

Supplementary Information

Comparison of pesticide contamination between captive-reared and wild grey partridges: insights into environmental exposure disparities

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Table S1. Characteristics of the 29 pesticides detected in the 35 captive partridges blood samples ordered by type and occurrence numbers. Lab species for the Bird LD50: *Colinus virginianus*, *Coturnix. c. japonica*, *Anas platyrhynchos*, *Phasianus sp.*, *Serinus canaria*. EC Regulation 1107/2009 status. Farm mean farming use, Dom mean domestic use. *** not a pesticide, may be authorised at national level under different legislation.

Type	Name	Chemical family	Use	EC regulation	Expiration of approval	Bird LD50 (mg.kg ⁻¹)	LOD × 10 ⁻³ (mg.kg ⁻¹)	LOQ × 10 ⁻³ (mg.kg ⁻¹)	Detected samples	
FUNGICIDE	Diphenylamine	Amine	Farm	disapproved	2012	>2250	0.001	0.004	31	
	Tolyfluanid	Sulfonamide	Farm	disapproved	2007	>2000	0.008	0.025	21	
	Carbendazim	Benzimidazole	Dom	disapproved	2014	>2250	0.004	0.014	5	
	Cyprodinil	Anilino-pyrimidine	Farm	approved	-	>500	0.001	0.004	5	
	S-Metolachlor	Chloroacetamide	Farm	approved	-	>2000	0.01	0.032	4	
	Quinoxifen	Quinolein	Farm	disapproved	2019	>2250	0.005	0.016	4	
	Flusilazole	Triazole	Farm	disapproved	2008	>1590	0.014	0.048	3	
	Myclobutanil	Triazole	Farm, Dom	disapproved	2021	>510	0.021	0.071	3	
	Penconazole	Triazole	Farm	approved	-	>1590	0.001	0.003	2	
	Pyrimethanil	Pyridine	Farm	approved	-	>2000	0.15	0.5	2	
	Epoxiconazole	Triazole	Farm	disapproved	2020	>2000	0.003	0.009	1	
	Fenpropidin	Piperidin	Farm	approved	-	>1899	0.008	0.025	1	
	Fenpropimorph	Morpholin	Farm	disapproved	2019	>2000	0.003	0.009	1	
	Tebuconazole	Triazole	Farm	approved	-	>1988	0.001	0.005	1	
	HERBICIDE	Bifenox	Diphenyl-ether	Farm	approved	-	>2000	0.001	0.004	20
		Pendimethalin	Dinitroanilin	Farm	approved	-	>1421	0.025	0.083	6
		Dimethenamid-P	Chloroacetamide	Farm	approved	-	>1068	0.028	0.094	4
		Alachlor	Chloroacetamide	Farm	disapproved	2006	>1536	0.028	0.093	3
		Diflufenican	Carboxamide	Farm	approved	-	>2150	0.003	0.01	3
		Propyzamid	Benzonitrile	Farm	approved	-	>6578	0.002	0.007	3
Carbetamide		Carbamates	Farm, Dom	disapproved	2021	>2000	0.005	0.018	2	
Trifluralin		Dinitroaniline	Farm	disapproved	2010	>2250	0.008	0.028	2	
Clomazone		Isoxazolidinone	Farm	approved	-	>2224	0.012	0.04	1	
Dimethachlore		Chloroacetamide	Farm	approved	-	>524	0.028	0.094	1	
Isoxaf lutole		Isoxazole	Farm	approved	-	>2150	0.038	0.128	1	
Triflusalufuron-methyl		Sulfonylurea	Farm	approved	-	>2250	0.001	0.004	1	
INSECTICIDE		Nitenpyram	Neonicotinoid	Dom	***	-	>1124	0.009	0.03	31
		Thiametoxam	Neonicotinoid	Farm	disapproved	2018	>576	0.012	0.041	4
		Thiacloprid	Neonicotinoid	Farm	disapproved	2018	>35	0.001	0.005	1

Table S2. Characteristics of the 50 pesticides detected in the 54 wild partridges blood samples ordered by type and occurrence numbers. Lab species for the Bird LD50: *Colinus virginianus*, *Coturnix. c. japonica*, *Anas platyrhynchos*, *Phasianus sp.*, *Serinus canaria*. EC Regulation refers to the EC regulation 1107/2009 status with year of approval expiration. Farm mean farming use, Dom mean domestic use. *** not a pesticide, may be authorised at national level under different legislation; ND mean that LOD and LOQ could not have been determined.

Type	Name	Chemical family	Use	EC regulation	Expiration of approval	Bird LD50 (mg.kg ⁻¹)	LOD × 10 ⁻³ (mg.kg ⁻¹)	LOQ × 10 ⁻³ (mg.kg ⁻¹)	Detected samples
FUNGICIDE									
	Cyproconazole	Triazole	Farm	disapproved	2021	94	0.019	0.064	53
	Epoxiconazole	Triazole	Farm	disapproved	2020	2000	0.003	0.009	53
	Etridiazole	Heteroaromatic	Farm	disapproved	2021	560	0.188	0.625	50
	Triadimenol	Triazole	Farm	disapproved	2019	2000	0.053	0.175	45
	Trifloxystrobin	Oximino-acetate	Farm	approved	-	2000	0.039	0.132	45
	Carbendazim	Amine	Dom	disapproved	2014	2250	0.004	0.014	29
	Diphenylamine	Sulfonamide	Farm	disapproved	2012	2250	0.001	0.004	26
	Tolyflumid	Pyrazole carboxamide	Farm	disapproved	2007	2000	0.008	0.025	13
	Isopyrazam	Pyrazole carboxamide	Farm	disapproved	2022	2000	0.011	0.038	12
	Fenpropidin	Piperidin	Farm	approved	-	1899	0.008	0.025	8
	Metaxyl_M	Phenylamide	Farm	approved	-	981	0.000	0.001	7
	Zoxamide	Benzamide	Farm	approved	-	2000	0.024	0.081	3
	Bupirimate	Hydroxy-pyrimidine	Farm	approved	-	10000	0.023	0.075	2
	Propiconazole	Triazole	Farm	disapproved	2018	2510	0.001	0.005	2
	Pyraclostrobin	Metoxy-carbamate	Farm	approved	-	2000	ND	ND	2
	Tebuconazole	Triazole	Farm	approved	-	1988	0.001	0.005	2
	Cyprodinil	Anilino-pyrimidine	Farm	approved	-	500	0.001	0.004	1
	Dimoxystrobin	Oximino-acetamide	Farm	approved	-	2000	0.004	0.013	1
	Metconazole	Triazole	Farm	approved	-	787	ND	ND	1
	Penconazole	Triazole	Farm	approved	-	1590	0.001	0.003	1
	Pyrimethanil	Anilino-pyrimidine	Farm	approved	-	2000	0.150	0.500	1
	Quinoxifen	Quinolein	Farm	disapproved	2019	2250	0.005	0.016	1
HERBICIDE									
	Chloridazon	Pyridazinone	Farm	disapproved	2018	2000	0.021	0.071	53
	Metamitron	Triazinone	Farm	approved	-	1302	0.058	0.192	53
	Bifenox	Diphenyl-ether	Farm	approved	-	2000	0.001	0.004	46
	Diflufenican	Carboxamide	Farm	approved	-	2150	0.013	0.043	27
	Alachlor	Chloro-acetamide	Farm	disapproved	2006	1536	0.028	0.093	10
	S-Metolachlor	Chloro-acetamide	Farm	approved	-	2000	0.01	0.032	5
	2,4-MCPA	Phenoxy-carboxylate	Farm	approved	-	377	0.158	0.158	4

Isoproturon	Urea	Farm	disapproved	2016	1401	0.002	0.006	4
Propyzamid	Benzonitrile	Farm	approved	-	6578	0.002	0.007	4
Pendimethalin	Dinitroanilin	Farm	approved	-	1421	0.025	0.083	3
Diuron	Urea	Farm	disapproved	2008	1104	0.004	0.014	2
Benoxacor	Benzoxazine	Farm	***	-	2000	ND	ND	1
Chlorotoluron	Urea	Farm	approved	-	272	0.008	0.026	1
Flurochloridon	Phenyl-ether	Farm	approved	-	2150	0.121	0.403	1
INSECTICIDE								
Indoxacarb	Oxadiazine	Farm	disapproved	2021	73.5	0.007	0.023	54
Nitenpyram	Neonicotinoid	Dom	***	-	1124	0.009	0.03	50
Cypermethrin	Pyrethroid	Farm	approved	-	9520	0.001	0.004	17
Dinotefuran	Neonicotinoid	Dom	***	-	2000	0.011	0.037	13
Carbaryl	Carbamate	Farm	disapproved	2006	2000	ND	ND	11
Clothianidin	Neonicotinoid	Farm	disapproved	2018	430	0.010	0.034	8
Piperonyl butoxide	Benzodioxol	Farm.	***	-	2250	0.000	0.001	8
		Dom						
Spinosad-A	Macrolid	Farm.	approved	-	1333	0.000	0.001	4
		Dom						
Thiametoxam	Neonicotinoid	Farm	disapproved	2018	576	0.012	0.041	4
Chlorantraniliprole	Diamide	Farm	approved	-	2250	0.001	0.003	3
Flufenoxuron	Benzoylurea	Farm	disapproved	2011	2000	0.011	0.038	3
Cyantraniliprole	Diamide	Farm	approved	-	2250	0.111	0.370	1
Diflubenzuron	Benzoylurea	Farm	disapproved	2020	5000	ND	ND	1
Thiacloprid	Neonicotinoid	Farm	disapproved	2018	35	0.001	0.005	1