Reference List of all relevant peer-reviewed publications from the open literature that were submitted for the Renewal of Approval (AIR5) of Glyphosate in 2020

Ecotoxicological Data

The following table lists the relevant publications from the open literature that were selected for inclusion in the renewal dossier as per Article 8.5 of Regulation (EC) No 1107/2009.

A literature search for glyphosate and its metabolites[1] was conducted according to the requirements stated in the EFSA Guidance document EFSA Journal 2011;9(2):2092 "*Submission of scientific peer-reviewed open literature for the approval of pesticide active substances under Regulation (EC) 1107/2009"*. In addition, a recommendation by the Assessment Group on Glyphosate (AGG) on how to present the literature search in the dossier has been followed.

The objective of the literature search was to identify and assess scientific peer-reviewed open literature published within the 10 years prior to the dossier submission date for relevance in the risk assessment of glyphosate and its metabolites regarding toxicity, ecotoxicity, environmental and consumer risk as specified in Article 8.5 of Regulation (EC) No 1107/2009.

The publications were legally obtained by the Glyphosate Renewal Group from the public literature respecting in full all copyrights and are included in Document K.

[1] (aminomethyl)phosphonic acid (AMPA), N-acetyl-AMPA, N-acetyl-glyphosate, (hydroxymethyl)phosphonic acid (HMPA), N-methyl-AMPA, N-glyceryl-AMPA, N-malonyl-AMPA, methylphosphonic acid and N-methylglyphosate.

Section 6 – Ecotoxicology

Data requirement (indicated by the corresponding CA / CP data point number)	Author(s)	Year	Title	Source
KCA 8.1.4	Amaral M. J. et al.	2012	The use of a lacertid lizard as a model for reptile ecotoxicology studies - Part 1 Field demographics and morphology	Chemosphere (2012), Vol. 87, No. 7, pp. 757
KCA 8.1.4	Babalola O. O. et al.	2018	Comparative Early Life Stage Toxicity of the African Clawed Frog, Xenopus laevis Following Exposure to Selected Herbicide Formulations Applied to Eradicate Alien Plants in South Africa.	Archives of Environmental Contamination and Toxicology (2018), Vol. 75, No. 1, pp. 8
KCA 8.1.4	Bach N. C. et al.	2016	Effect on the growth and development and induction of abnormalities by a glyphosate commercial formulation and its active ingredient during two developmental stages of the South-American Creole frog, Leptodactylus latrans.	Environmental science and pollution research international (2016), Vol. 23, No. 23, pp. 23959
KCA 8.1.4	Cothran R. D. et al.	2013	Proximity to agriculture is correlated with pesticide tolerance: evidence for the evolution of amphibian resistance to modern pesticides.	Evolutionary Applications (2013), Vol. 6, No. 5, pp. 832
KCA 8.1.4	Fuentes L. et al.	2014	Role of sediments in modifying the toxicity of two Roundup formulations to six species of larval anurans.	Environmental toxicology and chemistry (2014), Vol. 33, No. 11, pp. 2616
KCA 8.1.4	Gungordu A.	2013	Comparative toxicity of methidathion and glyphosate on early life stages of three amphibian species: Pelophylax ridibundus, Pseudepidalea viridis, and Xenopus laevis.	Aquatic toxicology (2013), Vol. 140-141, pp. 220
KCA 8.1.4	Gungordu A. et al.	2016	Integrated assessment of biochemical markers in premetamorphic tadpoles of three amphibian species exposed to glyphosate- and methidathion-based pesticides in single and combination forms.	Chemosphere (2016), Vol. 144, pp. 2024
KCA 8.1.4	Lenkowski J. R. et al.	2010	Low concentrations of atrazine, glyphosate, 2,4-dichlorophenoxyacetic acid, and triadimefon exposures have diverse effects on Xenopus laevis organ morphogenesis.	Journal of environmental sciences (2010), Vol. 22, No. 9, pp. 1305
KCA 8.1.4	Puglis H. J. et al.	2011	Effects of Technical-Grade Active Ingredient vs. Commercial Formulation of Seven Pesticides in the Presence or Absence of UV Radiation on Survival of Green Frog Tadpoles	Archives of Environmental Contamination and Toxicology (2011), Vol. 60, No. 1, pp. 145
KCA 8.1.4	Ruamthum W. et al.	2011	Effect of glyphosate-based herbicide on acetylcholinesterase activity in tadpoles, Hoplobatrachus rugulosus.	Communications in agricultural and applied biological sciences (2011), Vol. 76, No. 4, pp. 923
KCA 8.1.4	Vincent K. et al.	2015	The toxicity of glyphosate alone and glyphosate-surfactant mixtures to western toad (Anaxyrus boreas) tadpoles.	Environmental toxicology and chemistry (2015), Vol. 34, No. 12, pp. 2791

Data requirement (indicated by the corresponding CA / CP data point number)	Author(s)	Year	Title	Source
KCA 8.1.4	Weir S. M. et al.	2016	Acute toxicity and risk to lizards of rodenticides and herbicides commonly used in New Zealand.	New Zealand Journal of Ecology (2016), Vol. 40, No. 3, pp. 342
KCA 8.1.4	Williams B. K. et al.	2010	Larval responses of three midwestern anurans to chronic, low-dose exposures of four herbicides.	Archives of environmental contamination and toxicology (2010), Vol. 58, No. 3, pp. 819
KCA 8.1.5	Carrasco A. E.	2011	Reply to the letter to the editor regarding our article (Paganelli et al., 2010).	Chemical research in toxicology (2011), Vol. 24, No. 5, pp. 610
KCA 8.1.5	Paganelli A. et al.	2010	Glyphosate-based herbicides produce teratogenic effects on vertebrates by impairing retinoic acid signaling.	Chemical research in toxicology (2010), Vol. 23, No. 10, pp. 1586
KCA 8.2	Cattaneo R. et al.	2011	Toxicological responses of Cyprinus carpio exposed to a commercial formulation containing glyphosate.	Bulletin of environmental contamination and toxicology (2011), Vol. 87, No. 6, pp. 597
KCA 8.2	Filizadeh Y. et al.	2011	Toxicity determination of three sturgeon species exposed to glyphosate.	Iranian Journal of Fisheries Sciences (2011), Vol. 10, No. 3, pp. 383
KCA 8.2	Li Jia et al.	2017	Acute toxicity study of glyphosate and cyhalofop-butyl to Daphnia carinata.	Acta Prataculturae Sinica (2017), Vol. 26, No. 9, pp. 148
KCA 8.2	Li Jiao et al.	2010	Acute Toxicity of Eight Pesticides on the Development of Sea Urchin Embryos.	Asian Journal of Ecotoxicology (2010), Vol. 5, No. 2, pp. 255
KCA 8.2	Puertolas L. et al.	2010	Evaluation of side-effects of glyphosate mediated control of giant reed (Arundo donax) on the structure and function of a nearby Mediterranean river ecosystem.	Environmental research (2010), Vol. 110, No. 6, pp. 556
KCA 8.2	Shiogiri N. S. et al.	2010	Ecotoxicity of glyphosate and aterbane (R) br surfactant on guaru (Phalloceros caudimaculatus).	Acta Scientiarum Biological Sciences (2010), Vol. 32, No. 3, pp. 285
KCA 8.2	Song H.	2010	Toxic action of acetamiprid, glyphosate and their combined pollution on Hydra magnipapillata	Anhui Nongye Kexue (2010), Vol. 38, No. 20, pp. 10811
KCA 8.2	Song H. et al.	2010	The Single and Binary-Combined Acute Toxicities of Five Common Pesticides on Hydra Magnipapillata	Journal of Anhui Normal University (Natural Science) (2010), Vol. 33, no. 2, pp. 159
KCA 8.2, KCP 10.2	Usenko O. M. et al.	2010	Effect of fluorine containing herbicides on functional activity of algae	Gidrobiologicheskii Zhurnal (2010), Vol. 46, No. 1, pp. 75
KCA 8.2.1	Antunes A. M. et al.	2017	Gender-specific histopathological response in guppies Poecilia reticulata exposed to glyphosate or its metabolite aminomethylphosphonic acid.	Journal of applied toxicology (2017), Vol. 37, No. 9, pp. 1098
KCA 8.2.1	Schweizer M. et al.	2019	How glyphosate and its associated acidity affect early development in zebrafish (Danio rerio).	PeerJ (2019), Vol. 7, pp. e7094
KCA 8.2.1	Syedkolaei-Gholami S. J. et al.	2013	Toxicity evaluation of Malathion, Carbaryle and Glyphosate in common carp fingerlings (Cyprinus carpio, Linnaeus, 1758).	Journal of Veterinary Research (2013), Vol. 68, No. 3, pp. 257

Data requirement (indicated by the corresponding CA / CP data point number)	Author(s)	Year	Title	Source
KCA 8.2.1	Alishahi M. et al.	2019	Comparative toxicities of five herbicides on nauplii of Artemia franciscana as an ecotoxicity bioindicator.	IRANIAN JOURNAL OF FISHERIES SCIENCES (2019), Vol. 18, No. 4, pp. 716
KCA 8.2.1	Alishahi M. et al.	2016	Acute toxicity evaluation of five herbicides: paraquat, 2,4-dichlorophenoxy acetic acid (2,4-D), trifluralin, glyphosite and atrazine in Luciobarbus esocinus fingerlings.	Iranian Journal of Veterinary Medicine (2016), Vol. 10, No. 4, pp. 319
KCA 8.2.1	Ayanda O. I. et al.	2015	Acute toxicity of glyphosate and paraquat to the African catfish (Clarias gariepinus, Teugels 1986) using some biochemical indicators	Tropical zoology (2015), Vol. 28, No. 4, pp. 152
KCA 8.2.1	da Cruz C. et al.	2016	Sensitivity, ecotoxicity and histopathological effects on neotropical fish exposed to glyphosate alone and associated to surfactant	Journal of Environmental Chemistry and Ecotoxicology (2016), Vol. 8, No. 3, pp. 25
KCA 8.2.1	Druart C. et al.	2017	A full life-cycle bioassay with Cantareus aspersus shows reproductive effects of a glyphosate-based herbicide suggesting potential endocrine disruption.	Environmental pollution (2017), Vol. 226, pp. 240
KCA 8.2.1	Gaur H. et al.	2019	Glyphosate induces toxicity and modulates calcium and NO signaling in zebrafish embryos.	Biochemical and biophysical research communications (2019 Vol. 513, No. 4, pp. 1070
KCA 8.2.1	Isaac A. O. et al.	2017	Behavioural and some physiological assessment of glyphosate and paraquat toxicity to juveniles of African catfish, Clarias gariepinus.	Pakistan Journal of Zoology (2017), Vol. 49, No. 1, pp. 183
KCA 8.2.1	Jofre D. M. et al.	2013	Fish Toxicity of Commercial Herbicides Formulated With Glyphosate	Journal of Environmental & Analytical Toxicology. Vol. 4, no. 1, pp. 1
KCA 8.2.1	Le Mer C. et al.	2013	Effects of chronic exposures to the herbicides atrazine and glyphosate to larvae of the threespine stickleback (Gasterosteus aculeatus).	Ecotoxicology and environmental safety (2013), Vol. 89, pp. 174
KCA 8.2.1	Prevot-D'Alvise N. et al.	2013	Acute toxicity of a commercial glyphosate formulation on European sea bass juveniles (Dicentrarchus labrax L.): gene expressions of heme oxygenase-1 (ho-1), acetylcholinesterase (AChE) and aromatases (cyp19a and cyp19b).	Cellular and molecular biology (2013), Vol. 59 Suppl, pp. OL1906
KCA 8.2.1	Rahnama R. et al.	2018	Acute toxicity of herbicides on the survival of adult shrimp, Artemia Franciscana	Iranian Journal of Toxicology (2018), Vol. 12, No. 6, pp. 45
KCA 8.2.1	Sadeghi A. et al.	2014	Investigation of LC50, NOEC and LOEC of glyphosate, deltamethrin and pretilachlor in guppies (Poecilia reticulata)	Iranian Journal of Toxicology (2014), Vol. 8, No. 26, pp. 1124
KCA 8.2.1	Saska P. et al.	2017	Treating Prey With Glyphosate Does Not Alter the Demographic Parameters and Predation of the Harmonia axyridis (Coleoptera: Coccinellidae).	Journal of economic entomology (2017), Vol. 110, No. 2, pp. 392

Data requirement (indicated by the corresponding CA / CP data point number)	Author(s)	Year	Title	Source
KCA 8.2.1	Uchida M. et al.	2012	Toxicity evaluation of glyphosate agrochemical components using Japanese medaka (Oryzias latipes) and DNA microarray gene expression analysis	The Journal of toxicological sciences (2012), Vol. 37, No. 2, pp. 245
KCA 8.2.1	Velasques R. R. et al.	2016	Roundup(®) in Zebrafish: Effects on Oxidative Status and Gene Expression.	Zebrafish (2016), Vol. 13, No. 5, pp. 432
KCA 8.2.1	Yusof S. et al.	2014	Effect of glyphosate-based herbicide on early life stages of Java medaka (Oryzias javanicus): a potential tropical test fish.	Marine pollution bulletin (2014), Vol. 85, No. 2, pp. 49
KCA 8.2.1	Zhang S. et al.	2017	Biological impacts of glyphosate on morphology, embryo biomechanics and larval behavior in zebrafish (Danio rerio).	Chemosphere (2017), Vol. 181, pp. 270
KCA 8.2.1, KCP 10.2.1	Chandrasekera W. U. et al.	2011	The lethal impacts of Roundup® (glyphosate) on the fingerlings of guppy, Poecilia reticulata Peters, 1859.	Asian Fisheries Science (2011), Vol. 24, No. 4, pp. 367
KCA 8.2.1, KCP 10.2.1	Xie RuiTao et al.	2010	The acute toxicity of five pesticides to yellow catfish Pelteobagrus vachelli.	Fisheries Science (2010), Vol. 29, No. 5, pp. 274
KCA 8.2.1, KCP 10.2.1	Gabriel U. U. et al.	2010	Toxicity of roundup (a glyphosate product) to fingerlings of Clarias gariepinus.	Animal Research International (2010), Vol. 7, No. 2, pp. 1184
KCA 8.2.2	Panetto O. S. et al.	2019	The effects of Roundup® in embryo development and energy metabolism of the zebrafish (Danio rerio)	Comparative biochemistry and physiology (2019), Vol. 222, pp. 74
KCA 8.2.2, KCA 8.2.3, KCP 10.2.2, KCP 10.2.3	Uren Webster T. M. et al.	2014	Effects of glyphosate and its formulation, roundup, on reproduction in zebrafish (Danio rerio).	Environmental science & technology (2014), Vol. 48, No. 2, pp. 1271
KCA 8.2.2, KCA 8.2.5	Levine S. L. et al.	2015	Aminomethylphosphonic acid has low chronic toxicity to Daphnia magna and Pimephales promelas.	Environmental toxicology and chemistry (2015), Vol. 34, No. 6, pp. 1382
KCA 8.2.2.1	de Brito Rodrigues L. et al.	2019	Impact of the glyphosate-based commercial herbicide, its components and its metabolite AMPA on non-target aquatic organisms.	Mutation research (2019), Vol. 842, pp. 94
KCA 8.2.2.1, KCP 10.2.3	Lugowska K.	2018	The effects of Roundup on gametes and early development of common carp (Cyprinus carpio L)	Fish physiology and biochemistry (2018), Vol. 44, No. 4, pp. 1109
KCA 8.2.3	Xia S. et al.	2013	Induction of vitellogenin gene expression in medaka exposed to glyphosate and potential molecular mechanism	Zhongguo Huanjing Kexue (2013), Vol. 33, No. 9, pp. 1656
KCA 8.2.4	Alhewairini S. S.	2017	Toxicity of the herbicide glyphosate to non-target species Caenorhabditis elegans.	Journal of Food, Agriculture & Environment (2017), Vol. 15, No. 2, pp. 97
KCA 8.2.4	Avigliano L. et al.	2014	Effects of glyphosate on growth rate, metabolic rate and energy reserves of early juvenile crayfish, Cherax quadricarinatus M.	Bulletin of environmental contamination and toxicology (2014), Vol. 92, No. 6, pp. 631

Data requirement (indicated by the corresponding CA / CP data point number)	Author(s)	Year	Title	Source
KCA 8.2.4	Cordova Lopez A. M. et al.	2019	Exposure to Roundup® affects behaviour, head regeneration and reproduction of the freshwater planarian Girardia tigrina	Science of the total environment (2019), Vol. 675, pp. 453
KCA 8.2.4	Demetrio P. M. et al.	2012	Effects of pesticide formulations and active ingredients on the coelenterate Hydra attenuata (Pallas, 1766).	Bulletin of environmental contamination and toxicology (2012), Vol. 88, No. 1, pp. 15
KCA 8.2.4	Hansen L. R. et al.	2016	Behavioral responses of juvenile Daphnia magna after exposure to glyphosate and glyphosate-copper complexes.	Aquatic toxicology (2016), Vol. 179, pp. 36
KCA 8.2.4	Kumar M. S. A. et al.	2013	Toxic impacts of two organophosphorus pesticides on the acetylcholinesterase activity and biochemical composition of freshwater fairy shrimp Streptocephalus dichotomus.	International Journal of Pharma and Bio Sciences (2013), Vol. 4, No. 2, pp. B-966
KCA 8.2.4	Reno U. et al.	2016	EFECTOS SUBLETALES DE CUATRO FORMULACIONES DE GLIFOSATO SOBRE Daphnia magna Y Ceriodaphnia dubia (CRUST ACEA, CLADOCERA)	Natura Neotropicalis (2016), Vol. 47, No. 1, pp. 7
KCA 8.2.4	Ruiz-Gonzalez E. L. et al.	2018	Assessment of median lethal concentration (CL50) of pollutants on Macrobrachium tenellum juveniles	Latin American Journal of Aquatic Research (2018), Vol. 46, No. 3, pp. 589
KCA 8.2.4	Xu Y-g. et al.	2015	Joint Toxicity of Glyphosate and As(III)to Daphnia magna in Aquatic Environment	Journal of Agro-Environment Science (2015), Vol. 34, No. 11, pp. 2076
KCA 8.2.4, KCP 10.2.2	Deepananda K. H. M. A. et al.	2011	Acute toxicity of a glyphosate herbicide, Roundup (R), to two freshwater crustaceans.	Journal of the National Science Foundation of Sri Lanka (2011), Vol. 39, No. 2, pp. 169
KCA 8.2.4.1, KCA 8.6, KCA 8.7	Sihtmaee M. et al.	2013	Ecotoxicological effects of different glyphosate formulations	Applied soil ecology (2013), Vol. 72, pp. 215
KCA 8.2.4.1, KCP 10.2.1	Boonsoong B. et al.	2012	Acute toxicity of Roundup and carbosulfan to the Thai fairy shrimp, Branchinella thailandensis.	Communications in agricultural and applied biological sciences (2012), Vol. 77, No. 4, pp. 431
KCA 8.2.4.1, KCP 10.2.1	Demetrio P. M. et al.	2014	The effect of cypermethrin, chlorpyrifos, and glyphosate active ingredients and formulations on Daphnia magna (Straus).	Bulletin of environmental contamination and toxicology (2014), Vol. 93, No. 3, pp. 268
KCA 8.2.4.2, KCA 8.2.5.2	Liu Xiao-wei et al.	2012	Toxicological effect of paraquat and glyphosate on cladoceran Moina macrocopa.	Shengtaixue Zazhi (2012), Vol. 31, No. 8, pp. 1984
KCA 8.2.6	Dabney B. L. et al.	2018	Low-dose stimulation of growth of the harmful alga, Prymnesium parvum, by glyphosate and glyphosate-based herbicides.	Harmful algae (2018), Vol. 80, pp. 130
KCA 8.2.6	Issa A. A. E. et al.	2013	Alterations in some metabolic activities of Scenedesmus quadricauda and Merismopedia glauca in response to glyphosate herbicide.	Journal of Biology and Earth Sciences (2013), Vol. 3, No. 1, pp. B17

Data requirement (indicated by the corresponding CA / CP data point number)	Author(s)	Year	Title	Source
KCA 8.2.6	Lam C. H. et al.	2020	Toxicity of herbicides to cyanobacteria and phytoplankton species of the San Francisco Estuary and Sacramento-San Joaquin River Delta, California, USA.	Journal of environmental science and health. Part A, Toxic/hazardous substances & environmental engineering (2020), Vol. 5, pp. 107
KCA 8.2.7	de Campos Oliveira R. et al.	2016	Assessment of the potential toxicity of glyphosate-based herbicides on the photosynthesis of Nitella microcarpa var. wrightii (Charophyceae)	Phycologia (2016), Vol. 55, no. 5, pp. 577
KCA 8.2.7	de Jesus Veloso Castro A. et al.	2015	Using a toxicity test with Ruppia maritima (Linnaeus) to assess the effects of Roundup.	Marine pollution bulletin (2015), Vol. 91, No. 2, pp. 506
KCA 8.2.7	Pereira P. C. et al.	2019	Acute Toxicity of Herbicides and Sensibility of Aquatic Plant Wolffia brasiliensis as a Bioindicator Organism	Planta Daninha (2019), Vol. 37, pp. e019201636
KCA 8.2.7	Rzymski P. et al.	2013	The effect of glyphosate-based herbicide on aquatic organisms - a case study.	Limnological Review (2013), Vol. 13, No. 4, pp. 215
KCA 8.2.7.	Tian Y. et al.	2015	Growth inhibition of two herbicides on Spirodela polyrrhiza	Nongyao Kexue Yu Guanli (2015), Vol. 36, pp 61
KCA 8.2.8	Daam M. A. et al.	2019	Lethal toxicity of the herbicides acetochlor, ametryn, glyphosate and metribuzin to tropical frog larvae.	Ecotoxicology (2019), Vol. 28, pp. 707
KCA 8.2.8	Abdulkareem S. I. et al.	2015	Histopathological effects of lethal and sub-lethal concentrations of glyphosate on gills and liver of African catfish, Clarias gariepinus.	Journal of Aquatic Sciences (2015), Vol. 30, No. 1, pp. 53
KCA 8.2.8	Abdulkareem S. I. et al.	2013	Effects of sub-lethal concentrations of glyphosate on behaviour and some biochemical parameters of African catfish (Clarias gariepinus)	Proceedings of the 28th annual conference of the Fisheries Society of Nigeria (2013), pp. 188
KCA 8.2.8	Agbon A. O. I. et al.	2014	The potential impact of Glyphosate on captured fisheries productivity and sustainability	Proceedings of the 29th annual conference of the Fisheries Society of Nigeria (2014), pp. 17
KCA 8.2.8	Mohamed I. A-w. et al.	2016	Unique efficacy of certain novel herbicides against Culex pipiens (Diptera: Culicidae) mosquito under laboratory conditions	Advances in Environmental Biology (2016), Vol. 10, No. 8, pp. 104
KCA 8.2.8	Mottier A. et al.	2013	Effects of glyphosate-based herbicides on embryo-larval development and metamorphosis in the Pacific oyster, Crassostrea gigas.	Aquatic toxicology (2013), Vol. 128-129, pp. 67
KCA 8.2.8	Yang X. et al.	2019	Effects of the glyphosate-based herbicide roundup on the survival, immune response, digestive activities and gut microbiota of the Chinese mitten crab, Eriocheir sinensis	Aquatic toxicology (2019), Vol. 214, pp. 105243
KCA 8.2.8, KCP 10.2.1	Panwen M. et al.	2013	Acute toxicity of pesticides glyphosate and paraquat on river snails	Siliao Yanjiu (2013) No. 11, pp. 44
KCA 8.2.8, KCP 10.2.3	Xu Y. et al.	2010	Acute Toxicity of Ten Pesticides to Larval Red Swamp Crayfish Procambarus Clarkii.	Asian Journal of Ecotoxicology (2010), Vol. 5, No. 1, pp. 50.

Data requirement (indicated by the corresponding CA / CP data point number)	Author(s)	Year	Title	Source
KCA 8.3	Baglan H. et al.	2018	Glyphosate impairs learning in Aedes aegypti mosquito larvae at field-realistic doses.	The Journal of experimental biology (2018), Vol. 221, No. 20, pp 1
KCA 8.3	Bara J. J. et al.	2014	Sublethal effects of atrazine and glyphosate on life history traits of Aedes aegypti and Aedes albopictus (Diptera: Culicidae).	Parasitology research (2014), Vol. 113, No. 8, pp. 2879
KCA 8.3	Castilhos R. V. et al.	2014	Selectivity of pesticides used in peach orchards on eggs and pupae of the predator Chrysoperla externa. Seletividade de agrotoxicos utilizados em pessegueiro sobre ovos e pupas do predador Chrysoperla externa.	Ciencia Rural (2014), Vol. 44, No. 11, pp. 1921
KCA 8.3	Leccia F. et al.	2016	Disruption of the chemical communication of the European agrobiont groundaX80X90dwelling spider Pardosa agrestis by pesticides	Journal of applied entomology (2016), Vol. 140, No. 8, pp. 609
KCA 8.3	Pasini R. A. et al.	2018	Comparative selectivity of herbicides used in wheat crop on the predators Chrysoperla externa and Eriopis connexa	Planta Daninha (2018), Vol. 36,pp. E018179968
KCA 8.3	Saska P. et al.	2016	Treatment by glyphosate-based herbicide alters life history parameters of the rose-grain aphid Metopolophium dirhodum.	Scientific reports (2016), Vol. 6, pp. 27801
KCA 8.3	Stecca C. S. et al.	2016	Side-Effects of Glyphosate to the Parasitoid Telenomus remus Nixon (Hymenoptera: Platygastridae).	Neotropical entomology (2016), Vol. 45, No. 2, pp. 192
KCA 8.3	Tahir H. M. et al.	2019	Effect of Pesticides on Biological Control Potential of Neoscona theisi (Araneae: Araneidae)	JOURNAL OF INSECT SCIENCE (2019), Vol. 19, No. 2, pp. 1
KCA 8.3.1	Fagundez G. A. et al.	2016	Do agrochemicals used during soybean flowering affect the visits of Apis mellifera L.?	Spanish Journal of Agricultural Research (2016), Vol. 14, No. 1, p. e0301
KCA 8.3.1	Liao L-H. et al.	2017	Behavioral responses of honey bees (Apis mellifera) to natural and synthetic xenobiotics in food.	Scientific reports (2017), Vol. 7, No. 1, pp. 15924
KCA 8.3.1	Tome H. V. V. et al.	2020	Frequently encountered pesticides can cause multiple disorders in developing worker honey bees.	Environmental pollution (2020), Vol. 256, pp. 113420
KCA 8.3.1	Vazquez D. E. et al.	2018	Glyphosate affects the larval development of honey bees depending on the susceptibility of colonies	PLoS One (2018), Vol. 13, No. 10, pp. E0205074
KCA 8.3.1, KCP 10.3.1	Dai P. et al.	2018	The Herbicide Glyphosate Negatively Affects Midgut Bacterial Communities and Survival of Honey Bee during Larvae Reared in Vitro.	Journal of agricultural and food chemistry (2018), Vol. 66, No. 29, pp. 7786
KCA 8.3.1.2	Blot N. et al.	2019	Glyphosate, but not its metabolite AMPA, alters the honeybee gut microbiota	PloS one (2019), Vol. 14, No. 4, pp. e0215466
KCA 8.3.1.2	Motta E. V. S. et al.	2018	Glyphosate perturbs the gut microbiota of honey bees.	Proceedings of the National Academy of Sciences of the United States of America (2018), Vol. 115, No. 41, pp. 10305

Data requirement (indicated by the corresponding CA / CP data point number)	Author(s)	Year	Title	Source
KCA 8.3.1.3, KCP 10.3.1.5	Thompson H. M. et al.	2014	Evaluating exposure and potential effects on honeybee brood (Apis mellifera) development using glyphosate as an example.	Integrated environmental assessment and management (2014), Vol. 10, No. 3, pp. 463
KCA 8.3.1.4, KCP 10.3.1.4	Balbuena M. S. et al.	2015	Effects of sublethal doses of glyphosate on honeybee navigation.	The Journal of experimental biology (2015), Vol. 218, No. 17, pp. 2799
KCA 8.3.2, KCP 10.3.2	Castilhos R. V. et al.	2011	Selectivity of pesticides used in peach orchard on adults of Chrysoperla externa (Hagen, 1861) (Neuroptera: Chrysopidae). Original title: Seletividade de agrotoxicos utilizados em pomares de pessego a adultos do predador Chrysoperla externa (Hagen, 1861) (Neuroptera: Chrysopidae).	Revista Brasileira de Fruticultura (2011), Vol. 33, No. 1, pp. 73
KCA 8.3.2, KCP 10.3.2	Lu Li-li et al.	2010	Effects of glyphosate on the growth and development of Agasicles hygrophila	Huanan Nongye Daxue Xuebao (2010), Vol. 31, pp. 22
KCA 8.3.2, KCP 10.3.2	Rainio M. J. et al.	2019	Effects of a glyphosate-based herbicide on survival and oxidative status of a non-target herbivore, the Colorado potato beetle (Leptinotarsa decemlineata)	Comparative biochemistry and physiology. Toxicology & pharmacology (2019), Vol. 215, pp. 47
KCA 8.3.2, KCP 10.3.2	You W-y. et al.	2010	Toxicity Evaluation of Sixteen Herbicides to Bombyx mori.	Asian Journal of Ecotoxicology (2010), Vol. 5, No. 1, pp. 91
KCA 8.3.2, KCP 10.3.2	Zhang Q. et al.	2011	An evaluation on acute toxicity of 29 pesticides to Bombyx mori	Canye Kexue (2011), Vol. 37, No. 2, pp. 343
KCA 8.4, KCP 10.4.2.2	Santos M. J. G. et al.	2012	Pesticide application to agricultural fields: effects on the reproduction and avoidance behaviour of Folsomia candida and Eisenia andrei.	Ecotoxicology (2012), Vol. 21, No. 8, pp. 2113
KCA 8.4.1	Dominguez A. et al.	2016	Toxicity of AMPA to the earthworm Eisenia andrei Bouche, 1972 in tropical artificial soil.	Scientific reports (2016), Vol. 6, pp. 19731
KCA 8.4.1	Hackenberger Davorka K. et al.	2018	Acute and subchronic effects of three herbicides on biomarkers and reproduction in earthworm Dendrobaena veneta.	Chemosphere (2018), Vol. 208, pp. 722
KCA 8.4.1	Jarmul-Pietraszczyk J. et al.	2012	Herbicide toxicity to the California earthworms Eisenia fetida Sav. and Dendrobaena veneta Rosa	Ecological Chemistry and Engineering A (2012), Vol. 19, No. 9, pp. 1133
KCA 8.4.1	Pochron S. et al.	2020	Glyphosate but not Roundup® harms earthworms (Eisenia fetida).	Chemosphere (2020), Vol. 241, pp. 125017
KCA 8.4.1	Santadino M. et al.	2014	Glyphosate Sublethal Effects on the Population Dynamics of the Earthworm Eisenia fetida (Savigny, 1826)	Water, air, and soil pollution (2014), Vol. 225, No. 12, pp. 2207
KCA 8.4.1	Stellin F. et al.	2017	Effects of different concentrations of glyphosate (Roundup 360A®) on earthworms (Octodrilus complanatus, Lumbricus terrestris and Aporrectodea caliginosa) in vineyards in the North-East of Italy	Applied soil ecology (2018), Vol. 123, pp 802

Data requirement (indicated by the corresponding CA / CP data point number)	Author(s)	Year	Title	Source
KCA 8.4.1, KCA 8.4.2.1, KCA 8.5	von Merey G. et al.	2016	Glyphosate and aminomethylphosphonic acid chronic risk assessment for soil biota	Environmental toxicology and chemistry (2016), Vol. 35, pp. 2742
KCA 8.4.2	Correia F. V. et al.	2010	Effects of glyphosate and 2,4-D on earthworms (Eisenia foetida) in laboratory tests.	Bulletin of environmental contamination and toxicology (2010), Vol. 85, No. 3, pp. 264
KCA 8.4.2	Druart C. et al.	2010	Towards the development of an embryotoxicity bioassay with terrestrial snails: screening approach for cadmium and pesticides.	Journal of hazardous materials (2010), Vol. 184, No. 1-3, pp. 26
KCA 8.4.2	Garcia-Torres T. et al.	2014	Exposure assessment to glyphosate of two species of annelids.	Bulletin of environmental contamination and toxicology (2014), Vol. 93, No. 2, pp. 209
KCA 8.4.2	Nevius B. A. et al.	2012	Surface-functionalization effects on uptake of fluorescent polystyrene nanoparticles by model biofilms.	Ecotoxicology (2012), Vol. 21, No. 8, pp. 2205
KCA 8.4.2	Rose M. T. et al.	2018	Minor effects of herbicides on microbial activity in agricultural soils are detected by N-transformation but not enzyme activity assays	European journal of soil biology (2018), Vol. 87, pp. 72
KCA 8.4.2	Ulu T. C. et al.	2016	Effects of different pesticides on virulence and mortality of some entomopathogenic nematodes.	ISJ-Invertebrate Survival Journal (2016), Vol. 13, pp. 111
KCA 8.5	Bortoli P. V. et al.	2012	Effects of glyphosate on microbial community structure and activity in two soils under olive plantations. Original Title: Efectos del herbicida glifosato sobre la estructura y el funcionamiento de comunidades microbianas de dos suelos de plantaciones de olivo.	Ecologia Austral (2012), Vol. 22, No. 1, pp. 33
KCA 8.5	Nathan V. K. et al.	2020	Pesticide application inhibit the microbial carbonic anhydrase-mediated carbon sequestration in a soil microcosm.	Environmental science and pollution research international (2020), Vol. 27, pp. 4468
KCA 8.5	Nunez S. et al.	2015	In vitro effect of N-(phosphonomethyl) glycine agrochemicals on total heterotrophic bacteria and azotobacter chroococcum.	Biocell (2015), Vol. 39, Suppl. 1. Abstract No.: A71.
KCA 8.5	Samal S. et al.	2019	Evaluating the effect of monocrotophos and glyphosate on microbial population and certain important exoenzyme activities in soil.	Journal of Environmental Biology (2019), Vol. 40, No. 2, pp. 226
KCA 8.5	Sun Q. et al.	2012	Effects of typical herbicides on soil respiration and N2O emissions from soil added with different nitrogen fertilizers.	Huan jing ke xue= Huanjing kexue (2012), Vol. 33, No. 6, pp. 1994
KCA 8.6	Aguilar-Dorantes K. et al.	2015	Glyphosate Susceptibility of Different Life Stages of Three Fern Species	American fern journal (2015), Vol. 105, No. 3, pp. 131
KCA 8.6	Allison J. E. et al.	2013	Influence of soil organic matter on the sensitivity of selected wild and crop species to common herbicides.	Ecotoxicology ((2013), Vol. 22, No. 8, pp. 1289
KCA 8.6	Barriuso J. et al.	2011	Effect of the herbicide glyphosate on the culturable fraction of glyphosate-tolerant maize rhizobacterial communities using two different growth media.	Microbes and environments (2011), Vol. 26, No. 4, pp. 332

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KCA 8.6	Bott S. et al.	2011	Phytotoxicity of glyphosate soil residues re-mobilised by phosphate fertilisation	Plant and soil (2011), Vol. 342, No. 1-2, pp. 249
KCA 8.6	Carvalho L. B. et al.	2016	Plant Growth Responses of Apple and Pear Trees to Doses of Glyphosate	Planta Daninha (2016), Vol. 34, No. 4, pp. 815
KCA 8.6	Claassens A. et al.	2019	Soilborne glyphosate residue thresholds for wheat seedling metabolite profiles and fungal root endophyte colonisation are lower than for biomass production in a sandy soil.	Plant and Soil (2019), Vol. 438, No. 1/2, pp. 393
KCA 8.6	Helander M. et al.	2019	Glyphosate residues in soil affect crop plant germination and growth.	Scientific reports (2019), Vol. 9, No. 1, pp. 19653
KCA 8.6	Kennedy E. et al.	2012	Herbiciding Phragmites australis: effects on litter decomposition, microbial biomass, and macroinvertebrate communities.	Fundamental and Applied Limnology (2012), Vol. 180, No. 4, pp. 309
KCA 8.6	Lin JingWen et al.	2015	Toxic effect of glyphosate on seed germination and seedling growth of Chinese fir.	Acta Agriculturae Universitatis Jiangxiensis (2015), Vol. 37, No. 5, pp. 843
KCA 8.6	Panettieri M. et al.	2013	Glyphosate effect on soil biochemical properties under conservation tillage	Soil & tillage research (2013), Vol. 133, pp. 16
KCA 8.6	Piotrowicz-Cieslak A. I. et al.	2010	Different Glyphosate Phytotoxicity of Seeds and Seedlings of Selected Plant Species.	Polish Journal of Environmental Studies (2010), Vol. 19, No. 1, pp. 123
KCA 8.6	Schwan-Stoffel A. V. et al.	2012	The effect of herbicides on the germination of urediniospores of Phakopsora Pachyrhizi SYD. & P. SYD. Original Title: Germinacao de Phakopsora Pachyrhizi SID. & P. SID. Sob diferentes herbicidas.	Arquivos do Instituto Biologico Sao Paulo (2012), Vol. 79, No. 3, pp. 381
KCA 8.6.2	Cavusoglu K. et al.	2011	Investigation of toxic effects of the glyphosate on Allium cepa.	Tarim Bilimleri Dergisi (2011), Vol. 17, No. 2, pp. 131
KCA 8.6.2	Jain S. et al.	2012	Herbicidal action on germination, amylase activity and gibberellin level in Cajanus cajan (L.).	Bioscience Discovery Journal (2012), Vol. 3, No. 2, pp. 232
KCA 8.6.2	Salgado T. P. et al.	2011	Initial symptoms of Eucalyptus intoxication by glyphosate rates applied on the stem or leaves. Sintomas da intoxicacao inicial de Eucalyptus proporcionados por subdoses de glyphosate aplicadas no caule ou nas folhas.	Planta Daninha (2011), Vol. 29, No. 4, pp. 913
KCA 8.6.2	Truta E. et al.	2011	Evaluation of Roundup-induced toxicity on genetic material and on length growth of barley seedlings.	Acta biologica Hungarica (2011), Vol. 62, No. 3, pp. 290
KCA 8.7	Damgaard C. et al.	2014	The effect of glyphosate on the growth and competitive effect of perennial grass species in semi-natural grasslands.	Journal of environmental science and health. Part. B, Pesticides, food contaminants, and agricultural wastes (2014), Vol. 49, No. 12, pp. 897

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KCA 8.7	Druart C. et al.	2011	Glyphosate and glufosinate-based herbicides: fate in soil, transfer to, and effects on land snails	Journal of soils and sediments (2011), Vol. 11, No. 8, pp. 1373
KCA 8.7	Emmanuel L. D. A. et al.	2015	Effect of glyphosate on Bacillus megaterium with reference to tea ecosystem.	International Journal of Tea Science (2015), Vol. 11, No. 3/4, pp. 16
KCA 8.7	Jacques M. T. et al.	2019	Reprotoxicity of glyphosate-based formulation in Caenorhabditis elegans is not due to the active ingredient only.	Environmental pollution (2019), Vol. 252, No. Pt B, pp. 1854
KCA 8.7	Ranganathaswamy M. et al.	2012	Evaluation of toxicity of agrochemicals on Trichoderma isolates in vitro.	Journal of Biological Control (2012), Vol. 26, No. 4, pp. 391
KCA 8.9	Dennis P. G. et al.	2018	The effects of glyphosate, glufosinate, paraquat and paraquat-diquat on soil microbial activity and bacterial, archaeal and nematode diversity	Scientific Reports (2018), Vol. 8, pp. 1
KCA 8.9	Rahman F. et al.	2019	Evaluation of Glyphosate Levels in Sediments of Milky Stork Foraging Areas in Kuala Gula Bird Sanctuary, Perak, Malaysia.	Pertanika Journal of Tropical Agricultural Science (2019), Vol. 42, No. 3, pp. 995
KCP 10.3.2	Siddhapara M. R. et al.	2012	Toxicity of some commonly used insecticides/herbicides on Zygogramma bicolorata Pallister (Coleoptera: Chrysomelidae).	Journal of Biological Control (2012), Vol. 26, No. 3, pp. 251