Fludioxonil

NOTIFICATION OF AN ACTIVE SUBSTANCE UNDER COMMISSION REGULATION (EU) 844/2012

DOCUMENT M-CA, Section 9

Ecotoxicological Studies

LITERATURE DATA

Version history[1]

Date	Data points containing amendments or additions and brief description	Document identifier and version number
18/1/17	In response to questions from the RMS: CA 9.3 & 9.6 summary of results table amended to include total values CA 9.6 Additional details on the rapid assessment are provided in the results summary. CA 9.6-4 Literature references have been provided in KCA/LCA where copyright permits. All amendments are highlighted in yellow.	CGA173506_11758 11 April 2016 updated 18/1/17

[1] It is suggested that applicants adopt a similar approach to showing revisions and version history as outlined in SANCO/10180/2013 Chapter 4 How to revise an Assessment Report

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CA 9 LITERATURE DATA

CA 9.1 Title

This document is a Literature Review Report for fludioxonil, metabolites and EU representative formulations A8207M (CELEST®) and A8240D (GEOXE®).

CA 9.2 Author(s) of the review

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CA 9.3 Summary: A brief summary indicating the purpose of the report, the methodology employed and the results obtained

This report summarises the search for "scientific peer-reviewed open literature on fludioxonil and its potentially relevant metabolites dealing with side effects on health and published within the last ten years before the date of submission of the dossier" in accordance with Article 8(5) of Regulation (EC) No. 1107/2009.

The exact search strategy is detailed in the tables CA 9.5-1 to -5 but a summary of the methodology employed is given below.

1. A very broad search was conducted in 18 scientific source databases (detailed in table CA 9.5-2) for fludioxonil and its metabolites using the search terms listed in CA 9.5.1.
2. Duplicates titles from between the data bases were automatically removed from the output.
3. A rapid assessment of the titles was conducted to remove any additional duplicates and any obviously irrelevant titles (where enough information was available from the title alone).
4. A further rapid assessment was conducted using summary abstracts and any clearly irrelevant titles were removed.
5. A detailed assessment of the full-text documents for the remaining titles was conducted using the criteria developed for study relevance (see table CA 9.4.2-1)
6. Any relevant papers were highlighted and assessed for reliability.

An overview of the results is summarised in the table below and further details are provided in Section 9.5.

Data requirement(s) captured in the search	Number (Initial Search)	Number (Top-Up Search)	Total number
Total number of *summary records* retrieved after *all** searches of peer-reviewed literature (excluding duplicates)	361	95	456
Number of *summary records* excluded from the search results after rapid assessment for relevance**	353	87	440
Total number of *full-text* documents assessed in detail*	8	8	16
Number of *studies* excluded from further consideration after detailed assessment for relevance	8	8	16
Number of *studies* not excluded for relevance after detailed assessment (i.e. relevant studies and studies of unclear relevance)	0	0	0

*both from bibliographic databases and other sources of peer-reviewed literature
**aligned with EFSA Journal 2011; 9(2):2092: rapid assessment means exclusion of "obviously irrelevant records" based on titles, and titles plus abstracts

CA 9.4 Protocol

CA 9.4.1 Statement of the objective of the review

The review has the objective of identifying "scientific peer-reviewed open literature on fludioxonil and its potentially relevant metabolites dealing with side effects on health and published within the last ten years before the date of submission of the dossier" in accordance with Article 8(5) of Regulation (EC) No. 1107/2009.

CA 9.4.2 Criteria for relevance with which decisions to select studies in the dossier were made

Table 9.4.2-1: List of Criteria for relevance for each data requirement

Data requirements(s) (indicated by the correspondent CA data point (s))	Criteria for relevance
Ecotoxicological studies (CA 8.1 to 8.15)	Laboratory Studies 1. Well defined test material (including purity/content) 2. Number of organisms per group sufficient to establish a statistical significance 3. Applicable test species 4. Test organisms are not previously exposed to the test material or other contaminants 5. Several dose levels tested, at least 3, including a negative control, to establish a dose-response, unless the study design is specifically a limit test. Control must be run concurrently with treatments and mortality to be within test validity criteria. 6. Exposure route is clearly defined, is environmentally relevant and, if appropriate, suitably quantified. 7. If conducted, analytical confirmation of dosing or sufficient information provided to determine concentrations were within acceptable range (e.g. 80-120%) of nominal targets. 8. Effects are related to single test item, and a quantitative relationship exists between the reported endpoint and risk assessment endpoints of growth, mortality, behaviour and/or reproduction. 9. Sufficient experimental information provided to substantiate and evaluate whether the study conclusions and endpoints are robust. 10. Study conditions should not differ significantly from recommended protocols. 11. Study conditions should not interfere with the interpretation of the study

Data requirements(s) (indicated by the correspondent CA data point (s))	Criteria for relevance
	results. Field Studies 12. Appropriate and relevant geoclimatic conditions (setting), appropriate application method and rates (exposure) and observation data (biological relevance) to derive endpoints. 13. Well defined test material (including purity/content) 14. Applicable test species 15. Exposure route is clearly defined, is environmentally relevant and, if appropriate, suitably quantified. 16. Sufficient experimental information provided to substantiate and evaluate whether the study conclusions and endpoints are robust (e.g. pre-treatment details, characterisation of physico-chemical parameters, replication, statistical methods and appropriate sampling regime). 17. Study conditions should not differ significantly from recommended protocols, if available for field study. Study conditions should not interfere with the interpretation of the study results

* Recommended protocols under each data point include but are not limited to those listed in the Commission Communications 2013/C 95/01 and 2013/C 95/02

CA 9.5 Search methods

Date of initial search	27 May 2014
Date of most recent update to search	28 October 2015
Date span of the search	10 years

An additional search was also conducted on the new metabolite SYN454245. Details are given in the table below. The search returned no results.

Date of initial search (SYN545245)	03 February 2016
Date of most recent update to search	Not applicable
Date span of the search	Unlimited

Table 9.5-1: Detailed Search Parameters for Ecotoxicological studies (CA 8.1 to 8.15)

Search Strategy
Compound and metabolite names: L1 QUE (131341-86-1 OR CGA173506 OR (CGA(W)173506) OR CELESTE) L2 QUE (FLUDIOXONIL OR (MAXIM(W)(4FS OR PSP)) OR (BERET(W)GOLD)) L3 QUE (GEOXE OR MAXIM OR SAPHIRE OR SAVIOR OR SCHOLAR OR SEIBIA) L4 QUE ((L3(10A)(PESTICID? OR FUNGICID?)) OR 1135442-63-5) L5 QUE (L1 OR L2 OR L4) **FLUDIOXONIL** L6 QUE (1418095-12-1 OR 126120-85-2 OR 1418095-13-2 OR 166982-10-1) L7 QUE (CGA339833 OR (CGA(W)(339833 OR 192155)) OR CGA192155) L8 QUE (CGA344623 OR (CGA(W)(344623 OR 265378)) OR CGA265378) L9 QUE (L6 OR L7 OR L8) **METABOLITES** L10 QUE L5 OR L9

Search Strategy

Ecotoxicological search:

```
L1              QUE  (RIPARIAN? OR REPTILE? OR SNAKE? OR LIZARD?)
L2              QUE  (TORTOISE? OR TURTLE? OR TERRAPIN? OR CROCODIL?)
L3              QUE  (ALLIGATOR? OR CAIMAN? OR GHARIAL? OR HOVERFLIES)
L4              QUE  ((MEADOW#(W)VOLE#) OR PSEUDOKIRSCHNERIELLA)
L5              QUE  (RHAPHIDOCELIS OR NITZSCHIA OR CYCLOTELLA OR
MICROCYSTIS)
L6              QUE  (OSCILLATORIA OR APHANIZOMENON OR ANKISTRODESMUS)
L7              QUE  (TEILINGRIA OR MONORAPHIDIUM OR RADIOCOCCACAE OR
                     TETRASPORALES)
L8              QUE  (TETRAEDRON OR TREUBARIA OR WILLEA OR COSMOCLADIUM)
L9              QUE  (HYPOASPIS OR (SOIL(3A)MICROORGAN?) OR ECHINOCHLOA OR
                     SPARTINA)
L10             QUE  (SALVINIA OR NAJAS OR CALLITRICHE OR MYOSOTIS OR
STRATIOTES)
L11             QUE  (HIPPURUS OR PERSICARIA OR CLOEON? OR CORBICULA?)
L12             QUE  (NEOCARIDINIA? OR NEOCARIDINA? OR MYSID? OR CICHLIDAE)
L13             QUE  (CICHLID# OR LEPOMIS? OR SERRANIDAE OR PERCIFORMES)
L14             QUE  (ICTALURUS? OR POECILIA? OR ORYZIAS? OR GASTEROSTEUS?)
L15             QUE  (GASTEROSTEIDAE OR SALVELINUS OR BRACHYDANIO? OR
CARASSIUS
                ?)
L16             QUE  (MISGUMUS? OR CYPRINODON? OR FUNDULUS? OR MISGURNUS?)
L17             QUE  (BREAM OR ROTIFER# OR GAMMARUS OR GAMMARID? OR MAYFLY?)
L18             QUE  (BIVALVE# OR MUSSEL# OR MOLLUSK# OR MOLLUSC# OR BUFO)
L19             QUE  (NEWT# OR SCALLOP# OR CLAM# OR GAMBUSIA OR OREOCHROMIS)
L20             QUE  (OSTRAC? OR TUBIFEX? OR TURBELLARIA OR COPEPODA)
L21             QUE  (PREDACE? OR PREDACI? OR PARASITOID? OR APIS OR APIDAE)
L22             QUE  (BOMBUS OR BOMBINAE OR WORM# OR LUMBRICIDAE OR
LUMBRICUS)
L23             QUE  (ALLOBOPHORA? OR DENDROBAENA? OR APORRECTODEA? OR
                     DENDRODRILUS?)
L24             QUE  (EISENIA? OR OCTOLASION? OR (LACE(W)WING#) OR
NEUROPTER?)
L25             QUE  (CARABID? OR CARBUS OR STAPHYLINID? OR COCCINEL? OR
ADALIA?)
L26             QUE  (STETHORUS? OR SCYMNUS? OR WASP# OR VESPIDAE OR
SPHECOIDEA)
L27             QUE  (SPHECIDAE OR STIZIDAE OR OPIUS OR (ICHNEUMON(W)FL?))
L28             QUE  (ICHNEUMONID? OR BRACONID? OR CHALCID? OR CYNIP? OR
APHIDI?)
L29             QUE  (EUCOILID? OR IBALIID? OR FIGITID? OR EURYTOM? OR
TORYM?)
L30             QUE  (ORYM? OR EUCHARIT? OR PERILAMP? OR PTEROMAL? OR
CHRYSOLAMP?)
L31             QUE  (EUPELM? OR ENCYRT? OR SIGNIPHOR? OR APHELIN? OR
ELASMID?)
L32             QUE  (ELASMUS OR TETRACAMP? OR MYMAR? OR HELOR? OR
PROCTOTRUP?)
L33             QUE  (DIAPRI? OR SCELION? OR PLATYGASTR? OR PLATYGASTER?)
L34             QUE  (CERAPHRON? OR MEGASPIL? OR ARANE? OR OPILION? OR
PHALANG?)
L35             QUE  (ARACHNID? OR HARVESTM? OR DADDYLONGLEG? OR
(DADDY(W)LONG
                     (W)LEG?))
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Search Strategy		
L36	QUE	((DADDY(W)LONGLEG?) OR COLLEMB? OR (SPRING(W)TAIL?) OR CYDNODROMUS?)
L37	QUE	(PARDOSA? OR ORIUS? OR TYPHLODROM? OR PHYTOSEIULUS? OR SYRPHID?)
L38	QUE	(METASYRPHUS? OR SYRPHUS? OR EUPEODES? OR EPISYRPHUS? OR SYRPHIAN?)
L39	QUE	(EPISTROPHE? OR AMBLYSEIUS? OR POECILUS? OR TRECHUS? OR BEMBIDION?)
L40	QUE	(NEBRIA? OR PTEROSTICHUS? OR CALOSOMA? OR TACHYPORUS? OR NABIDAE?)
L41	QUE	(GEOCORIS? OR HYMENOPT? OR HAEMATOLOECHA? OR CHRYSOPID? OR SYMPHYTA?)
L42	QUE	(OULEMA? OR APHYTIS? OR BATHYPLECTES? OR LINPHIIDAE? OR LYNPHIIDAE?)
L43	QUE	(LINYPHIIDAE? OR ERIGONE? OR BATHYPHANTES? OR MEIONETA? OR OEDOTHORAX?)
L44	QUE	(LEPTHYPHANTES? OR LYCOSID? OR LYCOSA? OR CHRYSOPA? OR DACNUSA?)
L45	QUE	(CYRTORHINUS? OR CRYPTOLAEMUS? OR ZETZELLIA? OR LEPTOMASTIX?)
L46	QUE	(TRICHOGRAMMA? OR ENCARSIA? OR MACROLOPHUS? OR CHRYSOPERLA?)
L47	QUE	(ALEOCHARA? OR CHRYSOPID# OR CHRYSOPIDAE OR DIABROTICA)
L48	QUE	(PALEXORISTA? OR MAMMAL## OR ANIMAL? OR RABBIT? OR RODENT#)
L49	QUE	(BLACKBIRD# OR (BLACK(W)BIRD#) OR ((TURDUS OR T)(W)MERULA))
L50	QUE	(CHAFFINCH? OR ((FRINGILLA OR F)(W)COELEBS) OR GREENFINCH?)
L51	QUE	(((CARDUELIS OR C)(W)CHLORIS) OR SONGTHRUSH?)
L52	QUE	((SONG(W)THRUSH?) OR ((TURDUS OR T)(W)PHILOMELOS) OR WREN#)
L53	QUE	(((TROGLODYTES OR T)(W)TROGLODYTES) OR (WILLOW(W)WARBLER#))
L54	QUE	(((PHYLLOSCOPUS OR P)(W)TROCHILUS) OR (GREAT(W)TIT#))
L55	QUE	(((PARUS OR P)(W)MAJOR) OR ROBIN# OR GOLDFINCH?)
L56	QUE	(((ERITHACUS OR E)(W)RUBECULA) OR DUNNOCK#)
L57	QUE	(((CARDUELIS OR C)(W)CARDUELIS) OR LINNET#)
L58	QUE	(((PRUNELLA OR P)(W)MODULARIS) OR SKYLARK# OR (SKY(W)LARK#))
L59	QUE	((HEDGE(W)(SPARROW# OR ACCENTOR#)))
L60	QUE	(((CARDUELIS OR C)(W)CANNABINA) OR ((ALAUDA OR A)(W)ARVENSIS))
L61	QUE	((RED(W)LEGGED(W)PARTRIDGE#) OR ((ALECTORIS OR A)(W)RUFA))
L62	QUE	((MEADOW(W)PIPIT#) OR MEADOWPIPIT# OR ((ANTHUS OR A)(W)PRATENSIS))
L63	QUE	(LAPWING# OR ((VANELLUS OR V)(W)VANELLUS) OR PEEWIT#)
L64	QUE	(STARLING# OR ((STURNUS OR S)(W)VULGARIS))
L65	QUE	((TURTLE(W)DOVE#) OR ((STREPTOPELIA OR S)(W)TURTUR))
L66	QUE	(YELLOWHAMMER# OR (YELLOW(W)HAMMER#) OR (YELLOW(W)WAGTAIL#))
L67	QUE	(((EMBERIZA OR E)(W)CITRINELLA) OR (YELLOW(W)WAG(W)TAIL#))

Search Strategy

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L68             QUE  (((MOTACILLA OR M)(W)FLAVA) OR
(FAN(W)TAILED(W)WARBLER#))
L69             QUE  ((GREY(W)LAG(W)G!!SE) OR ((ANSER OR A)(W)ANSER))
L70             QUE  (REEDBUNTING# OR (REED(W)BUNTING#) OR ((EMBERIZA OR
E)(W)
                     SCHOENICLUS))
L71             QUE  (CHAFFINCH? OR BLUETIT? OR (BLUE(W)TIT?))
L72             QUE  (((PARUS OR P)(W)CAERULEUS) OR (SYLVIA(W)COMMUNIS))
L73             QUE  (((GALERIDA OR G)(W)CRISTATA) OR (TREE(W)SPARROW#))
L74             QUE  (((COTURNIX OR C)(W)COTURNIX) OR (GREY(W)PARTRIDGE#))
L75             QUE  (((PERDIX OR P)(W)PERDIX) OR ((PHASIANUS OR
P)(W)COLCHICUS))
L76             QUE  (((MILIARIA OR M)(W)CALANDRA?) OR GREYLAGG!!SE)
L77             QUE  ((GREYLAG(W)G!!SE) OR ((COLUMBA OR C)(W)PALUMBUS?))
L78             QUE  (((STREPTOPELIA OR S)(W)(ORIENTALIS? OR RISORIA?)))
L79             QUE  (((MOTACILLA OR M)(W)ALBA?) OR (CRESTED(W)LARK#))
L80             QUE  ((WHITE(W)WAGTAIL#) OR (WOOD(W)PIGEON#) OR
(BIRD(W)LIFE))
L81             QUE  ((SONG(W)BIRD#) OR VANELLUS? OR (PEE(W)WIT#))
L82             QUE  (AVIFAUNA? OR (AVI(W)FAUNA?) OR SONGBIRD?)
L83             QUE  (ORNITHOLOG? OR PASSERINE? OR WOODPIGEON#)
L84             QUE  (((PASSER OR P)(W)MONTANUS) OR QUAIL# OR
(CALANDRA(W)LARK#))
L85             QUE  (CISTICOLA? OR (Z(W)CISTICOLA?) OR BIRDLIFE)
L86             QUE  (GEESE OR GOOSE OR SPARROWS OR PIGEONS OR LARK#)
L87             QUE  (WARBLER# OR PARTRIDGE# OR BUNTING# OR WAGTAIL#)
L88             QUE  (WHITETHROAT# OR PIED# OR (WHITE(W)THROAT#))
L89             QUE  ((FORAGING OR FARMLAND OR GRASSLAND)(3A)BIRD#)
L90             QUE  (BLUEBIRD# OR (ROCK(W)PTARMIGAN#) OR
(BLACK(W)REDSTART#))
L91             QUE  ((PREDATOR? OR NONTARGET? OR (NON(W)TARGET))(3A)BIRD#)
L92             QUE  ((CORN(W)BUNTING#) OR SERINS OR SERINUS)
L93             QUE  (L49 OR L50 OR L51 OR L52 OR L53 OR L54 OR L55 OR L56 OR
L
                57 OR L58 OR L59 OR L60 OR L61 OR L62 OR L63 OR L64 OR L65 OR
L
                66 OR L67 OR L68 OR L69 OR L70 OR L71 OR L72 OR L73 OR L74 OR
L
                75 OR L76 OR L77 OR L78 OR L79 OR L80 OR L81 OR L82 OR L83 OR
L
                84 OR L85 OR L86 OR L87 OR L88 OR L89 OR L90 OR L91 OR L92)
L94             QUE  L93 NOT (JAPANESE? OR JAPONICA?)
L95             QUE  (((SMALL OR WILD)(3A)MAMMAL#) OR (WILD(3A)ANIMAL?))
L96             QUE  (VOLE# OR GLIS OR DORMOUSE OR DORMICE OR ELIOMY#)
L97             QUE  (LEROT# OR LAGOMORPH# OR LEPORID? OR LEPUS OR
ORYCTOLAGUS?)
L98             QUE  (HARE# OR SORICIDAE? OR SOREX? OR NEOMY# OR CROCIDURA?)
L99             QUE  (SHREW# OR WOODMOUSE OR WOODMICE OR APODEMUS? OR
MICROTUS?)
L100            QUE  (CLETHRIONOMYS? OR CRICETIDAE? OR MICROTIN?)
L101            QUE  (RAPTOR# OR MARMOSET# OR GOPHER# OR GRASSCUTTER#)
L102            QUE  ((PREDATOR? OR NONTARGET? OR
(NON(W)TARGET?))(3A)MAMMAL#)
L103            QUE  ((WOOD(W)(MOUSE OR MICE)) OR ARVICOLA?)
L104            QUE  (MEADOW#(W)VOLE#)
L105            QUE  (L95 OR L96 OR L97 OR L98 OR L99 OR L100 OR L101 OR L102
                     OR L103 OR L104)
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Search Strategy		
L106	QUE	(ECOTOX? OR LC50 OR ((LC OR EC OR LR)(W)50) OR EC50 OR LR50)
L107	QUE	(ECO OR ECOL OR ECOLOG? OR ENV OR ENVIRONM? OR AQUATIC?)
L108	QUE	(L107(5A)(TOX? OR RISK? OR IMPACT? OR EFFECT?))
L109	QUE	(AQUATIC? OR FRESHWATER? OR (FRESH(W)WATER?))
L110	QUE	(FLORA OR FAUNA OR BIOTA OR ORGANISM? OR INSECT?)
L111	QUE	(ENVIRONM? OR LIFE OR INVERTEB? OR CRUSTACE? OR SPECIES)
L112	QUE	(ENTOMOFAUNA OR (ENTOMO(W)FAUNA))
L113	QUE	(L109(5A)(L110 OR L111 OR L112))
L114	QUE	(MAGNA? OR (D(W)MAGNA?) OR CHIRONOM? OR BRACHIONUS?)
L115	QUE	(LIMNEA? OR CRASSOSTREA? OR ALGA# OR FISH OR FISHES)
L116	QUE	(ONCORHYNCHUS? OR SALMONIDAE? OR CYPRINUS? OR CYPRINID?)
L117	QUE	(PIMEPHALES? OR PISCES OR TROUT OR SUNFISH? OR CARP)
L118	QUE	(MINNOW? OR (F(W)MINNOW?) OR CATFISH? OR ZEBRAFISH?)
L119	QUE	(GOLDFISH? OR (ZEBRA(W)DANIO#) OR GUPPY OR GUPPIES)
L120	QUE	(KILLFISH? OR FATHEAD? OR BLUEGILL? OR SALMON#)
L121	QUE	(THUNDERFISH? OR (WATER(W)(FLY OR FLEA?)) OR WATERFLEA?)
L122	QUE	(FROG# OR AMPHIBIA? OR SHRIMP# OR PRAWN# OR CRAB# OR TOAD#)
L123	QUE	(TADPOLE# OR CRAYFISH? OR SHELLFISH? OR LOBSTER#)
L124	QUE	(OYSTER# OR SNAIL# OR RANA OR RANIDAE? OR PLANKTON?)
L125	QUE	L106 OR L108
L126	QUE	((NONTARGET? OR (NON(W)TARGET?))(5A)(PLANT? OR FLORA?))
L127	QUE	((AQUATIC(3A)(PLANT? OR (PHYTO(W)TOX?) OR PHYTOTOX?)))
L128	QUE	(SEDIMENT? OR HYDROSOIL? OR DUCKWEED? OR PONDWEED?)
L129	QUE	(((DUCK OR POND)(W)WEED#) OR MACROPHYT? OR PERIPHYTON?)
L130	QUE	(POTAMOGETON? OR CHAROPHYTA? OR ELODEA? OR HYDROCHARITA?)
L131	QUE	(CERATOPHYL? OR CHLAMYDOMON? OR SELENASTRUM? OR CHLORELLA?)
L132	QUE	(SCENEDESMUS? OR SKELETONEMA? OR NAVICULA? OR ANABAENA?)
L133	QUE	(MYRIOPHYLLUM? OR GLYCERIA?)
L134	QUE	(NONTARGET? OR (NON(W)TARGET?) OR BENEFICIAL?)
L135	QUE	(EFFECT? OR INVERTEB? OR ORGANISM? OR ARTHROPOD? OR INSECT?)
L136	QUE	(FAUNA OR SPECIES OR (ENTOMO(W)FAUNA?) OR ENTOMOFAUNA?)
L137	QUE	((L134(5A)(L135 OR L136)))
L138	QUE	(PREDAT? OR (NATURAL(W)ENEM?) OR BEE OR BEES OR HONEYBEE#)
L139	QUE	(BUMBLEBEE# OR ((HONEY OR BUMBLE)(W)BEE#) OR EARTHWORM?)
L140	QUE	((EARTH(W)WORM?) OR LADYBUG# OR LADYBEETLE# OR LADYBIRD#)
L141	QUE	((LADY(W)(BUG# OR BEETLE# OR BIRD#)) OR HOVERFLY)
L142	QUE	(HOOVERFLIES OR SAWFLY OR SAWFLIES OR DRONEFLY)
L143	QUE	(DRONEFLIES OR FLOWERFLY OR FLOWERFLIES OR LACEWING?)
L144	QUE	(((HOVER OR DRONE OR FLOWER OR SAW)(W)(FLY OR FLIES)))
L145	QUE	(SPIDER# OR SPRINGTAIL? OR (ROOT(W)WORM#) OR ROOTWORM#)
L146	QUE	(L137 OR L138 OR L139 OR L140 OR L141 OR L142 OR L143 OR L144 OR L145)
L147	QUE	(BIRD? OR AVES OR AVIAN? OR (AVI(W)FAUNA?) OR AVIFAUNA?)
L148	QUE	(SONGBIRD? OR (SONG(W)BIRD?) OR ORNITHOLOG?)
L149	QUE	(L147 OR L148)
L150	QUE	((WILD(3A)(LIFE OR ANIMAL#)) OR WILDLIFE OR SQUIRREL?)
L151	QUE	(VOLE# OR SCIURUS OR GLIRID? OR GLIS OR DORMOUSE)
L152	QUE	(DORMICE OR ELIOMYS OR LEROT# OR MUSTELID? OR MINK#)
L153	QUE	(MUSTELINE# OR WEASEL? OR STOAT? OR MUSTEL? OR BADGER?)

Search Strategy

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L154            QUE  (MELES OR MELINAE OR OTTER# OR LUTRA OR LUTRINAE)
L155            QUE  (LAGOMORPH# OR LEPORID? OR LEPUS OR ORYCTOLAGUS OR
HARE#)
L156            QUE  (TALPA OR MOLE OR MOLES OR HEDGEHOG? OR (HEDGE(W)HOG?))
L157            QUE  (CROCIDURA? OR SHREW# OR WOODMOUSE OR WOODMICE OR
APODEMUS)
L158            QUE  (MICROTUS OR ARVICOLA OR CLETHRIONOMYS? OR CRICETIDAE?)
L159            QUE  (ERINACEUS OR ERINACEIDAE? OR SORICIDAE? OR SOREX)
L160            QUE  (ENDOCRIN? OR HORMON?)
L161            QUE  (DISRUPT? OR MIMIC? OR MODULAT? OR DISORDER? OR
DISEASE?)
L162            QUE  (L160(5A)L161)
L163            QUE  (DAPHNI? OR CERIODAPHNI? OR HYALELLA? OR ASSELLUS)
L164            QUE  L113 OR (L114 OR L115 OR L116 OR L117 OR L118 OR L119 OR
                     L120 OR L121 OR L122 OR L123 OR L124) OR L163
L165            QUE  (PHYTOPLANKTON? OR AUFWUCH# OR LEMNA? OR ARALES OR
CHARA)
L166            QUE  (L126 OR L127 OR L128 OR L129) OR (L130 OR L131 OR L132
OR
                     L133) OR L165
L167            QUE  (NEOMYS OR MICROTINAE?)
L168            QUE  (L150 OR L151 OR L152 OR L153 OR L154 OR L155 OR L156 OR
L
                     157 OR L158 OR L159) OR L167
L169            QUE  (LOACH? OR STICKLEBACK? OR MUMMICHOG# OR TILAPIA? OR
ASELLUS)
L170            QUE  L164 OR L169
L171            QUE  L125 OR L170 OR L166 OR L146 OR L149 OR L168 OR L162
L172            QUE  (L1 OR L2 OR L3 OR L4 OR L5 OR L6 OR L7 OR L8 OR L9 OR
L10
                 OR L11 OR L12 OR L13 OR L14 OR L15 OR L16 OR L17 OR L18 OR
L19
                 OR L20 OR L21 OR L22 OR L23 OR L24 OR L25 OR L26 OR L27 OR
L28
                 OR L29 OR L30 OR L31 OR L32 OR L33 OR L34 OR L35 OR L36 OR
L37
                 OR L38 OR L39 OR L40 OR L41 OR L42 OR L43 OR L44 OR L45 OR
L46
                 OR L47 OR L48)
L173            QUE  (L171 OR L172 OR L94 OR L105)
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Additional SYN545245 search

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L1              QUE SPE=ON  ABB=ON  PLU=ON  (SYN545245 OR SYN(W)545245)
L2              QUE SPE=ON  ABB=ON  PLU=ON  (3(W)CYANO(W)2(W) 2(W)2(W)DIFLUORO(
                W)BENZO(W)1(W)3(W)DIOXOL(W)4(W)YL(W)(PROPIONIC OR PROPANOIC)(W)
                ACID OR 3(W)CYANO(W)2(W)2(W)2(W)DIFLUORO(W)1(W)3(W)BENZODIOXOL(
                W)4(W)YL(W)(PROPIONIC OR PROPANOIC)(W)ACID)
L3              QUE SPE=ON  ABB=ON  PLU=ON  (3(W)CYANO(W)2(W) 2(W)2(W)DIFLUORO(
                W)BENZO(W)1(W)3(W)DIOXOLYL(W)(PROPIONIC OR PROPANOIC)(W)ACID
                OR 3(W)CYANO(W)2(W)2(W)2(W)DIFLUORO(W)1(W)3(W)BENZODIOXOLYL(W)(
                PROPIONIC OR PROPANOIC)(W)ACID)
L4              QUE SPE=ON  ABB=ON  PLU=ON  (2(W)2(W)DIFLUORO(W)1(W)3(W)BENZODI
                OXOL(W)YL(W)3(W)CYANO(W)(PROPIONIC OR PROPANOIC)(W)ACID OR
                2(W)2(W)DIFLUORO(W)1(W)3(W)BENZODIOXOLYL(W)3(W)CYANO(W)(PROPION
                IC OR PROPANOIC)(W)ACID)
L5              QUE SPE=ON  ABB=ON  PLU=ON  (2(W)2(W)DIFLUORO(W)1(W)3(W)BENZODI
                OXOLYL(W)1(W)CARBOXY(W)3(W)PROPAN(1W)NITRIL OR 2(W)2(W)DIFLUORO
```

Search Strategy	
	(W)1(W)3(W)BENZODIOXOL(W)YL(W)1(W)CARBOXY(W)3(W)PROPAN(1W)NITRIL)
L6	QUE SPE=ON ABB=ON PLU=ON (DIFLUORO(2W) BENZODIOXOLYL(1W) CARBOXY(1W) PROPAN(1W)NITRIL OR DIFLUORO(2W)BENZODIOXOL(W)YL(1W)CARBOXY(1W) PROPAN(1W)NITRIL)
L7	QUE SPE=ON ABB=ON PLU=ON (CYANO(3W)DIFLUORO(W)BENZO(2W)DIOXOL(1W)YL(W)(PROPIONIC OR PROPANOIC)(W)ACID OR CYANO(3W)DIFLUORO(2W)BENZODIOXOL(1W)YL(W)(PROPIONIC OR PROPANOIC)(W)ACID)
L8	QUE SPE=ON ABB=ON PLU=ON (DIFLUORO(2W)BENZODIOXOL(W)YL(1W)CYANO(W)(PROPIONIC OR PROPANOIC)(W)ACID OR DIFLUORO(2W)BENZODIOXOLYL(1W)CYANO(W)(PROPIONIC OR PROPANOIC)(W)ACID)
L9	QUE SPE=ON ABB=ON PLU=ON (DIFLUORO(2W)BENZODIOXOL(W)YL(1W)CYANO(W)(PROPIONIC OR PROPANOIC)(W)ACID OR DIFLUORO(2W)BENZODIOXOLYL(1W)CYANO(W)(PROPIONIC OR PROPANOIC)(W)ACID)
L10	QUE SPE=ON ABB=ON PLU=ON (DIFLUOROBENZODIOXOLYL(5A)(CYANO(W)(PROPIONIC OR PROPANOIC)(W)ACID OR CARBOXY(1W) PROPAN(1W)NITRIL))
L11	QUE SPE=ON ABB=ON PLU=ON (3(W)CYANO(W)2(W) 2(W)2(W)DIFLUOROBENZO(W)1(W)3(W)DIOXOL(W)4(W)YL(W)(PROPIONIC OR PROPANOIC)(W)ACID OR ACIDE(W)3(W)CYANO(W)2(W)2(W)2(W)DIFLUOROBENZO(W)3(W)DIOXOL(W)4(W)YL(W)PROPIONIQUE)
L12	**QUE SPE=ON ABB=ON PLU=ON (L1 OR L2 OR L3 OR L4 OR L5 OR L6 OR L7 OR L8 OR L9 OR L10 OR L11)**
Please note: CAS registry number and record are not available	

Table 9.5-2: Details of Databases Searched and justification for Selection

Provider	Database	Justification	Limits applied	Number*
Host STN	MEDLINE	Contains information on every area of medicine providing comprehensive coverage from 1948 to present. Sources include journals and chapters in books or symposia. The database is updated 5 times each week with an annual reload and therefore stays very current in its cover.	10 years	46
	EMBASE	The database, covers worldwide literature in the biomedical and pharmaceutical fields, including biological science, biochemistry, human medicine, forensic science, pediatrics, pharmacy, pharmacology and drug therapy, pharmacoeconomics, psychiatry, public health, biomedical engineering and instrumentation, and environmental science. Sources include more than 4,000 journals from approximately 70 countries, monographs, conference proceedings, dissertations, and reports. The databases covers data from 1974-present and is updated daily.		11
	ESBIOBASE	A database providing comprehensive coverage of the entire spectrum of biological research worldwide. Coverage includes the following areas: applied microbiology, biotechnology, cancer research, cell & developmental biology, clinical chemistry, ecological & environmental sciences, endocrinology, genetics, immunology, infectious diseases, metabolism, molecular biology, neuroscience, plant and crop science, protein biochemistry, and toxicology. Records are selected from over 1,700 international scientific journals, books, and conference proceedings. The database covers the period 1994 - present and is updated weekly.		1
	AGRICOLA	A bibliographic database containing selected worldwide literature of agriculture and related fields. Coverage of the database includes agricultural economics and rural sociology, agricultural production, animal sciences, chemistry, entomology, food and human nutrition, forestry, natural resources, pesticides, plant science, soils and fertilizers, and water resources. Also covered are related areas such as biology and biotechnology, botany, ecology, and natural history. The database draws on bibliographies, serial articles, book chapters, monographs, computer files, serials, maps, audiovisuals, and reports. It covers the period 1970-present and is updated monthly.		7
	BIOSIS	A large and comprehensive worldwide life science database covers original research reports, reviews, and selected U.S. patents in biological and biomedical areas, with subject coverage ranging from aerospace biology to zoology. Sources include periodicals, journals, conference proceedings, reviews, reports, patents, and short communications. Nearly 6,000 life source journals, 1,500 international meetings as well as review articles, books, and monographs are reviewed for inclusion. It covers the period 1926 – present and is updated weekly.		50
	CABA	Covers worldwide literature from all areas of agriculture and related sciences including biotechnology, forestry, and veterinary medicine. Sources include journals, books, reports, published theses, conference proceedings, and patents. It covers the period 1973-present and is updated weekly.		172
	HCAPLUS	Covers worldwide literature from all areas of chemistry, biochemistry, chemical engineering, and related sciences including applied, macromolecular, organic, physical, inorganic, and analytical chemistry. Current sources include over 8,000 journals, patents, technical reports, books, conference proceedings, dissertations, product reviews, bibliographic items, book reviews, and meeting abstracts. Electronic-only journals and Web preprints are also covered. Cited references are included for journals, conference proceedings and basic patents from the U.S., EPO, WIPO, and German patent offices added to the CAS databases from 1999 to the present. Also provides early access to the bibliographic information, abstracts and CAS Registry Numbers for documents in the process of being indexed by CAS. Covers the period 1907 – present and is updated daily		119

Provider	Database	Justification	Limits applied	Number*
	FSTA	The database provides worldwide coverage of all scientific and technological aspects of the processing and manufacture of human food products including basic food sciences, biotechnology, hygiene and toxicology, engineering, packaging, and all individual foods and food products. Sources include more than 2,200 journals, books, reviews, conference proceedings, patents, standards, and legislation. It covers the period 1969 – present and is updated weekly.		3
	FROSTI	The database contains citations to the worldwide literature on food science and technology including food and beverages, analytical methods, quality control, manufacturing, microbiology, food processing, health and nutrition, recipes, and additives. Sources include approximately 800 scientific and technical journals, bulletins, technical reports, conference proceedings, grey literature, and British, European (EP), U.S., Japanese, and international (PCT) patent applications. Covers the period 1972 – present and is updated twice weekly.		0
	GEOREF	Covers international literature on geology and geosciences. Sources include the Bibliography of North American Geology, Bibliography and Index of Geology Exclusive of North America, Geophysical Abstracts, Bibliography of Fossil Vertebrates, selected records from Geoline and from geology sections of PASCAL and state and national geological surveys. Covers the period 1669 – present and is updated twice a month.		0
	TOXCENTER	Covers the pharmacological, biochemical, physiological, and toxicological effects of drugs and other chemicals. It is composed of the following subfiles: BIOSIS, CAplus, IPA and MEDLINE and sources include abstracts, books and book chapters, bulletins, conference proceedings, journal articles, letters, meetings, monographs, notes, papers, patents, presentations, research and project summaries, reviews, technical reports, theses, translations, unpublished material, web reprints. Covers the period 1907 – present and is updated weekly		28
	PQSCITECH	Is a huge resource in all areas of science and technology from engineering to lifescience. The file is a merge of 25 STN databases formerly known as CSA databases (Cambridge Scientific Abstracts): AEROSPACE, ALUMINIUM, ANTE, AQUALINE, AQUASCI, BIOENG, CERAB, CIVILENG, COMPUAB, CONFSCI, COPPERLIT, CORROSION, ELCOM, EMA, ENVIROENG, HEALSAFE, LIFESCI, LISA, MATBUS, MECHENG, METADEX, OCEAN, POLLUAB, SOLIDSTATE, and WATER. Sources are journals, patents, books, reports, and conference proceedings spanning the period 1962 – present and it is updated monthly.		9
	PASCAL	The database provides access to the world's scientific and technical literature including physics and chemistry, life sciences (biology, medicine, and psychology), applied sciences and technology, earth sciences, and information sciences. French and European literature is particularly well represented. Approximately 5,000 journal titles are indexed. References to theses and to conference proceedings are also included. Spans the period 1977 to present and is updated weekly		2
	SCISEARCH	Is an international index to the literature covering virtually every subject area within the broad fields of science, technology, and biomedicine. SciSearch contains all the records published in Science Citation Index Expanded™ and additional records from the Current Contents series of publications. Bibliographic information and cited references from over 5,600 scientific, technical, and medical journals are contained in the database. Spans the period 1974 to present and is updated weekly.		8
	ANABST	Covers worldwide literature on analytical chemistry. The ANABSTR file contains bibliographic records with abstracts (since 1984) for documents reported in printed Analytical Abstracts. Sources for ANABSTR include journals, books, conference proceedings, reports, and standards. Spans the period 1980 to present and is updated weekly.		0

Provider	Database	Justification	Limits applied	Number*
	HCHEMLIST	The database identifies the regulatory requirements for a specific substance from many of the world's most significant regulated substances lists. It records substance identity information, inventory status, source of information, and summaries of regulatory activity, reports, and other compliance information.		0
	CROPU	The database covers all aspects of pesticides, including their use in crop protection and pest control. Information on plant and insect growth regulators, attractants, repellents and biological control is also included. The database draws on 1,100 scientific journals, conference proceedings, and patents beginning in 1996. Records contain bibliographic information, titles, abstracts, in-depth indexing, and Enzyme Commission Numbers. Spans the period 1985 to 2003.		0
	CROPB	The Crop Protection Backfile is the companion backfile to the current Crop Protection File, CROPU, covering all aspects of pesticides, including their use in crop protection and pest control. Information on plant and insect growth regulators, attractants, repellents and biological control is also included. Bibliographic information and indexing terms are searchable. Spans the period 1968 to 1984.		0

* Total number of summary records retrieved after removing duplicates

Table 9.5-3: Detailed Search Parameters for Web searches

Website name and service publisher	URL	Justification	Search terms	Limits applied	Number*
A web search has not been conducted as the database search reported above is considered to provide an adequately comprehensive search of the quality peer reviewed literature.					

* Total number of summary records or full-text documents retrieved after removing duplicates

Table 9.5-4: Detailed Search Parameters for Journal Table of Contents

Journal name	Journal URL or publisher	Dates, volumes and issues searched	Method of searching	Search terms	Number*
A search for journal table of contents has not been conducted as the database search reported above is considered to provide an adequately comprehensive search of the quality peer reviewed literature.					

* Total number of summary records or full-text documents retrieved after removing duplicates

Table 9.5-5: Detailed Search Parameters for Reference Lists

Bibliographic details of documents whose reference lists were scanned	Number*
A search for reference lists has not been conducted as the database search reported above is considered to provide an adequately comprehensive search of the quality peer reviewed literature.	

* Total number of summary records or full-text documents retrieved after removing duplicates

CA 9.6 Results

Table 9.6-1: Results of study selection process

Data requirement(s) captured in the search	Number (Initial Search)	Number (Top-Up Search)	Total number
Total number of *summary records* retrieved after *all** searches of peer-reviewed literature (excluding duplicates)	361	95	456
Number of *summary records* excluded from the search results after rapid assessment for relevance**	353	87	440
Total number of *full-text* documents assessed in detail*	8	8	16
Number of *studies* excluded from further consideration after detailed assessment for relevance	8	8	16
Number of *studies* not excluded for relevance after detailed assessment (i.e. relevant studies and studies of unclear relevance)	0	0	0

*both from bibliographic databases and other sources of peer-reviewed literature
** aligned with EFSA Journal 2011; 9(2) 2092: rapid assessment means exclusion of "obviously irrelevant records" based on titles

Below is a summary of the 353 titles removed during the rapid assessment-

- 72 titles/abstracts were relevant to fate, toxicology, metabolism, operator exposure and residues, so not relevant to the ecotoxicology section but were considered in the other relevant literature review sections.
- 11 titles/abstracts were removed as they did not relate to fludioxonil alone (e.g. were mixtures with either cyprodinil or flutriafol).
- 17 titles were discounted from further assessment as they related to analytical methods, chemical analysis or method validation.
- 183 titles/abstracts were removed as they related to biological activity and efficacy.
- 36 titles were removed as they related to agriculture, agronomy, stewardship and resistance
- 28 titles were discounted from further assessment as they related to general ecology and science.
- 6 titles were removed as they were irrelevant (e.g. art and space exploration)

Here is a summary of the 87 titles removed during the rapid assessment during the top up search-

- 10 titles/abstracts were relevant to fate, toxicology, metabolism, operator exposure and residues, so not relevant to the ecotoxicology section but were considered in the other relevant literature review sections.
- 2 titles/abstracts were removed as they did not relate to fludioxonil alone (e.g. were mixtures with either cyprodinil or flutriafol).
- 3 titles were discounted from further assessment as they related to analytical methods, chemical analysis or method validation.
- 49 titles/abstracts were removed as they related to biological activity and efficacy.
- 14 titles were removed as they related to resistance
- 3 titles were discounted from further assessment as they related to general ecology and science.

Assessment of the full text from the remaining 15 (only abstract used for 1 article) titles which were identified as potentially relevant or unclear on the basis of their titles and/or abstracts identified none of the studies as potentially relevant for this submission of fludioxonil. Full details of these papers are given in the tables below.

Details of why each paper has been excluded for relevance or reliability are given in Table 9.6.4.

Assessment of the full text from the remaining *168* ~~8~~ titles which were identified as potentially relevant or unclear on the basis of their titles and/or abstracts identified none of the studies as potentially relevant for this submission of fludioxonil. Full details of these papers are given in the tables below.

Details of why each paper has been excluded for relevance or reliability are given in Table 9.6.4.

Table 9.6-2: List of references for all potentially relevant and unclear studies listed by data point number

CA data point number	Author(s)	Year	Title	Source
Initial search				
CA 8.1.1.3	Kennedy T.F. & Connery J.	2008	An investigation of seed treatments for the control of crow damage to newly-sown wheat.	Irish Journal of Agricultural and Food Research, (2008) Vol. 47, No. 1, pp. 79-91. ISSN: 0791-6833.
CA 8.2.6.1	Dewez D., Geoffroy L., Vernet G. and Popovic R.	2005	Determination of photosynthetic and enzymatic biomarkers sensitivity used to evaluate toxic effects of copper and 18ludioxonil in alga *Scenedesmus obliquus*.	Aquatic toxicology (Amsterdam, Netherlands), (2005 Aug 30) Vol. 74, No. 2, pp. 150-9. Journal code: 8500246. ISSN: 0166-445X. L-ISSN: 0166-445X.
CA 8.3.1	Gradish, A. E.; Dupree, C. D. S.; Shipp, L.; Harris, C. R.; Ferguson, G.	2008	The effect of reduced risk pesticides for use in greenhouse vegetable production on bumble bees (*Bombus impatiens* Cresson).	Bulletin OILB/ SROP (2008), Volume 32, pp. 67-70, 7 refs. Conference: International Organization for Biological and Integrated Control of Noxious Animals and Plants West Palaearctic Regional Section: Working Group "Integrated Control in Protected Crops, Temperate Climate", Proceedings of the Working Group meeting, Sint Michielsgestel, Netherlands, 21-25 April 2008. URL (Availability): http://www.iobc-wprs.org
CA 8.3.1	Girolami V., Marzaro M., Vivan L., Mazzon L., Greatti M., Giori C., Marton D. and Tapparo A.,	2012	Fatal powdering of bees in flight with particulates of neonicotinoids seed coating and humidity implication.	Journal of Applied Entomology (2012), 136(1-2), 17-26. ISSN: 0931-2048
CA 8.3.1	Genersch, E., von der Ohe, W., Kaatz, H., Schroeder, A., Otten, C., Buechler, R., Berg, S., Ritter, W., Muehlen, W., Gisder, S., Meixner, M., Liebig, G., Rosenkranz, P.	2010	The German bee monitoring project: a long term study to understand periodically high winter losses of honey bee colonies	Apidologie (2010), 41 (3), 332-352. CODEN: APDGB5; ISSN: 0044-8435

CA data point number	Author(s)	Year	Title	Source
CA 8.3.1	Tapparo, A.; Girolami, V.; Mazzon, L.; Giorio, C.; Marzaro, M.; Targa, A.	2010	Assessment of the environmental exposure of honey bees to neonicotinoid insecticides coming from corn coated seeds	Journal of Indian Association for Environmental Management (2010), 37 (1), 14-18. CODEN: JIAMER; ISSN: 0970-8480
CA 8.5	Zhang Q., Shi M., Liu C., Huang S., Han X., Zhang b. & Wen J.	2008	Dynamic changes of soybean rhizosphere microorganism after treatment with 4 seed coating.	Dongbei Nongye Daxue Xuebao (2008), 39 (3), 1-4. CODEN: DNDXEA; ISSN: 1005-9369
CA 8.6	Kubiak, K.	2010	Effect of seed treatments containing fludioxonil, carboxin with thiram and tebuconazole on wheat growth in early development stages.	Instytut Ochrony Roslin - Panstwowy Instytut Badawczy, Wadysawa Wegorka 20, 60-318 Poznan, Poland. EMAIL: K.Kubiak@iorpib.poznan.pl SO Progress in Plant Protection (2010), Volume 50, Number 4, pp. 1801-1805, 4 refs. ISSN: 1427-4337
Top-Up search				
CA 8	Wambaugh, John F.; Wetmore, Barbara A.; Pearce, Robert; Strope, Cory; Goldsmith, Rocky; Sluka, James P.; Sedykh, Alexander; Tropsha, Alex; Bosgra, Sieto; et al.	2015	Toxicokinetic triage for environmental chemicals	Toxicological Sciences, (2015) Vol. 147, No. 1, pp. 55-67. CODEN: TOSCF2. ISSN: 1096-0929.
CA 8.1.1.3	Bro, Elisabeth; Millot, Florian; Decors, Anouk; Devillers, James	2015	Quantification of potential exposure of gray partridge (Perdix perdix) to pesticide active substances in farmlands	Science of the Total Environment, (2015) Vol. 521-522, pp. 315-325. CODEN: STENDL. ISSN: 0048-9697.
CA 8.1.2	Smalling, Kelly L.; Reeves, Rebecca; Muths, Erin; Vandever, Mark; Battaglin, William A.; Hladik, Michelle L.; Pierce, Clay L.	2015	Pesticide concentrations in frog tissue and wetland habitats in a landscape dominated by agriculture	Science of the Total Environment, (2015) Vol. 502, pp. 80-90. CODEN: STENDL. ISSN: 0048-9697.
CA 8.1.5	Rotroff, Daniel M.; Martin, Matt T.; Dix, David J.; Filer, Dayne L.; Houck, Keith A.; Knudsen, Thomas B.; Sipes, Nisha S.; Reif, David M.; Xia, Menghang; et al.	2014	Predictive Endocrine Testing in the 21st Century Using in Vitro Assays of Estrogen Receptor Signaling Responses	Environmental Science & Technology, (2014) Vol. 48, No. 15, pp. 8706-8716. CODEN: ESTHAG. ISSN: 0013-936X.
CA 8.2.2.1	Ducharme, Nicole A.; Reif, David M.; Gustafsson, Jan-Ake; Bondesson, Maria	2015	Comparison of toxicity values across zebrafish early life stages and mammalian studies: Implications for chemical testing	Reproductive Toxicology, (2015) Vol. 55, pp. 3-10. CODEN: REPTED. ISSN: 0890-6238.

CA data point number	Author(s)	Year	Title	Source
CA 8.2.5.4	Fernandez, Diego; Voss, Katharina; Bundschuh, Mirco; Zubrod, Jochen P.; Schaefer, Ralf B.	2015	Effects of fungicides on decomposer communities and litter decomposition in vineyard streams	Science of the Total Environment, (2015) Vol. 533, pp. 40-48. CODEN: STENDL. ISSN: 0048-9697.
CA 8.3.1	Kasiotis, Konstantinos M.; Anagnostopoulos, Chris; Anastasiadou, Pelagia; Machera, Kyriaki	2014	Pesticide residues in honeybees, honey and bee pollen by LC-MS/MS screening: Reported death incidents in honeybees	Science of the Total Environment, (2014) Vol. 485-486, pp. 633-642. CODEN: STENDL. ISSN: 0048-9697.
CA 8.6	Fantke, Peter; Gillespie, Brenda W.; Juraske, Ronnie; Jolliet, Olivier	2014	Estimating Half-Lives for Pesticide Dissipation from Plants	Environmental Science & Technology, (2014) Vol. 48, No. 15, pp. 8588-8602. CODEN: ESTHAG. ISSN: 0013-936X.

Table 9.6-3: List of references for all potentially relevant and unclear studies listed by Author

Author(s)	Year	CA data point number	Title	Source
Initial Search				
Dewez D., Geoffroy L., Vernet G. and Popovic R.	2005	CA 8.2.6.1	Determination of photosynthetic and enzymatic biomarkers sensitivity used to evaluate toxic effects of copper and 20ludioxonil in alga *Scenedesmus obliquus*.	Aquatic toxicology (Amsterdam, Netherlands), (2005 Aug 30) Vol. 74, No. 2, pp. 150-9. Journal code: 8500246. ISSN: 0166-445X. L-ISSN: 0166-445X.
Genersch, E., von der Ohe, W., Kaatz, H., Schroeder, A., Otten, C., Buechler, R., Berg, S., Ritter, W., Muehlen, W., Gisder, S., Meixner, M., Liebig, G., Rosenkranz, P.	2010	CA 8.3.1	The German bee monitoring project: a long term study to understand periodically high winter losses of honey bee colonies	Apidologie (2010), 41 (3), 332-352. CODEN: APDGB5; ISSN: 0044-8435
Girolami V., Marzaro M., Vivan L., Mazzon L., Greatti M., Giori C., Marton D. and Tapparo A.,	2012	CA 8.3.1	Fatal powdering of bees in flight with particulates of neonicotinoids seed coating and humidity implication.	Journal of Applied Entomology (2012), 136(1-2), 17-26. ISSN: 0931-2048
Gradish, A. E.; Dupree, C. D. S.; Shipp, L.; Harris, C. R.; Ferguson, G.	2008	CA 8.3.1	The effect of reduced risk pesticides for use in greenhouse vegetable production on bumble bees (*Bombus impatiens* Cresson).	Bulletin OILB/ SROP (2008), Volume 32, pp. 67-70, 7 refs. Conference: International Organization for Biological and Integrated Control of Noxious Animals and Plants West Palaearctic Regional Section: Working Group "Integrated Control in Protected Crops, Temperate Climate", Proceedings of the Working Group meeting, Sint Michielsgestel, Netherlands, 21-25 April 2008. URL (Availability): http://www.iobc-wprs.org

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Kubiak, K.	2010	CA 8.6	Effect of seed treatments containing fludioxonil, carboxin with thiram and tebuconazole on wheat growth in early development stages.	Instytut Ochrony Roslin - Panstwowy Instytut Badawczy, Wadysawa Wegorka 20, 60-318 Poznan, Poland. EMAIL: K.Kubiak@iorpib.poznan.pl SO Progress in Plant Protection (2010), Volume 50, Number 4, pp. 1801-1805, 4 refs. ISSN: 1427-4337
Tapparo, A.; Girolami, V.; Mazzon, L.; Giorio, C.; Marzaro, M.; Targa, A.	2010	CA 8.3.1	Assessment of the environmental exposure of honey bees to neonicotinoid insecticides coming from corn coated seeds	Journal of Indian Association for Environmental Management (2010), 37 (1), 14-18. CODEN: JIAMER; ISSN: 0970-8480
Zhang Q., Shi M., Liu C., Huang S., Han X., Zhang b. & Wen J.	2008	CA 8.5	Dynamic changes of soybean rhizosphere microorganism after treatment with 4 seed coating.	Dongbei Nongye Daxue Xuebao (2008), 39 (3), 1-4. CODEN: DNDXEA; ISSN: 1005-9369
Top-Up search				
Bro, Elisabeth; Millot, Florian; Decors, Anouk; Devillers, James	2015	CA 8.1.1.3	Quantification of potential exposure of gray partridge (Perdix perdix) to pesticide active substances in farmlands	Science of the Total Environment, (2015) Vol. 521-522, pp. 315-325. CODEN: STENDL. ISSN: 0048-9697.
Ducharme, Nicole A.; Reif, David M.; Gustafsson, Jan-Ake; Bondesson, Maria	2015	CA 8.2.2.1	Comparison of toxicity values across zebrafish early life stages and mammalian studies: Implications for chemical testing	Reproductive Toxicology, (2015) Vol. 55, pp. 3-10. CODEN: REPTED. ISSN: 0890-6238.
Fantke, Peter; Gillespie, Brenda W.; Juraske, Ronnie; Jolliet, Olivier	2014	CA 8.6	Estimating Half-Lives for Pesticide Dissipation from Plants	Environmental Science & Technology, (2014) Vol. 48, No. 15, pp. 8588-8602. CODEN: ESTHAG. ISSN: 0013-936X.
Fernandez, Diego; Voss, Katharina; Bundschuh, Mirco; Zubrod, Jochen P.; Schaefer, Ralf B.	2015	CA 8.2.5.4	Effects of fungicides on decomposer communities and litter decomposition in vineyard streams	Science of the Total Environment, (2015) Vol. 533, pp. 40-48. CODEN: STENDL. ISSN: 0048-9697.
Kasiotis, Konstantinos M.; Anagnostopoulos, Chris; Anastasiadou, Pelagia; Machera, Kyriaki	2014	CA 8.3.1	Pesticide residues in honeybees, honey and bee pollen by LC-MS/MS screening: Reported death incidents in honeybees	Science of the Total Environment, (2014) Vol. 485-486, pp. 633-642. CODEN: STENDL. ISSN: 0048-9697.

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Rotroff, Daniel M.; Martin, Matt T.; Dix, David J.; Filer, Dayne L.; Houck, Keith A.; Knudsen, Thomas B.; Sipes, Nisha S.; Reif, David M.; Xia, Menghang; et al.	2014	CA 8.1.5	Predictive Endocrine Testing in the 21st Century Using in Vitro Assays of Estrogen Receptor Signaling Responses	Environmental Science & Technology, (2014) Vol. 48, No. 15, pp. 8706-8716. CODEN: ESTHAG. ISSN: 0013-936X.
Smalling, Kelly L.; Reeves, Rebecca; Muths, Erin; Vandever, Mark; Battaglin, William A.; Hladik, Michelle L.; Pierce, Clay L.	2015	CA 8.1.2	Pesticide concentrations in frog tissue and wetland habitats in a landscape dominated by agriculture	Science of the Total Environment, (2015) Vol. 502, pp. 80-90. CODEN: STENDL. ISSN: 0048-9697.
Wambaugh, John F.; Wetmore, Barbara A.; Pearce, Robert; Strope, Cory; Goldsmith, Rocky; Sluka, James P.; Sedykh, Alexander; Tropsha, Alex; Bosgra, Sieto; et al.	2015	CA 8	Toxicokinetic triage for environmental chemicals	Toxicological Sciences, (2015) Vol. 147, No. 1, pp. 55-67. CODEN: TOSCF2. ISSN: 1096-0929.

A detailed review of the full-text documents identified in Table 9.6-2 resulted in the additional exclusion of the following studies from the dossier. As requested by the RMS, these literature references these literature references given in Table 9.6-4 below, have been provided in K-CA and the LCA Section 9 reference list. The only exception is for the reference where copyright clearance has not been granted. In these cases, additional details for the exclusion have been provided in the Table 9.6-4.

Table 9.6-4: List of references excluded following detailed review listed by data point number

CA data point number	Author(s)	Year	Title	Source	Reason(s) for not including the study in the dossier	Ref. ID
Initial search						
CA 8.1.1.3	Kennedy T.F. & Connery J.	2008	An investigation of seed treatments for the control of crow damage to newly-sown wheat.	Irish Journal of Agricultural and Food Research, (2008) Vol. 47, No. 1, pp. 79-91. ISSN: 0791-6833. Syngenta File No.: CGA173506_12013	Criteria 13. Test item Beret gold is an old formulation of the solo fludioxonil 25g/L seed treatment. Study shows that treatment increases crop yields but it is unclear whether this relates to reduced crow damage or reduced pest damage. Further information supplied at request of Rapporteur: Beret Gold was used in this study to evaluate any bird repellent qualities to control crop loss in wheat fields due to concerns about 50% loss of plant density resulting from crows eating the seeds and seedlings. Beret Gold is registered in Ireland but not for this use. Spring and winter wheat were sown at 179 kg seeds/ha equivalent to 2L Beret Gold/tonne (a 95% germination rate was assumed) at depths ranging from 2 to 8 cm. No details are provided for the trial site (Ireland) nor of the test guideline used. A randomised block design was used with 5 replicates for the treatment and the control. Observations were conducted at BBCH 22-23 using a 0.5 m^2 quadrat (4 per plot) to observe plant density. Crow numbers post sowing were noted. Crow numbers ranged from 50 to 600 crows in the 1 to 3 weeks after sowing. Most damage resulted from feeding on seed pre-emergence. Limited damage from uprooting seedlings was evident. More damage occurred in the elevated sections of the field. Beret Gold was not found to increase crop yield by reducing crow damage in either spring or winter wheat fields and is not considered a good bird repellent. **Conclusion:** This is not relevant to this dossier or risk assessment.	84/361
CA 8.2.6.1	Dewez D., Geoffroy L., Vernet G. and Popovic R.	2005	Determination of photosynthetic and enzymatic biomarkers sensitivity used to evaluate toxic effects of copper and fludioxonil in alga *Scenedes*	Aquatic toxicology (Amsterdam, Netherlands), (2005 Aug 30) Vol. 74, No. 2, pp. 150-9. Journal code: 8500246. ISSN: 0166-445X. L-ISSN: 0166-445X. Syngenta File No.: CGA173506_12005	Rejected for the following reasons: Criteria 1. The test material detailed information on purity or source. Criteria 7. Doses were not confirmed analytically. Criteria 10. Recognisable test guidelines have not been used. From Figure 1 there was <50% inhibition of growth rate after 48 hours. Therefore the Syngenta regulatory studies have been used in preference to this endpoint for the risk assessment. Further information supplied at request of Rapporteur: Fludioxonil was dissolved in acetone in (at 0.05% v/v = 0.5mL/L higher than OECD 201). The control seems to have been treated similarly, but not clear if there was also	37/361

CA data point number	Author(s)	Year	Title	Source	Reason(s) for not including the study in the dossier	Ref. ID
			mus obliquus.		a negative control too. Test concentrations of 1, 2 and 3 mg/L were tested for 12, 24 and 48 hrs (OECD 201 recommends a 72hr exposure and the use of five test concentrations as a minimum). The cultures were placed on an o rbital shaker (130 rpm). Initial cell density was 2 x 10^6 cells/mL (higher than OECD 201 1 x 10^4 cells/mL).Algal culture conditions are given as 110 µmol photons m^2s^1 by white fluorescent lamps, at 28±1ºC, however it is not confirmed that the same conditions were used for the actual test. The temperature range is higher than OECD201 recommendations. Under 2.6 Data analysis and statistics, it states that all experiments were repeated at least three times and each sample was analysed in triplicate. It is unclear if three replicates have been used in each study (six are required for the control cultures according to OECD 201), and or if repetition three times means sequentially. Or whether this concerned the conduct of the statistics? The results showed that for Scenedesmus obliquus there was approximately a 30% inhibition of growth rate and a 55% decrease in chlorophyll synthesis at the 3 mg/L concentration after 48 hours. No effects were seen after 24 hours. Photosynthetic parameters were also examined and fludioxonil was not found sensitive to these biomarkers. Enzyme activities were also examined (catalase [CAT], ascorbate peroxidase [APX], glutathione reductase [GR] and glutathione S-transferase [GST]. Activity of CAT, APX and GST were noted after 24hrs but diminished at 48hrs. The paper lacks any analytical confirmation of test concentrations either at the start of the study or the end. It does not present any validity criteria of any kind. It cannot be confirmed what was tested nor the validity of this study. It is therefore suggestive only that this species of algae is less sensitive that the standard regulatory species of green algae. **Conclusion:** The regulatory data contain more sensitive species of green algae (Pseudokirchneriella subcapitata) conducted to GLP according to the OECD 201 (and other validated test guidelines). The regulatory data will be used in preference to this paper.	

CA data point number	Author(s)	Year	Title	Source	Reason(s) for not including the study in the dossier	Ref. ID
CA 8.3.1	Gradish, A. E.; Dupree, C. D. S.; Shipp, L.; Harris, C. R.; Ferguson, G.	2008	The effect of reduced risk pesticides for use in greenhouse vegetable production on bumble bees (*Bombus impatiens* Cresson).	Bulletin OILB/ SROP (2008), Volume 32, pp. 67-70, 7 refs. Conference: International Organization for Biological and Integrated Control of Noxious Animals and Plants West Palaearctic Regional Section: Working Group "Integrated Control in Protected Crops, Temperate Climate", Proceedings of the Working Group meeting, Sint Michielsgestel, Netherlands, 21-25 April 2008. URL (Availability): http://www.iobc-wprs.org Syngenta File No.: CGA173506_12006	Only an abstract published from a conference; therefore, not peer reviewed and not significantly detailed for assessment.	202/361
CA 8.3.1	Girolami V., Marzaro M., Vivan L., Mazzon L., Greatti M., Giori C., Marton D. and Tapparo A.,	2012	Fatal powdering of bees in flight with particulates of neonicotinoids seed coating and humidity implication.	Journal of Applied Entomology (2012), 136(1-2), 17-26. ISSN: 0931-2048 Syngenta File No.: CGA173506_12008	Reject based on Criteria 8 (Effects are related to a single test item; the formulation Celest XL was used which contains both fludioxonil and metalaxyl-M).	280/361

CA data point number	Author(s)	Year	Title	Source	Reason(s) for not including the study in the dossier	Ref. ID
CA 8.3.1	Genersch, E., von der Ohe, W., Kaatz, H., Schroeder, A., Otten, C., Buechler, R., Berg, S., Ritter, W., Muehlen, W., Gisder, S., Meixner, M., Liebig, G., Rosenkranz, P.	2010	The German bee monitoring project: a long term study to understand periodically high winter losses of honey bee colonies	Apidologie (2010), 41 (3), 332-352. CODEN: APDGB5; ISSN: 0044-8435 Syngenta File No.: CGA173506_12009	Does not fulfil criteria 8 (effects are not related to a single test item). This research involved monitoring bee colonies over a four-year period. Disease, pest and pesticide residues were measured. Fludioxonil was found in a small number of pollen samples. As it is difficult to isolate the effects relating solely to fludioxonil this reference is not relevant for this review.	303/361
CA 8.3.1	Tapparo, A.; Girolami, V.; Mazzon, L.; Giorio, C.; Marzaro, M.; Targa, A.	2010	Assessment of the environmental exposure of honey bees to neonicotinoid insecticides coming from corn coated seeds	Journal of Indian Association for Environmental Management (2010), 37 (1), 14-18. CODEN: JIAMER; ISSN: 0970-8480 **30/03/2015** We are sorry to inform you that your order has been cancelled as copyright clearance could not be obtained. **10/03/2015** Please be advised that there will be a delay in the fulfillment of your order. The document you requested is not available at our primary, copyright-cleared sources. We are working to obtain a copy from the publisher as quickly as possible. The publisher has not responded after our initial contact, but we are continuing to contact them by all available means. Copyright	Not obtainable at time of submission due to copyright delays. Cannot ascertain if this is relevant. However the main focus of the paper from the title is neonicotinoids, therefore it is considered likely that it would be of limited relevance if any. Syngenta could not obtain this reference due to copyright. More details have been given below to explain why it is not considered relevant. Here is link to paper openly available on internet http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.454.6772&rep=rep1&type=pdf From the abstract the focus was on examining a link between spring sown corn treated with neonicotinoid seed treatment and colony collapse disorder. The following points were examined: 1) the atmospheric emission of particulate matter containing the insecticide by the sowing-machine and 2) the translocation of the systemic neonicotinoids from the coated seed to guttation drops of young corn plants. The paper used Cruiser OSR which contains thiamethoxam, metalaxyl-M and fludioxonil. It is a worst case exposure of honeybees which were either exposed in cages placed directly next to the exhaust of maize driller or bees trained to fly over driller when it was drilling. Only thiamethoxam has been measured the in the exposure experiments and the risk will be entirely driven by thiamethoxam exposure. This is very much an unrealistic worse case exposure scenario. As the study was also conducted with a three way mixture, it is not relevant to this dossier as the more than one chemical was used. Therefore it is not possible to deduce the effects of fludioxonil alone.	307/361

CA data point number	Author(s)	Year	Title	Source	Reason(s) for not including the study in the dossier	Ref. ID
				Clearance Center **26/02/2015** Please be advised that there will be a delay in the fulfillment of your order. The document you requested is not available at our primary, copyright-cleared sources. We are working to obtain a copy from the publisher as quickly as possible. Copyright Clearance Center **05/02/2015** Please be advised that there will be a delay in the fulfillment of your order. We currently do not have permission to provide this document in a copyright compliant manner. As a result, your order is currently awaiting Advanced Reference Services (ARS). Please note that while some ARS orders fill quickly, hard to clear and hard to locate documents may take longer. In addition, some orders may require re-referencing work to match your requested citation to a better record in our system. This process should not delay your order if needed. Copyright Clearance Center		

CA data point number	Author(s)	Year	Title	Source	Reason(s) for not including the study in the dossier	Ref. ID
CA 8.5	Zhang Q., Shi M., Liu C., Huang S., Han X., Zhang b. & Wen J.	2008	Dynamic changes of soybean rhizosphere microorganism after treatment with 4 seed coating.	Dongbei Nongye Daxue Xuebao (2008), 39 (3), 1-4. CODEN: DNDXEA; ISSN: 1005-9369 Syngenta File No.: CGA173506_12017	Affects were determined by counting fungi and bacteria in rhizosphere zone on post treatment. Not relevant as effects in the soil are determined using functional endpoints (Regulation (EC) 1107/2009). Further information supplied at request of Rapporteur: Supplier of Celest not given. No details of how soybean seeds were treated, or how much Celest was used to treat the seeds (nor analytical confirmation of treatment). No details about sowing of the seeds or seed densities, or season. Not sure if the study was conducted in a laboratory of field site. If a field site then no details are provided about environmental variables (temperature, rain, daylight). Soil collection details provided in another paper (Syngenta did not acquire this additional reference as this current reference is too poor quality to warrant this). Soil rhizosphere samples were collected on days 22, 29, 36, 43, 51, 60, 71, 82, 92 after planting. The samples were then diluted to give a soil suspension in sterile water then diluted 10-fold into serial gradients. The following inoculum concentrations were screened: 10^{-2} fungi, 10^{-5} bacteria, 10^{-4} actinomycetes and nitrogen fixing bacteria 10^{-5}. The culturing, counting and inoculation is covered in another reference. The number of bacteria/g soil and the % change in rhizosphere bacteria were assessed. For Celest, stimulation occurred with rhizosphere fungi (max 366% at 22d) and then 200% (43d). This was interspersed with some inhibition at29d, 60d, 71d and 82d (max approx. 50%), so no consistent pattern but levels returned to 'normal' by 92d. More consistent inhibition was found for rhizosphere bacteria (approx. max 100% 43d) but returning to approx. 25% by 92d. For rhizosphere actinomycetes there was an initial stimulation of approx. 988% followed by much less activity. For rhizosphere nitrogen-fixing bacteria Celest regularly inhibited the change rate from 22-51d (max 90% 36d). Minimal inhibition was noted by 60d to 92d. The latter result is in line with Regulatory data for soil micro-organism tests where the studies ran for 96d. Without knowing what rate was applied to the seeds and the sowing rate in the soil it is difficult to make any further comment with regard to the impact of this study on the risk assessment due to lack of critical detail. **Conclusion**: study deemed not relevant due to lack of critical detail.	326/361

CA data point number	Author(s)	Year	Title	Source	Reason(s) for not including the study in the dossier	Ref. ID
CA 8.6	Kubiak, K.	2010	Effect of seed treatments containing fludioxonil, carboxin with thiram and tebuconazole on wheat growth in early development stages.	Instytut Ochrony Roslin - Panstwowy Instytut Badawczy, Wadysawa Wegorka 20, 60-318 Poznan, Poland. EMAIL: K.Kubiak@iorpib.poznan.pl SO Progress in Plant Protection (2010), Volume 50, Number 4, pp. 1801-1805, 4 refs. ISSN: 1427-4337 Syngenta File No.: CGA173506_12050 An engish translation will be provided when available	Does not fulfil criteria 10 (study conditions should not differ significantly from recommended protocols). The wheat plants were grown in Petri dishes. This s a significant departure from the used of pots and soil in both OECD Non-Target Plant test guidelines. Therefore this reference has been discounted. Syngenta could not obtain this reference due to copyright. Further detail has been added to explain why the paper is not considered relevant. A fludioxonil formulation Maxim 25 g/L FS has been used at a field rate of 200mL/100 kg seeds. The study was performed on three winter wheat cultivars: Legenda, Sukces and Zyta. Treated seeds were incubated for 14 days on Petri dishes in temperature 20°C. The following parameters were evaluated: length and fresh weight of shoot, length and fresh weight of root and number of primary roots. Root weight was noted as significantly lower, however in comparison to the controls, the differences were 0.6% and 4% lower for Sukces and Legenda, respectively, and 5.5% higher for Zyta. Shoot weight was 2.4% higher than controls for Sukces but not notably different for the other two varieties. The number of primary roots, root length and shoot length were not significantly different. When significant differences are noted in the tables it is not clear which of the three chemical formulations this relates to. However, there is not strong evidence of any deleterious effects of non-target plants in this study.	160/361

CA data point number	Author(s)	Year	Title	Source	Reason(s) for not including the study in the dossier	Ref. ID
Top-Up search						
CA 8	Wambaugh, John F.; Wetmore, Barbara A.; Pearce, Robert; Strope, Cory; Goldsmith, Rocky; Sluka, James P.; Sedykh, Alexander; Tropsha, Alex; Bosgra, Sieto; et al.	2015	Toxicokinetic triage for environmental chemicals	Toxicological Sciences, (2015) Vol. 147, No. 1, pp. 55-67. CODEN: TOSCF2. ISSN: 1096-0929. Syngenta File No.: CGA173506_12014	Fludioxonil was not included. Using data from existing literature for modelling. Not relevant.	21/95
CA 8.1.1.3	Bro, Elisabeth; Millot, Florian; Decors, Anouk; Devillers, James	2015	Quantification of potential exposure of gray partridge (Perdix perdix) to pesticide active substances in farmlands	Science of the Total Environment, (2015) Vol. 521-522, pp. 315-325. CODEN: STENDL. ISSN: 0048-9697. Syngenta File No.: CGA173506_12012	Fludioxonil was not included.	13/95
CA 8.1.2	Smalling, Kelly L.; Reeves, Rebecca; Muths, Erin; Vandever, Mark; Battaglin, William A.; Hladik, Michelle L.; Pierce, Clay L.	2015	Pesticide concentrations in frog tissue and wetland habitats in a landscape dominated by agriculture	Science of the Total Environment, (2015) Vol. 502, pp. 80-90. CODEN: STENDL. ISSN: 0048-9697. Syngenta File No.: CGA173506_12010	Does not fulfil criteria 8 (effects are not related to a single test item). Field monitoring of wetland sites, therefore could not attribute effects to FDL alone. FDL below limit of detection in sediments (<0.8 ug/kg), and not found in frog liver or whole body tissues. Not relevant.	20/95

CA data point number	Author(s)	Year	Title	Source	Reason(s) for not including the study in the dossier	Ref. ID
CA 8.1.5	Rotroff, Daniel M.; Martin, Matt T.; Dix, David J.; Filer, Dayne L.; Houck, Keith A.; Knudsen, Thomas B.; Sipes, Nisha S.; Reif, David M.; Xia, Menghang; et al.	2014	Predictive Endocrine Testing in the 21st Century Using in Vitro Assays of Estrogen Receptor Signaling Responses	Environmental Science & Technology, (2014) Vol. 48, No. 15, pp. 8706-8716. CODEN: ESTHAG. ISSN: 0013-936X. Syngenta File No.: CGA173506_12016	Fludioxonil was not included.	25/95
CA 8.2.2.1	Ducharme, Nicole A.; Reif, David M.; Gustafsson, Jan-Ake; Bondesson, Maria	2015	Comparison of toxicity values across zebrafish early life stages and mammalian studies: Implications for chemical testing	Reproductive Toxicology, (2015) Vol. 55, pp. 3-10. CODEN: REPTED. ISSN: 0890-6238. Syngenta File No.: CGA173506_12004	No testing conducted. Reviewing existing literature and trying to link with mammalian tox testing results. Not relevant.	24/95
CA 8.2.5.4	Fernandez, Diego; Voss, Katharina; Bundschuh, Mirco; Zubrod, Jochen P.; Schaefer, Ralf B.	2015	Effects of fungicides on decomposer communities and litter decomposition in vineyard streams	Science of the Total Environment, (2015) Vol. 533, pp. 40-48. CODEN: STENDL. ISSN: 0048-9697. Syngenta File No.: CGA173506_12007	Does not fulfil criteria 8 (effects are not related to a single test item). A mixture water tested (azoxystrobin, boscalid, cyprodinil, fludioxonil, kresoxim-methyl, metrafenone, pyrimethanil and tebuconazole). Not relevant.	23/95

CA data point number	Author(s)	Year	Title	Source	Reason(s) for not including the study in the dossier	Ref. ID
CA 8.3.1	Kasiotis, Konstantinos M.; Anagnostopoulos, Chris; Anastasiadou, Pelagia; Machera, Kyriaki	2014	Pesticide residues in honeybees, honey and bee pollen by LC-MS/MS screening: Reported death incidents in honeybees	Science of the Total Environment, (2014) Vol. 485-486, pp. 633-642. CODEN: STENDL. ISSN: 0048-9697. Syngenta File No.: CGA173506_12015	No data to show levels of fludioxonil in bees, honey or pollen nor linked to any bee deaths.	30/95
CA 8.6	Fantke, Peter; Gillespie, Brenda W.; Juraske, Ronnie; Jolliet, Olivier	2014	Estimating Half-Lives for Pesticide Dissipation from Plants	Environmental Science & Technology, (2014) Vol. 48, No. 15, pp. 8588-8602. CODEN: ESTHAG. ISSN: 0013-936X. Syngenta File No.: CGA173506_12011	Proposing a model for predicting crop protection product dissipation from plants.	26/95

All documents listed in Table 9.6-2 were excluded (i.e. listed in Table 9.6-4). No literature references were deemed to be relevant to the ecotoxicology endpoints for fludioxonil and its metabolites, and hence have not been discussed in the Document MCA Section 8.