0.057	0.030	0.007	0.042	0.023	0.023
D6 (Ditch)	0.816	0.701	N/A	N/A	N/A	1.016	0.806	0.639	0.816	0.701	0.701
R1 (Pond)	0.610	0.547	0.264	0.383	0.310	0.540	0.485	0.440	0.276	0.211	0.330
R1 (Stream)	1.812	1.808	0.276	0.857	0.467	1.816	1.810	1.805	0.190	0.186	0.840
R3 (Stream)	4.195	4.183	0.433	2.004	1.099	4.204	4.189	4.176	0.163	0.088	1.958
R4 (Stream)	0.098	0.053	0.261	0.261	0.261	0.133	0.068	0.015	0.098	0.053	0.053

NSBZ - No spray buffer zone

VFS - Vegetated filter strip: 5m VFS - run-off and erosion reduction calculated using VFS mod. 10m VFS - Run-off reduction 0.6, Erosion reduction 0.85. 20m VFS - Run-off reduction 0.8, Erosion reduction 0.95.

DRT - Drift reduction technology

Metabolite *o-cresol*

Parameters used in FOCUSsw step 1 and 2

Molecular weight: 108.14
 Soil or water metabolite: aqueous photolysis (water)
 Koc/Kom (mL/g): 1
 DT₅₀ soil (d): 1000
 DT₅₀ water/sediment system (d): 1000
 DT₅₀ water (d): 1000
 DT₅₀ sediment (d): 1000
 Crop interception (%): spring cereals - 0 % (no interception) / winter cereals - 25% (minimal crop cover)
 Maximum occurrence observed (% molar basis with respect to the parent)
 Total Water and Sediment: 30.4 % (aqueous photolysis study)
 Soil: 0% (value used in modelling 0.001%)

Parameters used in FOCUSsw step 3 (if performed)

Not performed

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 4 Environmental fate and behaviour

Application rate

Crop and growth stage: spring cereals BBCH 13-32 / winter cereals BBCH 20-32
 Number of applications: 1
 Interval (d): -
 Application rate(s): 1200 g a.s./ha
 Application window: Mar-May

Main routes of entry

Formed in water

FOCUS STEP 1 Scenario	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
		Actual	TWA	Actual	TWA
Spring and Winter Cereals	0h	1.68		<0.001	
	24h	1.68	1.68	0.017	0.008
	2d	1.68	1.68	0.017	0.013
	4d	1.67	1.68	0.017	0.015
	7d	1.67	1.68	0.017	0.016
	14d	1.66	1.67	0.017	0.016
	21d	1.65	1.67	0.017	0.016
	28d	1.65	1.66	0.017	0.016
	42d	1.63	1.65	0.016	0.016

FOCUS STEP 2 Scenario	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
		Actual	TWA	Actual	TWA
Northern EU (Spring and Winter Cereals / March-May)	0 h	1.68		0.017	
	24 h	1.68	1.68	0.017	0.017
	2 d	1.68	1.68	0.017	0.017
	4 d	1.67	1.68	0.017	0.017
	7 d	1.67	1.67	0.017	0.017
	14 d	1.66	1.67	0.017	0.017
	21 d	1.65	1.67	0.017	0.017
	28 d	1.65	1.66	0.016	0.017
	42 d	1.63	1.65	0.016	0.017
Southern EU	0 h	1.68		0.017	
	24 h	1.68	1.68	0.017	0.017

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 4 Environmental fate and behaviour

FOCUS STEP 2 Scenario	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
		Actual	TWA	Actual	TWA
(Spring and Winter Cereals / March-May)	2 d	1.68	1.68	0.017	0.017
	4 d	1.67	1.68	0.017	0.017
	7 d	1.67	1.67	0.017	0.017
	14 d	1.66	1.67	0.017	0.017
	21 d	1.65	1.67	0.017	0.017
	28 d	1.65	1.66	0.016	0.017
	42 d	1.63	1.65	0.016	0.017

Not required

FOCUS STEP 3 Scenario	Water body	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
			Actual	TWA	Actual	TWA
		0				
		24				
		2d				
		4d				
		7d				
		14d				
		21d				
		28d				
		42d				
		0 h				
		24 h				
		2 d				
		4 d				
		7 d				
		14 d				
		21 d				
		28 d				
		42 d				

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 4 Environmental fate and behaviour

FOCUS STEP 3 Scenario	Water body	Day after overall maximum	PEC _{SW} (µg/L)		PEC _{SED} (µg/kg)	
			Actual	TWA	Actual	TWA
		0 h				
		24 h				
		2 d				
		4 d				
		7 d				
		14 d				
		21 d				
		28 d				
		42 d				

Estimation of concentrations from other routes of exposure (Regulation (EU) N° 284/2013, Annex Part A, point 9.4)

Method of calculation

Not required

PEC

Maximum concentration

Not required

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

Ecotoxicology

Effects on birds and other terrestrial vertebrates (Regulation (EU) N° 283/2013, Annex Part A, point 8.1 and Regulation (EU) N° 284/2013, Annex Part A, point 10.1)

Species	Test substance	Time scale	End point	Toxicity (mg/kg bw per day)
Birds				
<i>C.virginianus</i>	a.s.	Acute	LD ₅₀	>500
<i>C.virginianus</i>	a.s.	Acute	LD ₅₀	500
<i>C.virginianus</i>	a.s.	Acute	LD ₅₀	497
<i>C.virginianus</i>	a.s.	Acute	LD ₅₀	648
<i>C.virginianus</i>	a.s.	Dietary	LD ₅₀	>712.2
<i>A. platyrhynchos</i>	a.s.	Dietary	LD ₅₀	>876.4
<i>C.virginianus</i>	a.s.	Long-term	LD ₅₀ /10	53.3
<i>C.japonica</i>	a.s.	Long-term	NOAEL	70.9
Mammals				
Rat	a.s.	Acute	LD ₅₀	1050
Rat	a.s.	Acute	LD ₅₀	431
Rat	a.s.	Acute	LD ₅₀	775
Rat	a.s.	Acute	LD ₅₀	>700 ¹
Mouse	a.s.	Acute	LD ₅₀	>3393 ²
Rat	a.s.	Long-term	NOAEL	34.5 ³
Endocrine disrupting properties (Annex Part A, points 8.1.5) No data/evidence submitted				
Additional higher tier studies (Annex Part A, points 10.1.1.2): None submitted				
Terrestrial vertebrate wildlife (birds, mammals, reptile and amphibians) (Annex Part A, points 8.1.4, 10.1.3): No data submitted				

¹ Acute exposure neurotoxicity study

² dosed over 1 day duration as opposed to single gavage dose.

³ based upon consideration of available long-term, reproductive and developmental dataset

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

Toxicity/exposure ratios for terrestrial vertebrates (Regulation (EU) N° 284/2013, Part A, Annex point 10.1)

Spring and winter cereals at 1200 g a.s./ha x 1 (BBCH 13-32)

Growth stage	Indicator or focal species	Time scale	DDD (mg/kg bw per day)	TER	Trigger
Screening Step (Birds)					
All	Small omnivorous bird	Acute	190.56	2.8	10
All	Small omnivorous bird	Long-term	41.2	1.3	5
Tier 1 (Birds)					
BBCH 10-29	Small omnivorous bird "lark"	Acute	28.8	18.5	10
BBCH 30-39	Small omnivorous bird "lark"	Acute	14.4	37.0	10
BBCH 10-29	Small omnivorous bird "lark"	Long-term	6.93	7.7	5
BBCH 30-39	Small omnivorous bird "lark"	Long-term	3.43	15.5	5
Screening Step (Mammals)					
All	Small herbivorous mammal	Acute	142.08	5.0	10
All	Small herbivorous mammal	Long-term	30.72	1.1	5
Tier 1 (Mammals)					
BBCH 10-19	Small insectivorous mammal "shrew"	Acute	9.12	77.2	10
BBCH ≥20	Small insectivorous mammal "shrew"	Acute	6.48	108.6	10
Early (shoots)	Large herbivorous mammal "lagomorph"	Acute	50.52	13.9	10
BBCH 10-29	Small omnivorous mammal "mouse"	Acute	20.64	34.1	10
BBCH 30-39	Small omnivorous mammal "mouse"	Acute	10.32	68.2	10
BBCH 10-19	Small insectivorous mammal "shrew"	Long-term	2.67	12.9	5
BBCH ≥20	Small insectivorous mammal "shrew"	Long-term	1.21	28.5	5
Early (shoots)	Large herbivorous mammal "lagomorph"	Long-term	14.18	2.4	5
BBCH 10-29	Small omnivorous mammal "mouse"	Long-term	4.96	7.0	5
BBCH 30-39	Small omnivorous mammal "mouse"	Long-term	2.48	13.9	5
Higher tier (Mammals):					
No higher tier data submitted					
Risk from bioaccumulation and food chain behaviour					
Not required: Log Kow of active substance and metabolites HMCPP and CCPP is <3					
Risk from consumption of contaminated water					

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

Leaf scenario: Not required for representative crops

Puddle scenario, Screening step

Application rate (g a.s./ha)/relevant endpoint <50 (koc<500 L/kg), TER calculation not needed

Toxicity data for all aquatic tested species (Regulation (EU) N° 283/2013, Annex Part A, points 8.2 and Regulation (EU) N° 284/2013 Annex Part A, point 10.2)

Group	Test substance	Time-scale (Test type)	End point	Toxicity ¹
Laboratory tests				
Fish				
<i>S.gairdneri</i>	a.s.	Acute 96 hr (static)	Mortality, LC ₅₀	171 mg a.s./L _(mm)
<i>L.macrochirus</i>	a.s.	Acute 96 hr (static)	Mortality, LC ₅₀	>100 mg a.s./L (nom)
<i>O.mykiss</i>	a.s.	Acute 96 hr (static)	Mortality, LC ₅₀	>93 mg a.s./L _(nom)
<i>L.macrochirus</i>	a.s.	Acute 96 hr (static)	Mortality, LC ₅₀	>93 mg a.s./L (nom)
<i>S.trutti</i>	O-cresol	Acute 96 hr	Mortality, LC ₅₀	6.2 mg met./L ²
<i>O.mykiss</i>	Mecoprop-P K 600 g/L	Acute 96 hr (static)	Mortality, LC ₅₀	>100 mg form./L (>58.7 mg a.s./L (nom))
<i>O.mykiss</i>	a.s.	Chronic (flow- through)	21-day adult NOEC	50 mg a.s./L _(nom)
<i>O.mykiss</i>	a.s.	Chronic (flow- through)	89-day NOEC	11.1 mg a.s./L (mm)
<i>Fish</i>	O-cresol	Chronic	NOEC	1.7 mg met/L ³
Aquatic invertebrates				
<i>D.magna</i>	a.s.	48 h (static)	Mortality, EC ₅₀	>91 mg a.s./L _(mm)
<i>D.magna</i>	a.s.	48 h (static)	Mortality, EC ₅₀	>100 mg a.s./L (mm)
<i>D.magna</i>	O-cresol	48 hr	Mortality, EC ₅₀	5.2 mg met./L ³
<i>D.magna</i>	Mecoprop-P K 600 g/L	48 h (static)	Mortality, EC ₅₀	>100 mg form./L (>58.7 mg a.s./L _(nom))

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

Group	Test substance	Time-scale (Test type)	End point	Toxicity ¹
<i>D.magna</i>	Duplosan KV	48 h (static)	Mortality, EC ₅₀	>1000 mg form./L (>600 mg a.s./L _(nom))
<i>D.magna</i>	Optica MP	48 h (static)	Mortality, EC ₅₀	>272 mg form./L (>186 mg a.s./L _(nom))
<i>D.magna</i>	a.s.	21 d (semi-static)	Reproduction or development, NOEC	50 mg a.s./L _(nom)
<i>D.magna</i>	a.s.	28 d (or semi-static)	Reproduction or development, NOEC	22.2 mg a.s./L _(nom)
<i>C.gigas</i>	a.s.	36-hr (static)	Development EC ₁₀	50.49 mg a.s./L _(nom)
<i>D.magna</i>	O-cresol	Chronic	NOEC	1.0 mg met./L ³
Sediment-dwelling organisms				
No data submitted				
Algae				
<i>P.subcapitata</i>	a.s.	72 h (static)	Growth rate: E _r C ₅₀ (E _r C ₁₀) [Biomass: E _b C ₅₀ (E _b C ₁₀)	>729 mg a.s./L _(nom) 145 mg a.s./L 270 mg a.s./L _(nom) 35 mg a.s./L
<i>A.flos-aquae</i>	a.s.	72 h (static)	Growth rate: E _r C ₅₀ (NOEC) [Biomass: E _b C ₅₀ (NOEC)]	23.9 mg a.s./L _(mm) 7.21 mg a.s./L 16.2 mg a.s./L _(mm) 7.21 mg a.s./L

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

Group	Test substance	Time-scale (Test type)	End point	Toxicity ¹
<i>N.pelliculosa</i>	a.s.	72 h (static)	Growth rate: E _r C ₅₀ E _r C ₁₀ E _r C ₂₀ (NOEC) [Biomass: E _b C ₅₀ E _b C ₁₀ E _b C ₂₀ (NOEC)]	105 mg a.s./L _(mm) 40.2 mg a.s./L 60.9 mg a.s./L 21.1 mg a.s./L 57.8 mg a.s./L _(mm) 24.5 mg a.s./L 34.6 mg a.s./L 10.3 mg a.s./L
<i>S.costatum</i>	a.s.	72 h (static)	Growth rate: E _r C ₅₀ E _r C ₁₀ E _r C ₂₀ (NOEC) [Biomass: E _b C ₅₀ E _b C ₁₀ E _b C ₂₀ (NOEC)]	102 mg a.s./L _(mm) 86 mg a.s./L 92 mg a.s./L 47 mg a.s./L 84 mg a.s./L _(mm) 63 mg a.s./L 70 mg a.s./L 47 mg a.s./L
<i>P.subcapitata</i>	Mecoprop-P K 600 g/L	72 h (static)	Growth rate E _r C ₅₀ E _r C ₁₀ E _r C ₂₀ (NOEC) [Biomass E _b C ₅₀ E _b C ₁₀ E _b C ₂₀ (NOEC)]	>100 mg form./L (>58.7 mg a.s./L _(nom)) >100 mg form./L >100 mg form./L 12.5 mg form./L >100 mg form./L (>58.7 mg a.s./L _(nom)) 19 mg form./L 38 mg form./L 12.5 mg form./L
<i>Green algae</i>	O-cresol	96 h	EC ₅₀	23.9 mg met./L ³

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

Group	Test substance	Time-scale (Test type)	End point	Toxicity ¹
Higher plant				
<i>L.gibba</i>	a.s.	14 d (or semi-static)	Fronds number, EC ₅₀ (NOEC)	1.6 mg a.s./L _(mm) <0.53 mg a.s./L
<i>L.gibba</i>	Mecoprop-P K 600 g/L	7 d (static)	Frond number, E _r C ₅₀ E _r C ₁₀ E _r C ₂₀ (NOEC) Frond number, E _b C ₅₀ E _b C ₁₀ E _b C ₂₀ (NOEC)	59 mg form./L (34.7 mg a.s./L (nom)) 1.9 mg form./L 6.2 mg form./L 1.0 mg prep./L 11 mg form./L (6.46 mg a.s./L (nom)) 0.61 mg form./L 1.6 mg form./L 0.32 mg form./L
<i>M.spicatum</i>	Mecoprop-P K 600 g/L	14 d (static)	Shoot length, E _r C ₅₀ E _r C ₁₀ (NOEC) Shoot length, E _y C ₅₀ E _y C ₁₀ (NOEC)	56.1 µg form./L (26.9 µg a.s./L (nom)) 3.12 µg form./L 19.15 µg form./L 19.6 µg form./L (9.41 µg a.s./L (nom)) 1.15 µg form./L 1.91 µg form./L

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

Group	Test substance	Time-scale (Test type)	End point	Toxicity ¹
<i>M.spicatum</i>	Mecoprop-P K 600 g/L	14 d (static)	Biomass (dry wt.), E _r C ₅₀	69.4 µg form./L (32.9 µg a.s./L (nom))
			E _r C ₁₀ E _r C ₂₀ (NOEC)	<10 µg form./L <10 µg form./L <10 µg form./L
<i>Lemna spp.</i>	O-cresol	7 d	Biomass (wet wt.), E _y C ₅₀	22.4 µg form./L (10.6 µg a.s./L (nom))
			E _y C ₁₀ E _y C ₂₀ (NOEC)	<10 µg form./L <10 µg form./L <10 µg form./L
Further testing on aquatic organisms No Further data submitted				
Potential endocrine disrupting properties (Annex Part A, point 8.2.3) No data submitted				

¹ (nom) nominal concentration; (mm) mean measured concentration; prep.: preparation; a.s.: active substance

² study data from REACH database for chemical

³ QSAR-predicted toxicity

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

Bioconcentration in fish (Annex Part A, point 8.2.2.3)

	Active substance			
logP _{O/W}	-0.19			
Steady-state bioconcentration factor (BCF) (total wet weight)	3.0			
Uptake/depuration kinetics BCF (total wet weight/normalised to 5% lipid content)	-			
Annex VI Trigger for the bioconcentration factor	-			
Clearance time (days) (CT ₅₀)	ca 1			
(CT ₉₀)	-			
Level and nature of residues (%) in organisms after the 14 day depuration phase	-			
Higher tier study				
No further data submitted				

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

Toxicity/exposure ratios for the most sensitive aquatic organisms (Regulation (EU) N° 284/2013, Annex Part A, point 10.2)

FOCUS_{sw} step 1-3 - TERs for Mecoprop-P – Spring cereals at 1200 g a.s./ha x 1

Scenario	PEC global max (µg L)	fish acute	fish chronic	Aquatic invertebrates	Aquatic invertebrates prolonged	Algae	Higher plant	Higher plant
		<i>O.mykiss</i> LC ₅₀	<i>O.mykiss</i> NOEC	<i>D.magna</i> EC ₅₀	<i>D.magna</i> NOEC	<i>N.pelliculosa</i> ErC50	<i>L.gibba</i> EC ₅₀	<i>M.spicatum</i> *** ErC50
		>93 000 µg/L	11 100 µg/L	>91 000 µg/L	22 200 µg/L	23900 µg/L	1600 µg/L	26.9 µg/L
FOCUS Step 1	400.14	232	28	227	55	60	4.0	0.07
FOCUS Step 2								
North Europe	56.47						28	0.48
South Europe	102.32						16	0.26
FOCUS Step 3*								
D1 ditch	13.363							2.0
D1 stream	8.276							3.3
D3 ditch	7.599							3.5
D4 pond	0.263							102.3
D4 stream	6.304							4.3
D5 pond	0.262							102.7
D5 stream	5.958							4.5
R4 stream	32.316							0.8
Trigger**		100	10	100	10	10	10	10

*[Only scenarios where the trigger is not met at FOCUS_{sw} step 1-2 should be included in step 3.]

**[If the Trigger value has been adjusted during the risk assessment, it should always be clear on what basis the risk assessment has been performed, i.e. what the AF value is and for which organism and endpoint it refers.]

*** study with representative product, endpoint expressed in terms of a.s. content

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

FOCUS_{sw} step 4 - TERs for Mecoprop-P – Spring cereals at 1200 g a.s./ha x 1

Organisms *M.spicatum*:

Toxicity endpoint: 29.7 µg/L*

Mitigation options	(m) non-spray buffer zone (corresponding to ≤ 95 % drift reduction)	(m) vegetated buffer strip (corresponding to ≤ 90 % run-off reduction)	PEC _{sw} (µg/L)	TER	Trigger
FOCUS Step 4					
D1 (Ditch)	5	5	13.36	2.2	10
D1 (Stream)	5	5	8.28	3.6	10
D3 (Ditch)	5	5	2.06	14.4	10
D4 (Pond)	5	5	0.26	114.2	10
D4 (Stream)	5	5	2.33	12.7	10
D5 (Pond)	5	5	0.26	114.2	10
D5 (Stream)	5	5	2.19	13.6	10
R4 (Stream)	5	5	1.84	16.1	10

* Refined toxicity endpoint: Geometric mean of 2 equivalent studies

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

FOCUS_{sw} step 1-3 - TERs for Mecoprop-P – Winter cereals at 1200 g a.s./ha x 1

Scenario	PEC global max (µg L)	fish acute	fish chronic	Aquatic invertebrates	Aquatic invertebrates prolonged	Algae	Higher plant	Higher plant
		<i>O.mykiss</i> LC ₅₀	<i>O.mykiss</i> NOEC	<i>D.magna</i> EC ₅₀	<i>D.magna</i> NOEC	<i>N.pelliculosa</i> ErC50	<i>L.gibba</i> EC ₅₀	<i>M.spicatum</i> *** ErC50
		>93 000 µg/L	11 100 µg/L	>91 000 µg/L	22 200 µg/L	23900 µg/L	1600 µg/L	26.9 µg/L
FOCUS Step 1	400.14	232	28	227	55	60	4.0	0.07
FOCUS Step 2								
North Europe	45.01						36	0.60
South Europe	79.39						20	0.34
FOCUS Step 3*								
D1 ditch	158.372							0.2
D1 stream	98.801							0.3
D2 ditch	184.278							0.1
D2 stream	116.438							0.2
D3 ditch	7.583							3.5
D4 pond	0.263							102.3
D4 stream	6.187							4.3
D5 pond	0.262							102.7
D5 stream	5.978							4.5
D6 ditch	8.127							3.3
R1 pond	0.662							40.6
R1 stream	19.599							1.4
R3 stream	44.152							0.6
R4 stream	5.012							5.4
Trigger**		100	10	100	10	10	10	10

*[Only scenarios where the trigger is not met at FOCUS_{sw} step 1-2 should be included in step 3.]

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

**[If the Trigger value has been adjusted during the risk assessment, it should always be clear on what basis the risk assessment has been performed, i.e. what the AF value is and for which organism and endpoint it refers.]

*** study with representative product, endpoint expressed in terms of a.s. content

FOCUS_{sw} step 4 - TERs for Mecoprop-P – Winter cereals at 1200 g a.s./ha x 1

Organisms *M.spicatum*:

Toxicity endpoint: 29.7

µg/L*

Mitigation options	(m) non-spray buffer zone (corresponding to ≤ 95 % drift reduction)	(m) vegetated buffer strip (corresponding to ≤ 90 % run-off reduction)	PEC _{sw} (µg/L)	TER	Trigger
FOCUS Step 4	5	5	158.37	0.2	10
	5	5	98.80	0.3	10
	5	5	184.28	0.2	10
	5	5	116.44	0.3	10
	5	5	2.06	14.4	10
	5	5	0.27	110.0	10
	5	5	2.31	12.9	10
	5	5	0.27	110.0	10
	5	5	2.21	13.4	10
	5	5	2.59	11.5	10
	5	5	0.27	110.0	10
	5	5	1.84	16.1	10
	5	5	2.57	11.6	10
	5	5	1.83	16.2	10

* Refined toxicity endpoint: Geometric mean of 2 equivalent studies

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

FOCUS_{sw} step 1- TERs for metabolite O-cresol – Spring and winter cereals at 1200 g a.s./ha x 1

Scenario	PEC global max (µg L)	fish acute	fish chronic	Aquatic invertebrates	Aquatic invertebrates prolonged	Algae	Higher plant
		<i>s.trutti</i>	<i>Fish</i>	<i>D.magna</i>	<i>D.magna</i>	<i>Green algae</i>	<i>L.spp</i>
		LC ₅₀	NOEC	EC ₅₀	NOEC	EC ₅₀	EC ₅₀
		6200 µg/L	1700 µg/L	5200 µg/L	1000 µg/L	23 900 µg/L	11 900 µg/L
FOCUS Step 1	1.68	3690	1012	3095	595	14226	7083

FOCUS_{sw} step 1- TERs for Representative product – Spring and winter cereals at 1200 g a.s./ha x 1

Scenario	PEC global max (µg L)	fish acute	Aquatic invertebrates	Algae	Higher plant
		<i>O.mykiss</i>	<i>D.magna</i>	<i>P.subcapitata</i>	<i>L.gibba</i>
		LC ₅₀	EC ₅₀	ErC ₅₀	EC ₅₀
		>58 700 µg a.s./L	>58 700 µg a.s./L	>58 700 µg a.s./L	34 700 µg a.s./L
FOCUS Step 1	400.14	147	147	147	87

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

Effects on bees (Regulation (EU) N° 283/2013, Annex Part A, point 8.3.1 and Regulation (EU) N° 284/2013 Annex Part A, point 10.3.1)

Species	Test substance	Time scale/type of endpoint	End point	toxicity
<i>A.mellifera</i>	a.s.	Acute	72 hr Oral toxicity (LD ₅₀)	>83 µg/bee
<i>A.mellifera</i>	a.s.	Acute	72 hr Contact toxicity (LD ₅₀)	> 83 µg/bee
<i>A.mellifera</i>	a.s.	Acute (larval)	7 d LD ₅₀ 7 d LD ₁₀ 7 d NOED	89.4 µg/bee 43.7 µg/bee 49.6 µg/bee
<i>A.mellifera</i>	Mecoprop-P K 600 g/L	Field study (brood development)	27 d brood effects	No adverse effects at 0.15 g a.s./hive No statistically significant effects at 3.75 g a.s./hive

Risk assessment for – Winter and spring cereals at 1200 g a.s./ha x 1

Species	Test substance	Risk quotient	HQ	Trigger
<i>A.mellifera</i>	a.s.	HQcontact	<14.5	50
<i>A.mellifera</i>	a.s.	HQoral	<14.5	50

Effects on other arthropod species (Regulation (EU) N° 283/2013, Annex Part A, point 8.3.2 and Regulation (EU) N° 284/2013 Annex Part A, point 10.3.2)

Laboratory tests with standard sensitive species

Species	Test Substance	End point	Toxicity
<i>Typhlodromus pyri</i>	Mecoprop-P K 600 g/L	Mortality, LR ₅₀ Reproduction	>1468 g a.s./ha 28.1% effects at 1468 g a.s./ha
<i>Aphidius rhopalosiphi</i>	Mecoprop-P K 600 g/L	Mortality, LR ₅₀ Reproduction	447.6 g a.s./ha -9.5% effects at 293.7 g a.s./ha
Additional species			

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

Species	Test Substance	End point	Toxicity
<i>Aleochara bilineata</i>	Optica MPK	<u>Artificial substrate:</u> Mortality	Not reported
		Reproduction	2.8% effects at 1064 g a.s./ha

First tier risk assessment for - Winter and spring cereals at 1200 g a.s./ha x 1

Test substance	Species	Effect (LR ₅₀ g/ha)	HQ in-field	HQ off-field ¹ (1m)	Trigger
Mecoprop-P K 600 g/L	<i>Typhlodromus pyri</i>	>1468	<0.82	<0.03	2
Mecoprop-P K 600 g/L	<i>Aphidius rhopalosiphi</i>	447.6	2.7	0.07	2

¹indicate distance assumed to calculate the drift rate

Extended laboratory tests, aged residue tests

Species	Life stage	Test substance, substrate	Time scale	Dose (g a.s./ha) ^{1,2}	End point(s)	% effect ³	ER ₅₀
<i>A.rhopalosiphi</i>	Adult	Mecoprop-P K 600 g/L 3D natural substrate	48 hr exposure	Initial residues 1457	Mortality, reproduction	13.3% 4.6%	-
<i>C.carnea</i>	Adult	Mecoprop-P K 600 g/L 2D natural substrate	Larval phase exposure	Initial residues 1457	Mortality, reproduction	2.8% -4.5%	-
<i>A.rhopalosiphi</i>	Larvae	BAS 037 29 H 3D natural substrate	48 hr exposure	Initial residues 1800	Mortality, reproduction	0% 7.7%	-

¹ indicate whether initial or aged residues

² for preparations indicate whether dose is expressed in units of a.s. or preparation

³ positive percentages relate to adverse effects

First tier risk assessment for - Winter and spring cereals at 1200 g a.s./ha x 1 based on extended lab test or aged residue tests

Species	50% effects (g a.s./ha)	In-field rate (g a.s./ha)	Off-field rate ¹ (g a.s./ha)
<i>A.rhopalosiphi</i>	>1457	1200	332.4 (3D)
<i>C.carnea</i>	>1457	1200	33.24 (2D)
<i>A.rhopalosiphi</i>	>1800	1200	332.4 (3D)
<i>A.bilineata</i>	>1064*	1200	33.24 (2D)

¹indicate distance assumed to calculate the drift rate and if 3D or 2D.

*Low in-field risk concluded due to low level of effects at limit rate tested.

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

Semi-field tests
No data submitted
Field studies
No data submitted
Additional specific test
No data submitted

Effects on non-target soil meso- and macro fauna; effects on soil nitrogen transformation (Regulation (EU) N° 283/2013, Annex Part A, points 8.4, 8.5, and Regulation (EU) N° 284/2013 Annex Part A, points 10.4, 10.5)

Test organism	Test substance	Application method of test a.s./ OM ¹	Time scale	End point	Toxicity (mg a.s./kg soil dry wt.)
Earthworms					
<i>E.fetida</i>	a.s.	Soil incorporation (10% OM)	Chronic	Growth, reproduction, behaviour	EC ₁₀ 9.0 EC ₂₀ 26.4 NOEC 10.8
Other soil macroorganisms					
<i>Folsomia candida</i>	Mecoprop-P K 600 g/L	Soil incorporation (5% OM)	Chronic	Mortality, reproduction	EC ₁₀ 44.0 EC ₂₀ 68.6 NOEC 52.9
<i>Hypoaspis aculeifer</i>	Mecoprop-P K 600 g/L	Soil incorporation (5% OM)	Chronic	Mortality, reproduction	EC ₁₀ >1000 EC ₂₀ >1000 NOEC 1000

¹To indicate whether the test substance was oversprayed/to indicate the organic content of the test soil (e.g. 5 % or 10 %).

Higher tier testing (e.g. modelling or field studies): No data submitted
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Nitrogen transformation	No valid data submitted
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List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

Toxicity/exposure ratios for soil organisms

Winter and spring cereals at 1200 g a.s./ha x 1

Test organism	Test substance	Time scale	Soil PEC ¹	TER	Trigger
Earthworms					
<i>E.fetida</i>	a.s.	Chronic	1.600	6.8	5
Other soil macroorganisms					
<i>Folsomia candida</i>	Mecoprop-P K 600 g/L	Chronic	1.600	33	5
<i>Hypoaspis aculeifer</i>	Mecoprop-P K 600 g/L	Chronic	1.600	625	5

¹maximum initial PEC soil was used

Effects on terrestrial non target higher plants (Regulation (EU) N° 283/2013, Annex Part A, point 8.6 and Regulation (EU) N° 284/2013 Annex Part A, point 10.6)

Screening data

Not required for herbicides or plant growth regulators as ER ₅₀ tests should be provided

Laboratory dose response tests

Species	Test substance	ER ₅₀ (g a.s./ha) ² vegetative vigour	ER ₅₀ (g a.s./ha) ² emergence	Exposure ¹ (g a.s./ha) ²	TER	Trigger
<i>Brassica napus</i> (oilseed rape)	Mecoprop-P K 600 g/L	-	19.2	33.2 (1m) 6.84 (5m) 3.48 (10m)	0.58 2.80 5.52	5
<i>Cucumis sativus</i> (cucumber)	Mecoprop-P K 600 g/L	19.9	-	33.2 (1m) 6.84 (5m) 3.48 (10m)	0.60 2.91 5.72	5
10 distinct species	Mecoprop-P K 600 g/L	Median HC ₅ = 22.6	-	33.2 (1m) 6.84 (5m)	0.68 3.30	1
10 distinct species	Mecoprop-P K 600 g/L	-	Median HC ₅ = 19.8	33.2 (1m) 6.84 (5m)	0.60 2.89	1
Extended laboratory studies : No data submitted Semi-field and field test: No valid data submitted						

¹Exposure has been estimated based on Ganzelmeier drift data

² for preparations indicate whether dose is expressed in units of a.s. or preparation

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

Effects on biological methods for sewage treatment (Regulation (EU) N° 283/2013, Annex Part A, point 8.8)

Test type/organism	end point
Activated sludge	EC ₅₀ = 319 mg a.s./L

Monitoring data (Regulation (EU) N° 283/2013, Annex Part A, point 8.9 and Regulation (EU) N° 284/2013, Annex Part A, point 10.8)

Available monitoring data concerning adverse effect of the a.s.
Available monitoring data concerning effect of the PPP.

Definition of the residue for monitoring (Regulation (EU) N° 283/2013, Annex Part A, point 7.4.2) Ecotoxicologically relevant compounds¹

Compartment	
soil	Mecoprop-P
water	Mecoprop-P
sediment	Mecoprop-P
groundwater	Mecoprop-P

¹ metabolites are considered relevant when, based on the risk assessment, they pose a risk comparable or higher than the parent

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

Classification and labelling with regard to ecotoxicological data (Regulation (EU) N° 283/2013, Annex Part A, Section 10)

Substance

Harmonised classification according to Regulation (EC) No 1272/2008 and its Adaptations to Technical Process [Table 3.1 of Annex VI of Regulation (EC) No 1272/2008 as amended]¹⁵:

Mecoprop-P

The lowest relevant LC/EC50 value used in support of the active substance is the ErC50 from testing with the aquatic plant *Myriophyllum spicatum*. The ErC50 is 0.0269 mg a.s./L. This is lower than the trigger for acute classification of 1.0 mg/L, meaning that the classification Acute category 1 (H400) - 'Very toxic to aquatic life' is triggered. The related acute M-factor is 10.

In addition, the lowest NOEC value, also from the above study, is 0.00937 mg a.s./L (growth rate inhibition).

According to the environmental fate data the active substance is classified as readily biodegradable. As this lowest NOEC is less than 0.01 mg a.s./L and the substance is readily biodegradable the classification Chronic category 1 (H410) 'very toxic to aquatic life with long lasting effects' is triggered. The related chronic M-factor is 1.

Pictogram : GHS09

Signal word: 'Warning'

Hazard statement : H400 - 'Very toxic to aquatic life' (M-factor 10)

H410 - 'Very toxic to aquatic life with long lasting effects' (M-factor 1)

P273: Avoid release to the environment.

P391: Collect spillage.

P501: Dispose of contents/container to... in accordance with local/regional/national/international regulation (to be specified).

¹⁵ Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. OJ L 353, 31.12.2008, 1-1355.

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Section 5 Ecotoxicology

‘Mecoprop-P K 600 g/L’:

The lowest relevant LC/EC50 value used in support of the formulation is the ErC50 from testing with the aquatic plant *Myriophyllum spicatum*. This is lower than the trigger for acute classification of 1.0 mg/L, meaning that the classification Acute category 1 (H400) - ‘Very toxic to aquatic life’ is triggered.

The lowest NOEC value, also from the above study, is 0.01915 mg form’n/L (growth rate inhibition). According to the environmental fate data the active substance is classified as readily biodegradable. As this lowest NOEC between 0.01 – 0.1 mg/L and the substance is readily biodegradable the classification Chronic category 2 (H411) ‘Toxic to aquatic life with long lasting effects’ is triggered.

Pictogram : GHS09

Signal word: ‘Warning’

Hazard statement : H400 - ‘Very toxic to aquatic life’

H411 - ‘Toxic to aquatic life with long lasting effects’

P273: Avoid release to the environment.

P391: Collect spillage.

P501: Dispose of contents/container to ... in accordance with local/regional/national/international regulation (to be specified).

Peer review proposal¹⁶ for harmonised classification according to Regulation (EC) No 1272/2008:

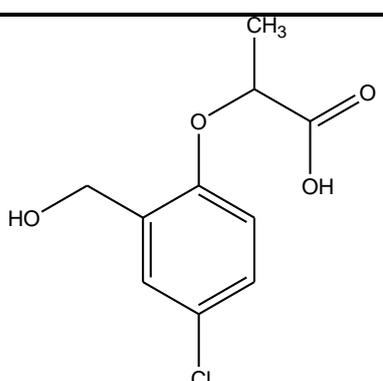
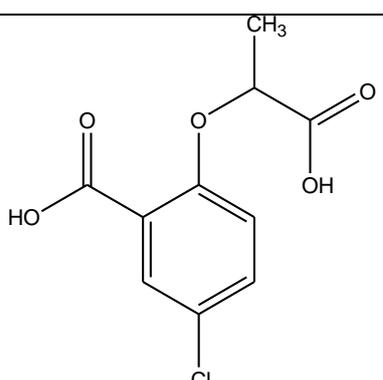
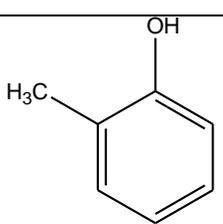
¹⁶ It should be noted that harmonised classification and labelling is formally proposed and decided in accordance with Regulation (EC) No 1272/2008. Proposals for classification made in the context of the evaluation procedure under Regulation (EC) No 1107/2009 are not formal proposals.

List of end points

Rapporteur Member State	Month and year	Active substance and Plant Protection Product (Name)
UK	March 2016	Mecoprop-P Mecoprop-P 600 K g/L

Appendix

Used compounds code(s)

Code/Trivial name*	IUPAC name/SMILES notation	Structural formula
HMCPP	2-(2-hydroxymethyl-4-chlorophenoxy)propionic acid	
CCPP	2-(2-carboxy-4-chlorophenoxy)propionic acid	
O-cresol	2-methylphenol	

* The compound code / trivial name in bold is the name used in the list of endpoints.