Supplementary material

A.

Table A. Specific sampling dates, per study site and season

	Season 1		*Season 2*	
Area	**Start**	**End**	**Start**	**End**
Spain				
Agricultural	07/11/2019	20/12/2019	01/09/2020	02/10/2020
Non-agricultural	05/11/2019	19/12/2019	01/09/2020	05/10/2020
Latvia				
Agricultural	18/02/2020	31/03/2020	02/06/2020	18/06/2020
Non-agricultural	18/02/2020	31/03/2020	02/06/2020	18/06/2020
Hungary				
Agricultural	29/01/2020	10/02/2020	07/09/2020	16/09/2020
Non-agricultural	11/02/2020	18/02/2020	16/09/2020	17/09/2020
Czech Republic				
Agricultural	14/1/2020	13/3/2020	26/5/2020	30/7/2020
Non-agricultural	14/1/2020	13/3/2020	26/5/2020	30/7/2020
The Netherlands				
Agricultural	22/01/2020	06/03/2020	02/06/2020	24/06/2020
Non-agricultural	22/01/2020	06/03/2020	02/06/2020	24/06/2020

B.

Table B. Descriptive characteristics of the SPECIMEn study participants based on the questionnaire, by study site and location.

Study Site	*Spain*		*Latvia*		*Hungary*		*Czech Republic*		*Netherlands*	
Area	**Agricultural**	**Non-agricultural**	**Agricultural**	**Non-agricultural**	**Agricultural**	**Non-agricultural**	**Agricultural**	**Non-agricultural**	**Agricultural**	**Non-agricultural**
Smoking status adult[1], %										
No-current smoker	65.4	73.6	88.0	82.4	54.9	78.8	84.3	91.7	94.5	100.0
Household income, % of country average[1]										
< 25%	7.7	0	14.0	9.8	27.4	17.3	15.7	16.7	1.8	0
25-50%	5.8	0	0	0	39.2	19.2	39.2	26.7	5.5	6.0
50-75%	17.3	3.8	0	0	13.7	7.7	35.3	33.3	49.1	44.0
>75%	57.7	75.5	74.0	70.6	5.9	44.4	9.8	21.7	20.0	44.0
Don't Know/NA	11.5	20.8	12.0	19.6	13.7	9.3	0	1.7	23.6	6.0
Professional contact with pesticides in the past month, n adults										
Season 1	0	1	2	0	0	0	1	0	0	0
Season 2	2	0	4	1	2	1	3	1	0	0

[1] 50% is country mean average income

Having other adult household member(s) who had professional contact with pesticides, n adults	1	0	16	2	9	1	0	0	1	0
Usage of any type of products for treating the plants in the garden up to 3 days prior to sample collection, n adults										
Season 1	0	2	1	1	0	2	1	0	1	0
Season 2	4	2	4	2	1	2	6	4	4	2
Usage of any type of products for treating the plants inside the house up to 3 days prior to sample collection, n adults										
Season 1	2	0	2	4	0	2	0	1	1	3
Season 2	2	0	3	3	17	4	2	0	2	2
Usage of external antiparasitic treatments for pets in the 3 days prior to sample collection, n adults										
Season 1	2	2	0	1	2	11	1	1	1	0
Season 2	1	2	4	1	4	5	0	1	6	1
Usage of insect repellent or antiparasitic human products in the 3 days prior to sample collection, n adults										
Season 1	6	1	0	3	2	2	2	1	0	2
Season 2	25	6	5	4	4	2	6	8	5	0

C.

Table C. Annotated pesticide-related compounds (parent pesticides and/or metabolites) of confidence levels 1 - 5 (p = 95) and their overall detection frequency (%) per study site.

ID	Pesticide type[2]	Parent pesticide	Pesticide (metabolite) annotation[3]	precursor ion	exact m/z	RT[4] urine [min]	Conf. level[5]	Overall Detection Frequency (%)				
								ES[6]	LV	HU	CZ	NL
P1	H	2,4-D	Parent compound	[M-H]-	218.9623	9.93	**1**	4.07	0	2.2	2.71	0
P2_a	I	Acetamiprid	-CH2	[M-H]-	207.0443	8.71	**1**	98.56	32.84	94.13	98.19	93.29
P2_b			-CH2	[M+H]+	209.0589	8.55	4	81.82	10.95	45.23	41.18	47.00
P2_c			Parent compound	[M+H]+	223.0745	8.67	4	1.44	0	0.49	0	0.72
P3_a	F	Ametoctradin	-C2H6 +2O	[M+H]+	278.1612	9.47	**1**	5.02	2.74	1.22	4.75	2.88
P3_b			-C2H6 +2O	[M-H]-	276.1466	8.17	5	0.72	0.5	0.49	0.45	2.16
P4	I, Ac	Bifenthrin/Cyhalothrin	F3CCA + C6H8O6	[M-H]-	417.0570	11.95	4	40.43	3.23	7.09	3.62	13.91
P5_a	F	Boscalid	+O +SO3	[M-H]-	436.9771	10.26	2b	35.65	18.41	3.91	22.85	32.85
P5_b			+O +SO3	[M+H]+	438.9917	10.49	2b	7.18	0	0	0.45	0.24
P5_c			+O (M510F01)	[M-H]-	357.0203	11.89	4	0.48	0	0	0	0
P5_d			+O (M510F01)	[M+H]+	359.0349	11.69	4	0.48	0	0	0	0
P6	I	Chlorantraniliprole	+O	[M-H]-	497.9564	12.67	2b	3.83	0.25	0.24	0	0.24
P7_a	Ac	Chloropropylate	-C3H6	[M-H]-	294.9934	12.93	4	0	0	0	0.23	0
P7_b			-C3H6 -CO2	[M-H]-	251.0036	12.93	4	0.24	0	0	0	0
P8_a	H, GR	Chlorpropham	+O +SO3 (4-HSA)	[M-H]-	308.0003	9.5	**1**	55.74	31.59	31.05	34.16	75.06
P8_b			-C4H6O +SO3	[M-H]-	221.9633	6.19	3	29.19	32.09	21.03	28.05	63.07
P8_c			+2O +SO3	[M-H]-	323.9950	7.5	3	7.66	6.97	9.78	9.28	26.86
P8_d			+O +C6H8O6	[M-H]-	404.0757	8.55	4	15.55	15.42	12.96	14.03	44.84
P8_e			+O	[M-H]-	228.0433	10.97	4	1.2	0	0.73	1.36	9.35
P9_a	I	Chlorpyrifos (/methyl)	TCPy	[M-H]-	195.9129	10.1	**1**	1.67	0	0.24	0.23	0.24

[2] H: Herbicide, F: Fungicide, I: Insecticide, GR: Plant Growth Regulator, Ac: Acaricide, M: molluscide, Al: Algicide, Ab: antibacterial, Af: antifungal,

[3] Metabolite annotation: "-CH2" means the molecular formula of the metabolite is that of the parent minus CH2 (corresponding to demethylation). Similarly, "+O" means the metabolite is the parent compound plus one oxygen atom (hydroxylation). "+SO3" and "+C6H8O6" indicate sulfation and glucuronidation, respectively.

[4] RT: Retention Time

[5] Schymanski confidence level, ranging from 1 to 5, (Schymanski et al., 2014)

[6] ES: Spain, LV: Latvia, HU: Hungary, CZ: Czech Republic, NL: the Netherlands

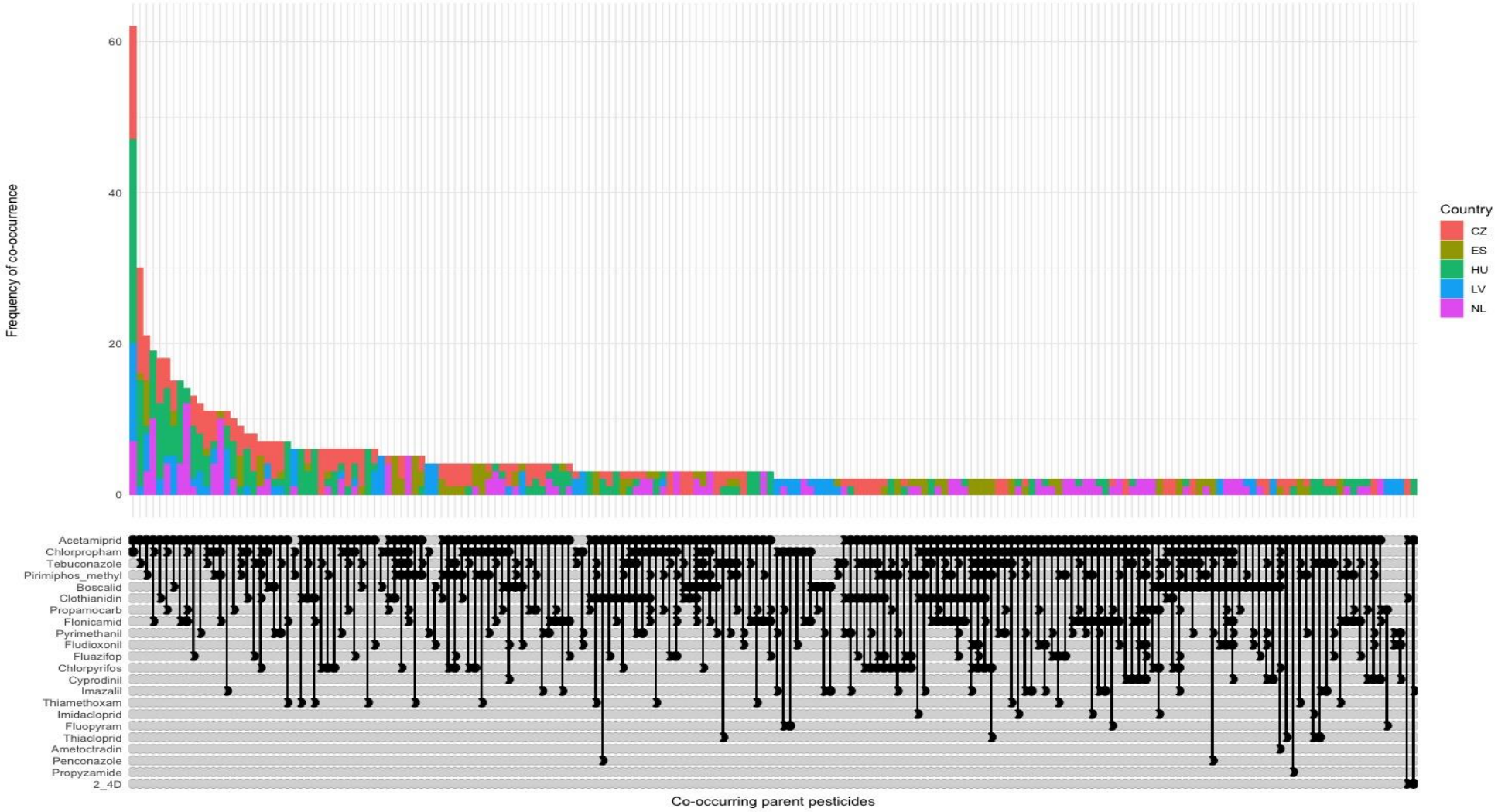
P9_b			-CH2	[M-H]-	305.8723	10.72	**1**	36.12	0	6.85	21.72	6.47
P9_c			TCPy+C6H8O6	[M-H]-	371.9450	8.38	4	50.00	0	2.69	13.35	7.19
P10	H	Clopyralid	Parent compound	[M-H]-	189.9465	3.5	**1**	0.96	0	0	1.36	0.72
P11_a	I	Clothianidin (can come from thiamethoxam)	Parent compound	[M-H]-	248.0015	8.09	**1**	34.45	1.74	21.52	24.66	19.42
P11_b			-NO2 +H	[M+H]+	205.0309	5.77	**1**	0.48	0	0.24	0	0.24
P11_c			-CH2	[M-H]-	233.9858	7.51	2b	21.05	0.75	9.78	6.56	3.12
P11_d			Parent compound	[M+H]+	250.0160	8.08	4	1.67	0	3.18	0	2.16
P12_a	I	Cypermethrin, cyfluthrin, permethrin, transfluthrin	DCCA	[M-H]-	206.9985	10.73	**1**	0.48	0	0	0	0
P12_b			DCCA+C6H8O6	[M-H]-	383.0306	10.95	4	84.93	9.2	14.67	25.34	48.20
P13_a	F	Cyprodinil	+O +SO3	[M-H]-	320.0710	11.87	2b	14.11	7.71	2.69	10.18	26.38
P13_b			+2O +SO3	[M-H]-	336.0660	9.22	3	9.09	4.98	1.71	7.47	22.78
P14	I	Deltamethrin	DBCA+C6H8O6	[M-H]-	470.9296	11.43	4	76.32	0.75	7.33	9.5	21.82
P15_a	H, Al	Diuron	-CH2 -CH2	[M-H]-	202.9786	12	4	5.5	1	0.24	1.13	0.48
P15_b			-CH2	[M-H]-	216.9942	12.45	4	1.2	0.25	0	0	0
P15_c			-CH2	[M+H]+	219.0084	12.14	4	0.24	0	0	0	0
P16	F	Fenhexamid	+O +C6H8O6	[M+NH3]+	511.1244	9.34	3	0.96	1	1.22	2.49	6.71
P17_a	I, Ac	Fipronil	Parent compound	[M-H]-	434.9310	15.02	4	0.96	0	0	0	0
P17_b			+O	[M-H]-	450.9260	15.43	4	3.59	0.5	0	0	0
P18_a	I	Flonicamid	Parent compound	[M-H]-	228.0397	6.9	**1**	1.67	0.75	1.96	2.71	5.76
P18_b			-C2HN	[M+H]+	191.0427	6.1	2b	15.07	0.25	27.38	0.23	57.31
P18_c			Parent compound	[M+H]+	230.054	6.8	4	1.44	0	0.98	1.36	3.6
P19_a	H	Fluazifop	Parent compound	[M-H]-	326.0647	11.74	**1**	19.86	2.49	11.00	18.33	21.10
P19_b			Parent compound	[M+H]+	328.079	13.57	**1**	8.13	1.49	4.89	5.20	8.15
P20	F	Fludioxonil	+O +C6H8O6	[M-H]-	439.0609	11.81	2b	16.27	14.68	1.96	14.48	26.86
P21_a	F	Fluopyram	+O +SO3	[M-H]-	490.9908	12.68	2b	3.59	0.5	0.24	1.13	0.96
P21_b			+O +C6H8O6	[M+H]+	589.0807	13.08	2b	2.39	0.75	0.49	3.17	4.8
P21_c			-2H	[M+H]+	395.0385	13.07	2b	10.77	6.72	0.49	3.39	3.12
P22_a	I	Flupyradifurone	Parent compound	[M+H]+	289.0557	8.79	**1**	2.63	0.25	0.24	0.68	2.16
P22_b			-C2H2F2	[M+H]+	225.0425	7.54	4	1.67	0	0.24	0.23	3.12
P23	H	Fluroxypyr	Parent compound	[M+H]+	254.973	10.47	4	0.24	0	0	0	0

P24	F	Flutolanil	-C3H6 +O +SO3	[M-H]-	376.0108	8.18	3	14.11	0	4.65	0	0.24
P25_a	I, Ac	Fluvalinate	-C14H9NO	[M-H]-	294.0514	13.94	2b	0.96	0	0.73	0.23	0
P25_b			-C14H9NO +O	[M-H]-	310.0463	12.78	3	0.72	0	0.49	0	0
P25_c			-C14H9NO	[M+H]+	296.066	14.35	4	0.96	0	0.49	0	0
P26	H	Haloxyfop	-CH2	[M-H]-	360.026	13.39	4	60.53	3.23	2.69	34.39	21.34
P27_a	F	Imazalil	+C6H8O6	[M+H]+	473.0869	11.52	2b	19.38	10.70	8.31	4.52	4.56
P27_b			+H2O2 +C6H8O6	[M+H]+	507.0946	9.15	3	14.35	8.21	4.16	1.81	3.6
P28_a	I	Imidacloprid	-NO2 +H	[M+H]+	211.0739	6.01	**1**	17.46	1.74	4.16	0.68	9.35
P28_b			Parent compound	[M+H]+	256.0596	8.04	4	5.02	0	2.44	3.85	3.84
P28_c			+O	[M+H]+	272.054	7.48	4	10.53	0.75	1.47	2.71	2.4
P28_d			-2H	[M+H]+	254.0439	7.3	4	8.37	0.25	0.98	2.94	2.88
P29	F	Iprodione	-C3H6 (RP32490)	[M-H]-	285.9786	12.93	4	5.02	0	0.24	1.58	2.64
P30_a	H	MCPA	+O	[M-H]-	215.0117	7.57	3	14.59	0.75	1.22	5.66	12.47
P30_b			Parent compound	[M-H]-	199.0167	9.95	4	0.48	0	0	0.45	0.96
P31	F	Myclobutanil	-H2 +2O	[M-H]-	317.0811	9	3	7.18	0.50	0.24	4.30	0.96
P32_a	F	Penconazole	+O +C6H8O6	[M+H]+	476.0982	11.45	2b	6.46	1.74	2.2	2.04	2.4
P32_b			-2H +2O	[M+H]+	314.0457	11.91	3	2.63	0.25	0.73	1.13	1.68
P33	F, H, I, M, GR	Pentachlorophenol	in source fragment of +SO3	[M-H]-	264.8368	13.19	4	3.11	0	2.44	3.85	0.24
P34_a	I, Ac	Pirimiphos-methyl	-CH2	[M-H]-	290.0734	10.75	**1**	85.17	10.20	6.60	23.98	47.72
P34_b			-CH2 -C2H4	[M-H]-	262.0422	7.47	5	16.75	0	0	0.23	4.08
P34_c			-CH2 -C2H4	[M+H]+	264.0564	6.22	5	0	0.25	0	0	0.48
P35_a	F	Propamocarb	Parent compound	[M+H]+	189.1597	6.00	**1**	9.57	1	11.49	4.98	23.26
P35_b			+O	[M+H]+	205.1546	6.45	2b	20.81	5.47	18.34	12.67	42.69
P36_a	F	Propiconazole	-C5H10O +H2 +C6H8O6 -C5H10O	[M-H]-	432.0371	9.00	3	2.39	0	0.98	0	1.2
P36_b			(CGA91304)	[M-H]-	253.9888	12.30	4	0	0	0	0	0.24
P37	H	Propyzamide	+H2O3	[M-H]-	304.0143	11.36	2b	8.61	0	0.49	0.9	0.96
P38_a	F	Pyrimethanil	+O +SO3	[M-H]-	294.0556	9.15	2b	26.79	14.43	4.89	21.95	31.89
P38_b			+O	[M+H]+	216.1133	11.69	2b	0.72	0	2.69	0	0.48

P39	G	Quinmerac	Parent compound	[M-H]-	220.0171	8.54	4	86.12	22.64	25.92	74.89	23.26
P40_a	F	Tebuconazole	-2H +2O	[M-H]-	336.1124	12.18	2b	71.29	5.47	25.18	52.26	35.97
P40_b			+O +C6H8O6	[M+H]+	500.1794	12.71	3	41.15	17.16	30.56	23.08	13.91
P41_a	F	Thiabendazole	+O +C6H8O6	[M-H]-	392.0551	5.96	2b	0	0.75	0.24	0	0.48
P41_b			+O (5-hydroxy)	[M+H]+	218.0381	6.80	5	2.15	1.49	1.47	0	3.36
P42_a	I	Thiacloprid	+O	[M-H]-	267.0107	9.19	2b	8.37	0.75	2.93	7.92	4.56
P42_b			+H2 +O	[M-H]-	269.0271	7.05	4	3.11	0.5	0.49	0.9	1.92
P43_a	I	Thiamethoxam	Parent compound	[M+H]+	292.0262	7.10	**1**	0.72	0	2.44	0	0.48
P43_b			-NO2 +H	[M+H]+	247.0413	6.20	**1**	23.44	0	15.16	0	0.24
P44	F	Tolclofos-methyl	-CH2	[M-H]-	284.9309	10.31	4	0	0.25	0	0.45	0.24
P45_a	Af, Ab	Triclosan	+C6H8O6	[M-H]-	462.9759	13.23	**1**	84.69	16.17	24.45	46.15	12.71
P45_b			+O +C6H8O6	[M-H]-	478.9709	9.40	3	4.78	0.75	0.73	1.13	0.48
P45_c			+SO3	[M-H]-	366.9007	13.89	4	3.83	0.25	0.73	0.68	0.48
P45_d			Parent compound	[M-H]-	286.9439	16.12	4	2.15	0.5	1.22	0	0.96
P45_e			+C6H8O6	[M+NH3]+	482.0171	14.02	4	28.95	2.24	12.71	14.25	6.24
P46_a	F	Trifloxystrobin	-CH2 -CH2	[M-H]-	379.0911	13.07	2b	0.72	0.5	0	3.62	3.84
P46_b			-CH2 (CGA 321113)	[M+H]+	395.1213	14.88	5	0.24	0	0.24	2.04	0.24

D.

Table D. Frequency (number of urine samples, n=2,088) of co-occurrent parent pesticides; the most frequent (in 2 or more urine samples) co-occurrences are shown. Different study sites are indicated by colors (CZ=Czech Republic, ES=Spain, HU=Hungary, LV=Latvia, NL=Netherlands), the detection frequency (%) of the listed parent pesticides is given on the right. Pesticides are co-occurring in the same sample when both have a black connected dot. Multiple metabolites and/or parent compounds related to the same parent pesticide were considered as one.


Frequency of co-occurrence
60
40
20
0
Country
CZ
ES
HU
LV
NL
Acetamiprid
Chlorpropham
Tebuconazole
Pirimiphos_methyl
Boscalid
Clothianidin
Propamocarb
Flonicamid
Pyrimethanil
Fludioxonil
Fluazifop
Chlorpyrifos
Cyprodinil
Imazalil
Thiamethoxam
Imidacloprid
Fluopyram
Thiacloprid
Ametoctradin
Penconazole
Propyzamide
2_4D
Co-occurring parent pesticides

E.

Table E. Results of logistic mixed effects models, main and extended. Results are presented as Odds Ratios (OR) with 95% confidence intervals (CI). Significance levels based on p-value: '***' <0.001, '**' <0.01, '*' <0.05. Random effects are household and participant ID. Main model includes the predictors: location, season, and age category. Extended model includes additional predictors for pesticide usage, BMI, level of education and homegrown food consumption.

ID	Parent pesticide	Category	ES		LV		HU		CZ		NL	
			Main OR (95% CI)	**Extended OR (95% CI)**	**Main OR (95% CI)**	**Extended OR (95% CI)**	**Main OR (95% CI)**	**Extended OR (95% CI)**	**Main OR (95% CI)**	**Extended OR (95% CI)**	**Main OR (95% CI)**	**Extended OR (95% CI)**
P1	2,4-D	Season 2 vs 1[7] Parent vs Child Agricultural vs Non-agricultural	1.7 (0.5; 5.9) 2.5 (0.7; 8.8) 0.7 (0.1; 5.5)	1.6 (0.4; 5.9) 3.4 (0.5; 21) 0.8 (0.1; 7.3)	NA	NA	0.5 (0.1; 2.0) 0.8 (0.2; 3.0) 0.8 (0.2; 3.1)	0.4 (0.1; 1.7) 0.6 (0.1; 2.9) 0.6 (0.1; 2.8)	0.5 (0.1; 1.7) 1.0 (0.3; 3.2) 1.7 (0.5; 5.3)	0.4 (0.1; 1.4) 1.7 (0.2; 12) 1.6 (0.5; 5.4)	NA	NA
P2_a	Acetamiprid	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	0.5 (0.1; 2.7) 0.2 (0.0; 1.7) (100% detect in Agricultural area, no estimate possible)	0.5 (0.1; 2.7) 0.2 (0.0; 2.8) (Not possible)	0.6 (0.4; 1.0) . 0.8 (0.5; 1.3) 1.0 (0.6; 1.6)	0.6 (0.4; 1.0) * 0.7 (0.4; 1.5) 1.1 (0.7; 1.9)	1.2 (0.5; 2.7) 0.4 (0.2; 1.0) * 1.2 (0.1; 2.7)	1.3 (0.5; 3.1) 0.5 (0.2; 1.5) 1.4 (0.5; 3.5)	0.6 (0.1; 2.5) 1.0 (0.2; 4.1) 0.5 (0.1; 2.2)	0.8 (0.2; 3.9) 12 (1.0; 149) . 0.6 (0.1; 3.0)	0.2 (0.0; 0.8 * 1.3 (0.2; 9.0) 2.0 (0.3; 14)	0.5 (0.2; 1.2) 1.7 (0.3; 8.0) 2.4 (0.9; 6.2) .
P3_a	Ametoctradin	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	0.4 (0.1; 1.5) 2.1 (0.3; 17) 0.3 (0.0; 2.8)	0.6 (0.2; 1.4) 3.0 (0.9; 10) 0.4 (0.1; 1.0)	0.6 (0.2; 2.0) 0.8 (0.2; 2.8) 1.8 (0.5; 6.3)	0.5 (0.2; 1.9) 2.3 (0.3; 15) 1.3 (0.3; 5.3)	0.7 (0.1; 4.1) 4.0 (0.4; 37) 1.6 (0.3; 9.5)	Not reliable, 1.2% detected	0.4 (0.1; 1.0) * 0.6 (0.2; 1.5) 3.2 (1.1; 9.5) *	0.4 (0.1; 1.1) . 0.2 (0.0; 1.3) . 3.0 (1.0; 9.4) .	0.3 (0.1; 1.6) 0.1 (0.02; 0.9) * 0.8 (0.03; 20)	Not reliable, 2.9% detected
P5_a	Boscalid	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	0.7 (0.4; 1.0) . 2.9 (1.8; 4.6) *** 1.0 (0.6; 1.9)	0.6 (0.4; 1.0) . 2.5 (1.3; 4.9) ** 1.0 (0.5; 1.8)	0.9 (0.5; 1.6) 1.3 (0.7; 2.4) 1.2 (0.5; 2.6)	0.9 (0.5; 1.6) 1.0 (0.4; 2.6) 1.4 (0.6; 3.1)	0.6 (0.2; 1.7) 2.1 (1.0; 9.9) . 0.8 (0.2; 2.2)	0.6 (0.2; 1.9) 2.4 (0.6; 9.3) 0.5 (0.1; 1.5)	0.7 (0.4; 1.2) 2.1 (1.3; 3.5) ** 1.4 (0.8; 2.5)	0.8 (0.5; 1.3) 2.5 (1.0; 6.1) . 1.4 (0.8; 2.7)	1.4 (0.9; 2.2) 1.4 (0.9; 2.1) 0.6 (0.3; 1.0) .	1.4 (0.9; 2.2) 1.1 (0.4; 2.6) 0.5 (0.3; 1.0) .
P5_b			0.5 (0.2; 1.7) 1.2 (0.2; 6.8) 1.1 (0.2; 7.5)	0.6 (0.2; 1.7) 4.6 (0.9; 23) 1.1 (0.2; 8.0)	NA	NA	NA	NA	NA	NA	NA	NA
P6	Chlorantraniliprole	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	7.6 (1.7; 34) ** 1.0 (0.4; 2.7) 1.0 (0.4; 2.9) No random effects, this resulted in unreliable model	6.8 (1.5; 31) * 0.8 (0.2; 3.2) 0.7 (0.2; 2.4) No random effects	NA	NA	NA	NA	NA	NA	NA	NA
P8_a	Chlorpropham	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	0.4 (0.3; 0.7) *** 0.4 (0.2; 0.6) *** 0.7 (0.4; 1.3)	0.4 (0.3; 0.7) *** 0.3 (0.2; 0.6) *** 0.7 (0.4; 1.3)	1.6 (1.0; 2.6) . 0.3 (0.2; 0.6) *** 1.3 (0.7; 2.7)	1.5 (0.9; 2.4) 0.4 (0.2; 1.0) * 1.2 (0.6; 2.5)	0.5 (0.3; 0.8) ** 0.5 (0.3; 0.7) ** 1.3 (0.7; 2.5)	0.5 (0.3; 0.9) * 0.4 (0.2; 0.7) ** 1.5 (0.7; 3.2)	2.1 (1.3; 3.3) ** 0.4 (0.2; 0.6) *** 1.0 (0.6; 2.0)	1.9 (1.2; 3.1) * 0.3 (0.1; 0.8) * 1.0 (0.5; 2.0) **Not correct Edu**	2.8 (1.7; 4.7) *** 0.6 (0.4; 1.1) . 2.1 (1.1; 3.9) *	2.7 (1.6; 4.6) *** 0.5 (0.2; 1.2) 2.1 (1.1; 4.1) *

[7] Underlined is the reference category

P9_a	Chlorpyrifos (/methyl)	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	0.4 (0.1; 2.1) 6.2 (0.7; 52) . 1.4 (0.3; 6.3)	0.4 (0.1; 2.4) 3.9 (0.3; 52) 1.5 (0.3; 7.2) Not correct Educ	NA	NA	NA	NA	NA	NA	NA	NA
P9_b			0.2 (0.1; 0.4) *** 0.5 (0.3; 0.7) *** 0.8 (0.5; 1.3)	0.2 (0.1; 0.4) *** 0.4 (0.2; 0.7) ** 0.8 (0.5; 1.3)	NA	NA	2.5 (1.0; 6.1) * 0.5 (0.2; 1.1) . 0.2 (0.1; 0.7) *	2.7 (1.1; 6.5) * 0.2 (0.1; 0.8) * 0.3 (0.1; 1.0) .	0.6 (0.4; 1.0) . 0.5 (0.3; 0.7) ** 1.3 (0.7; 2.4)	0.6 (0.4; 1.0) . 0.7 (0.3; 1.7) 1.3 (0.7; 2.4)	0.5 (0.2; 1.1) . 0.8 (0.3; 1.8) 1.2 (0.4; 3.2)	0.4 (0.1; 1.0) * 0.9 (0.2; 5.2) 1.2 (0.4; 3.3)
P10	Clopyralid	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	NA	NA	NA	NA	NA	NA	1.0 (0.2; 5.1) 2.0 (0.4; 11) 0.2 (0.0; 2.0)	0.6 (0.4; 1.0) . 0.7 (0.3; 1.7) 1.3 (0.7; 2.4) **not correct PestUse**	NA	NA
P11_a	Clothianidin (can come from thiamethoxam)	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	0.6 (0.4; 0.9) ** 0.6 (0.5; 0.9) * 0.5 (0.3; 0.8) **	0.5 (0.3; 0.8) ** 0.6 (0.3; 1.0) . 0.4 (0.3; 0.7) ***	6.3 (0.7; 53) . 0.2 (0.0; 1.4) . 1.4 (0.3; 6.3)	5.7 (0.7; 50) 0.3 (0.0; 5.7) 0.9 (0.2; 4.6)	3.1 (1.8; 5.2) *** 0.6 (0.4; 1.0) . 2.8 (1.6; 4.7) ***	3.5 (2.0; 6.1) *** 0.4 (0.2; 0.7) ** 2.8 (1.5; 5.1) **	0.6 (0.4; 1.0) . 1.0 (0.6; 1.5) 1.3 (0.8; 2.2)	0.7 (0.4; 1.1) 1.1 (0.5; 2.7) 1.4 (0.8; 2.5)	0.6 (0.4; 1.0) . 0.9 (0.5; 1.5) 1.3 (0.7; 2.3)	0.6 (0.4; 1.0) . 1.7 (0.6; 4.6) 1.4 (0.8; 2.7)
P11_b			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P11_c			0.9 (0.5; 1.5) 0.7 (0.4; 1.3) 1.4 (0.8; 2.8)	0.8 (0.5; 1.4) 0.8 (0.4; 1.8) 1.4 (0.7; 2.8)	NA	NA	1.9 (0.9; 3.9) . 0.8 (0.4; 1.5) 4.4 (1.8; 11) ***	2.5 (1.2; 5.5) * 0.3 (0.1; 0.8) * 5.5 (2.1; 14) ***	0.5 (0.2; 1.1) . 0.9 (0.4; 2.0) 1.3 (0.6; 2.7)	0.5 (0.2; 1.1) . 1.2 (0.3; 4.6) 1.3 (0.6; 2.8)	0.02 (0.0; 0.3) ** 1.6 (0.0; 42) 1.5 (0.0; 38)	0.6 (0.4; 1.0) . 1.8 (0.7; 4.9) 1.4 (0.7; 2.6) Not corrected for PestUse &Educ, 3% detect
P12_a	Cypermethrin, cyfluthrin, permethrin, transfluthrin	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P13_a	Cyprodinil	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	1.2 (0.7; 2.1) 2.0 (1.6; 5.6) *** 1.4 (0.7; 2.7)	1.2 (0.6; 2.2) 2.3 (1.0; 5.4) . 1.4 (0.7; 2.7)	0.7 (0.3; 1.5) 0.9 (0.4; 2.1) 1.1 (0.4; 2.8)	0.7 (0.3; 1.5) 1.5 (0.5; 5.1) 1.1 (0.4; 2.9)	0.3 (0.1; 2.0) 6.2 (0.9; 40) 1.9 (0.1; 44)	0.4 (0.1; 2.9) 2.9 (0.3; 26) 1.8 (0.1; 61)	0.9 (0.5; 1.6) 0.8 (0.4; 1.5) 0.3 (0.1; 0.6) **	0.9 (0.5; 1.7) 1.0 (0.3; 3.0) 0.3 (0.1; 0.6) **	0.8 (0.5; 1.2) 0.5 (0.3; 0.8) ** 0.6 (0.3; 0.9) *	0.8 (0.5; 1.2) 1.2 (0.5; 2.8) 0.5 (0.3; 0.9) *
P18_a	Flonicamid	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	1.4 (0.3; 6.3) 6.2 (0.7; 52) 2.6 (0.5; 14)	1.4 (0.3; 7.1) 7.8 (0.6; 96) 2.6 (0.4; 15) Not correct Educ	NA	NA	3.1 (0.6; 16) 0.3 (0.1; 1.6) 1.0 (0.3; 4.3)	3.8 (0.7; 20) 0.2 (0.0; 1.5) 2.3 (0.5; 11)	1.0 (0.2; 5.3) 0.1 (0.0; 0.4) ** 2.7 (0.1; 84)	Not reliable, 2.7% detect	1.6 (0.6; 4.0) 0.3 (0.1; 0.8) * 0.4 (0.1; 1.5)	1.5 (0.6; 3.8) 0.3 (0.0; 2.3) 0.4 (0.1; 1.3)
P18_b			0.3 (0.2; 0.6) *** 0.6 (0.4; 1.1) 0.8 (0.5; 1.5)	0.3 (0.2; 0.6) *** 0.6 (0.3; 1.4) 0.9 (0.5; 1.6)	NA	NA	2.2 (1.4; 3.6) ** 0.9 (0.5; 1.5) 0.6 (0.4; 1.0) .	2.6 (1.6; 4.4) *** 0.6 (0.3; 1.2) 0.8 (0.4; 1.4)	NA	NA	0.9 (0.6; 1.4) 0.7 (0.4; 1.0) . 1.0 (0.6; 1.6)	0.9 (0.6; 1.4) 1.2 (0.6; 2.8) 0.9 (0.5; 1.5)
P19_a	Fluazifop	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	0.5 (0.3; 0.8) ** 1.0 (0.6; 1.7) 1.0 (0.6; 1.9)	0.5 (0.3; 0.9) * 0.7 (0.3; 1.5) 1.1 (0.6; 2.1)	0.7 (0.2; 2.4) 1.0 (0.3; 3.5) 4.2 (0.9; 20) .	0.6 (0.1; 2.3) 1.2 (0.2; 7.8) 3.1 (0.6; 16)	1.1 (0.6; 2.0) 0.6 (0.3; 1.2) 1.1 (0.5; 2.2)	0.9 (0.4; 1.7) 0.4 (0.2; 1.0) * 0.9 (0.4; 2.1)	0.9 (0.5; 1.4) 0.7 (0.4; 1.2) 1.1 (0.6, 2.1)	0.8 (0.5; 1.4) 0.5 (0.2; 1.3) 1.3 (0.7; 2.4) not correct Educ	1.0 (0.6; 1.6) 0.7 (0.4; 1.2) 1.4 (0.7; 3.0)	1.0 (0.6; 1.7) 0.5 (0.2; 1.5) 1.5 (0.7; 3.1)

P19_b			0.8 (0.4; 1.6) 1.0 (0.5; 2.1) 1.6 (0.7; 3.6)	0.7 (0.3; 1.6) 0.4 (0.1; 1.2) 1.6 (0.6; 4.1)	0.5 (0.1; 2.7) 0.5 (0.1; 2.7) 5.2 (0.6; 45)	0.4 (0.1; 2.6) 1.9 (0.1; 29) 4.6 (0.5; 44)	1.4 (0.1; 4.5) 0.2 (0.0; 0.9) * 2.1 (0.3; 17)	1.0 (0.3; 2.6) 0.3 (0.1; 0.9) * 2.4 (0.8; 7.2)	2.5 (1.0; 6.3) . 1.3 (0.6; 3.2) 0.9 (0.3; 2.3)	2.4 (0.9; 6.3) . 1.0 (0.2; 4.6) 0.9 (0.3; 2.5) not correct Educ	7.2 (1.6; 32) ** 0.6 (0.1; 4.1) 1.4 (0.2; 10)	4.5 (1.1; 17) * 0.0 (0.0; 2.9) 3.1 (0.3; 29)
P20	Fludioxonil	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	0.5 (0.3; 0.9) * 1.5 (0.8; 2.8) 1.1 (0.6; 2.1)	0.5 (0.3; 0.9) * 0.9 (0.4; 2.2) 1.0 (0.5; 2.0)	0.8 (0.4; 1.4) 1.1 (0.6; 2.1) 0.8 (0.4; 1.7)	0.8 (0.4; 1.4) 0.8 (0.3; 2.1) 0.9 (0.4; 1.9)	1.7 (0.4; 7.2) 1.0 (0.2; 4.0) 0.6 (0.1; 2.6)	1.7 (0.4; 7.5) 0.9 (0.2; 5.5) 0.9 (0.2; 4.8)	0.7 (0.4; 1.2) 0.7 (0.4; 1.2) 0.5 (0.3; 0.9) *	0.7 (0.4; 1.2) 1.1 (0.4; 3.1) 0.6 (0.3; 1.1) .	0.6 (0.3; 0.9) * 0.5 (0.3; 0.9) * 0.9 (0.5; 1.6)	0.6 (0.4; 0.9) * 0.8 (0.3; 1.8) 0.8 (0.5; 1.4)
P21_a	Fluopyram	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	3.1 (0.8; 12) 0.8 (0.2; 2.8) 1.1 (0.1; 9.5)	3.6 (0.8; 15) . 1.0 (0.1; 8.1) 2.0 (0.2; 19)	NA	NA	NA	NA	NA	NA	NA	NA
P21_b			2.1 (0.4; 11) 1.0 (0.2; 4.5) 1.2 (0.1; 20)	2.2 (0.4; 13) 0.3 (0.0; 5.6) 1.7 (0.1; 41)	NA	NA	NA	NA	3.9 (1.1; 14) * 1.0 (0.3; 2.9) 0.6 (0.2; 1.9)	4.0 (1.1; 15) 1.9 (0.3; 12) 0.7 (0.2; 2.3)	1.0 (0.2; 4.5) 0.5 (0.0; 6.2) 0.7 (0.1; 8.3)	1.1 (0.3; 3.5) 1.6 (0.1; 28) 0.7 (0.1; 5.4)
P21_c			1.0 (0.5; 1.9) 1.5 (0.8; 3.0) 1.4 (0.6; 3.4)	1.1 (0.5; 2.2) 0.9 (0.3; 2.6) 1.5 (0.6; 4.0)	0.2 (0.0; 0.8) * 0.9 (0.1; 6.1) 0.6 (0.1; 4.3)		NA	NA	1.8 (0.5; 6.4) 0.8 (0.2; 2.8) 1.3 (0.2; 10)	1.8 (0.5; 7.2) 1.0 (0.1; 12) 1.9 (0.2; 20)	4.3 (0.5; 36) 0.5 (0.2; 12) 1.0 (0.1; 22)	Not reliable, 3% detected
P22_a	Flupyradifurone	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	0.0 (0.0; 0.8) * 1.2 (0.0; 33) 0.6 (0.0; 18)	0.3 (0.1; 1.2) 0.7 (0.1; 4.2) 0.5 (0.1; 1.8)	NA	NA	NA	NA	NA	NA	0.1 (0.0; 1.9) 0.8 (0.0; 25) 0.8 (0.0; 27)	0.6 (0.1; 5.4) 0.1 (0.0; 3.0) 0.8 (0.0; 27)
P25_a	Fluvalinate	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P27_a	Imazalil	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	0.2 (0.1; 0.3) *** 1.1 (0.7; 2.0) 1.0 (0.5; 2.0)	0.2 (0.1; 0.4) *** 0.8 (0.4; 1.9) 1.1 (0.6; 2.2)	0.4 (0.2; 0.8) * 2.4 (1.1; 5.2) * 1.7 (0.6; 4.9)	0.4 (0.2; 1.1) . 1.1 (0.3; 4.3) 0.7 (0.2; 2.2)	0.2 (0.1; 0.5) *** 0.5 (0.2; 1.2) 0.6 (0.2; 2.0)	0.2 (0.1; 0.5) ** 0.3 (0.1; 1.1) . 0.7 (0.2; 2.3)	0.1 (0.0; 0.6) * 2.9 (0.2; 44) 0.9 (0.1; 11)	0.4 (0.2; 1.2) 3.1 (0.6; 15) 1.0 (0.4; 2.6) Not correct Edu	0.3 (0.1; 1.0) * 1.4 (0.6; 3.6) 1.6 (0.6; 4.2)	0.4 (0.1; 1.0) . 2.2 (0.4; 11) 1.6 (0.6; 4.1) not corrected for Edu
P28_a	Imidacloprid	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	0.6 (0.3; 1.0) * 1.4 (0.8; 2.5) 1.5 (0.7; 3.1)	0.5 (0.3; 1.0) * 1.8 (0.8; 4.2) 1.2 (0.6; 2.6)	0.2 (0.0; 1.4) 1.4 (0.3; 6.1) 1.4 (0.3; 6.2)	0.2 (0.0; 1.4) 0.7 (0.1; 6.2) 1.1 (0.2; 5.7)	0.9 (0.3; 2.5) 0.9 (0.3; 2.4) 0.9 (0.2; 3.3)	1.1 (0.4; 3.0) 0.5 (0.1; 2.0) 1.0 (0.3; 3.7)	NA	NA	1.1 (0.5; 2.1) 0.8 (0.4; 1.7) 1.2 (0.6; 2.5)	1.1 (0.5; 2.1) 0.9 (0.2; 3.3) 1.4 (0.6; 2.9)
P32_a	Penconazole	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	1.1 (0.5; 2.5) 2.2 (0.9; 5.0) . 0.7 (0.3; 1.7)	1.2 (0.5; 2.6) 2.9 (0.9; 9.0) . 0.8 (0.3; 1.9)	0.8 (0.2; 3.4) 0.8 (0.2; 3.4) 1.4 (0.3; 6.1)	0.8 (0.2; 3.4) 0.6 (0.1; 6.0) 1.6 (0.3; 7.7) Not correct PestUse	3.6 (0.7; 18) 1.3 (0.3; 4.8) 0.5 (0.1; 2.1)	9.5 (1.0; 93) 0.7 (0.0; 12) 0.7 (0.0; 38)	0.5 (0.1; 2.0) 2.0 (0.5; 8.3) 2.4 (0.6; 9.7)	0.6 (0.1; 2.5) 2.9 (0.3; 30) 2.2 (0.5; 9.3) Not correct Educ. PestUse unreliable estim	1.0 (0.3; 3.6) 1.5 (0.4; 5.5) 0.9 (0.3; 3.2)	1.0 (0.3; 3.6) 0.5 (0.1; 4.5) 0.8 (0.2; 3.0) not corrected for PestUse
P34_a	Pirimiphos-methyl	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	0.8 (0.4; 1.4) 0.4 (0.2; 0.9) * 0.7 (0.3; 1.4)	1.0 (0.5; 2.0) 0.2 (0.1; 0.7) * 1.1 (0.5; 2.5)	1.5 (0.8; 2.9) 0.4 (0.2; 0.9) * 1.0 (0.5; (1.9)	0.8 (0.2; 3.8) 0.6 (0.1; 5.4) 1.5 (0.3; 7.4)	3.6 (1.4; 9.4) ** 0.2 (0.1; 0.5) ** 0.1 (0.02; 0.4) ***	4.1 (1.5; 11) ** 0.1 (0.0; 0.3) *** 0.2 (0.1; 0.8) *	0.6 (0.4; 1.0) . 0.5 (0.3; 0.8) ** 1.5 (0.8; 2.7)	0.6 (0.4; 1.1) . 0.6 (0.2; 1.5) 1.3 (0.7; 2.5)	0.7 (0.4; 1.0) . 0.3 (0.2; 0.5) *** 1.4 (0.8; 2.7)	0.7 (0.4; 1.0) . 0.3 (0.1; 0.8) * 1.4 (0.8; 2.7)
P35_a	Propamocarb	Season 2 vs 1 Parent vs Child	1.9 (0.9; 4.1) . 1.1 (0.5; 2.5)	1.7 (0.8; 3.5) 1.2 (0.4; 3.4)	NA	NA	1.1 (0.6; 2.1) 0.4 (0.2; 1.0) *	1.1 (0.6; 2.2) 0.3 (0.1; 0.9) *	1.5 (0.4; 6.0) 0.5 (0.1; 3.9)	1.4 (0.5; 3.5) 1.5 (0.2; 10)	1.4 (0.9; 2.4) 1.0 (0.6; 1.6)	1.5 (0.9; 2.5) 3.1 (1.1; 8.5) *

		Agricultural vs Non-agricultural	1.3 (0.5; 3.1)	1.0 (0.4; 2.4)			0.5 (0.2; 1.0) .	0.5 (0.2; 1.2)	0.5 (0.1; 4.5)	0.5 (0.2; 1.9) Not correct educ	1.6 (0.8; 3.0)	1.9 (1.0; 3.6) .
P35_b			1.2 (0.7; 1.9) 1.1 (0.7; 1.9) 1.3 (0.7; 2.4)	1.1 (0.7; 1.9) 1.1 (0.5; 2.3) 1.2 (0.7; 2.2)	0.3 (0.1; 0.9) * 0.4 (0.1; 1.1) . 4.2 (1.1; 16) *	0.3 (0.1; 0.8) * 0.2 (0.0; 1.0) * 4.0 (1.0; 17) .	2.1 (1.2; 3.6) * 0.5 (0.3; 0.9) * 0.5 (0.3; 0.9) *	2.3 (1.3; 4.1) ** 0.4 (0.2; 0.8) * 0.5 (0.2; 1.0) *	1.4 (0.7; 2.6) 0.5 (0.3; 1.0) . 0.7 (0.3; 1.9)	1.4 (0.7; 2.8) 0.9 (0.2; 3.3) 0.8 (0.3; 2.1)	1.0 (0.6; 1.5) 1.2 (0.8; 1.8) 1.2 (0.7; 1.9)	1.0 (0.7; 1.5) 3.2 (1.4; 7.3) ** 1.3 (0.8; 2.2)
P37	Propyzamide	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	1.2 (0.6; 2.4) 2.3 (1.1; 5.0) * 1.8 (0.7; 4.4)	1.2 (0.6; 2.7) 1.4 (0.5; 4.2) 1.8 (0.7; 4.7)	NA	NA	NA	NA	NA	NA	NA	NA
P38_a	Pyrimethanil	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	0.6 (0.4; 1.0) * 0.8 (0.5; 1.2) 0.8 (0.5; 1.3)	0.7 (0.4; 1.0) . 0.7 (0.3; 1.3) 0.8 (0.5; 1.3)	2.1 (1.1; 3.8) * 1.0 (0.6; 1.8) 1.2 (0.6; 2.4)	2.1 (1.1; 3.8) * 1.3 (0.5; 3.2) 1.1 (0.5; 2.3)	1.3 (0.5; 3.8) 2.3 (0.8; 7.2) 0.4 (0.1; 2.0)	1.6 (0.5; 5.2) 1.7 (0.8; 7.4) 0.3 (0.0; 3.1)	0.4 (0.3; 0.7) ** 1.4 (0.9; 2.3) 0.9 (0.5; 1.7)	0.5 (0.3; 0.8) ** 2.1 (0.9; 5.3) 1.0 (0.5; 1.8)	0.6 (0.4; 1.0) * 0.8 (0.5; 1.2) 0.6 (0.4; 1.0) *	0.6 (0.4; 1.0) * 1.1 (0.5; 2.4) 0.6 (0.4; 0.9) *
P38_b			NA	NA	NA	NA	0.6 (0.2; 2.0) 1.2 (0.4; 4.0) 2.8 (0.7; 11)	0.6 (0.2; 2.5) 4.5 (0.9; 23) . 3.3 (0.7; 16)	NA	NA	NA	NA
P40_a	Tebuconazole	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	0.5 (0.3; 0.9) * 0.3 (0.2; 0.4) *** 0.9 (0.5; 1.7)	0.5 (0.3; 0.8) ** 0.2 (0.1; 0.4) *** 0.7 (0.4; 1.4)	3.3 (1.1; 9.3) * 0.8 (0.3; 2.1) 1.5 (0.4; 5.3)	2.8 (1.1; 7.4) 2.9 (0.7; 12) 1.5 (0.6; 4.0)	2.1 (1.2; 3.5) ** 0.3 (0.2; 0.5) *** 0.5 (0.3; 1.0) .	2.2 (1.3; 3.8) ** 0.5 (0.2; 0.9) * 0.5 (0.2; 1.0) *	0.7 (0.5; 1.0) . 0.2 (0.2; 0.4) *** 1.0 (0.6; 1.5)	0.7 (0.4; 1.0) . 0.4 (0.2; 0.7) ** 1.1 (0.7; 1.7)	0.6 (0.4; 1.0) . 0.1 (0.1; 0.2) *** 0.8 (0.4; 1.5)	0.6 (0.4; 1.1) . 0.2 (0.1; 0.5) *** 0.58 (0.4; 1.6)
P41_a	Thiabendazole	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P42_a	Thiacloprid	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	0.9 (0.4; 2.0) 0.4 (0.2; 1.0) * 1.6 (0.6; 4.4)	1.1 (0.5; 2.4) 0.3 (0.1; 1.2) . 1.6 (0.6; 4.5)	NA	NA	3.2 (0.8; 12) . 0.3 (0.1; 1.2) . 0.1 (0.0; 0.7) *	3.5 (0.9; 14) . 0.6 (0.1; 3.3) 0.1 (0.0; 0.5) * Not correct PestUse	0.9 (0.4; 2.0) 0.3 (0.1; 0.7) ** 1.6 (0.6; 4.7)	1.2 (0.6; 2.7) 0.2 (0.1; 1.1) . 2.1 (0.8; 5.8)	6.5 (1.5; 29) * 0.6 (0.2; 2.1) 0.4 (0.1; 3.5)	6.3 (1.3; 30) * 2.4 (0.2; 27) 0.5 (0.1; 4.0) not corrected for Edu
P43_a	Thiamethoxam	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	NA	NA	NA	NA	4.3 (0.9; 21) . 1.0 (0.3; 3.5) 10 (1.2; 80) *	3.7 (0.7; 20) 0.3 (0.1; 1.7) 7.2 (0.7; 79)	NA	NA	NA	NA
P43_b			94 (22; 396) *** 1.1 (0.7; 1.8) 0.6 (0.4; 1.1)	93 (22; 390) *** 1.3 (0.6; 2.7) 0.5 (0.3; 1.0) *	NA	NA	NA 1.4 (0.8; 2.3) 1.9 (1.1; 3.4) * (not detected in season 1..)	NA 1.0 (0.5; 1.9) 1.9 (1.0; 3.5) .	NA	NA	NA	NA
P46_a	Trifloxystrobin	Season 2 vs 1 Parent vs Child Agricultural vs Non-agricultural	NA	NA	NA	NA	NA	NA	2.3 (0.4; 15) 0.4 (0.0; 9.8) 1.0 (0.1; 19)	2.4 (0.3; 17) 0.1 (0.0; 25) 1.5 (0.1; 25)	2.3 (0.8; 6.8) 0.6 (0.2; 1.7) 1.5 (0.5; 4.3)	2.3 (0.8; 6.7) 2.6 (0.4; 17) 1.7 (0.6; 4.8)

F.

Additional Information F. Information on area selection and recruitment of participants.

1. Area selection

This paragraph describes the selection of the agricultural and non-agricultural areas per country.

1.1 Spain

The agricultural area is located in Valencia, which is the second most important agricultural area in Spain and one of the regions with the highest pesticide use: 12.1% of the national total in 2009 (ECPA, 2010). The selected area in Valencia was the village of Godella, located in the "Valencian orchard", around 10km northwest of the capital, with a population of more than 10,000 inhabitants and in close vicinity to agricultural areas. The main crops in this municipality are orchards and citrus. In these kind of crops, pesticide application takes place regularly during the spraying season. Households located in the municipality of Godella, Rocafort, Masarojos, Moncada or Burjasot were included. Eligible households were located within 250 meters distance to an orchard or citrus field. Satellite images (Google maps) were used to confirm that the home location of each participant was within 250 m of an agricultural field. Active application of pesticides in these areas was confirmed according to data from the Municipal Tax Agency of Godella and the information of the warning bulletins of the Department of Plant Health of the "Conselleria de Agricultura, Medio Ambiente, Cambio Climático y Desarrollo Rural" of the Valencian Government of 2018.

The non-agricultural area is located in the peri-urban areas of Madrid (outside the ring road of M40 which defines central/urban Madrid), with low levels of agricultural activity. Eligible households were located at least 500 meters away from any agricultural area based on the information provided by participants and checked using Google Maps.

1.2 Latvia

Multiple agricultural areas were defined because of the low population density in countryside and also difficult recruitment of study participants. The agricultural areas were chosen from Kurzeme and Zemgale regions since historically these regions of Latvia are the most used for agriculture purposes. Area selection was based on the agricultural register from 2017, where farmers submit their land use (hectares and crops grown). The register indicated the the largest total amount of agricultural land was located in Kurzeme and Zemgale regions.

Non-agricultural areas were defined as persons living at least 500m away from actively used agricultural lands – these were small villages, small cities and suburbs. We excluded possible study subjects that lived in the "big cities" that are known either because of their dense population (more than 10,000 inhabitants) or because of high economic activity – having many factories, a lot of traffic, etc.

Each study participant prior their acceptance in the study was asked how far from pesticide application sites do they live. This information was then evaluated using publicly available databases – one called kadastrs.lv was for checking the addresses to determine the cadastral number of the property which was then submitted in a system for checking agricultural land usage (all crop types were considered, mostly cereals and potatoes are grown in Latvia) called https://karte.lad.gov.lv/. This system provides the opportunity to measure the distance from a specific area (one's address) to agricultural lands. In this way we determined whether our study subjects fitted as agricultural or non-agricultural addresses.

The system updates according to the season – this creates a situation where different cultures and crops can be grown in agricultural areas. The data was gathered taking into account the current situation – starting from March, 2020. The data of previous season was used to determine whether the person lives in an area with agricultural lands nearby where pesticides are used actively. Some study participants had only one type of crop/fruit/vegetable fields around their houses while most had several different types of fields.

1.3 Hungary

The selection of the agricultural and non-agricultural areas was based on the volume of apple growing. Szabolcs-Szatmár-Bereg Country has the largest area of apple orchards (17577 ha out of the 25044 ha). Based on the data provided by the Hungarian Central Statistical Office (KSH), the apple production amounted to around 0.3 million tons (approximately 60% of the total volume produced in Hungary) in 2016. Almost all settlements in the county have apple orchards where pesticides are used; however, we selected those settlements were several apple orchards are located. The selection of the household and participants was based on the predefined criteria and the distance between each household and the orchard was checked by Google Maps. Furthermore, the Division of Agriculture Plant Protection and Soil Conservation Department of the Government Office of Szabolcs-Szatmár-Bereg County provided information on the pesticide use at the exposed locations (e.g. date, name of pesticide product and active ingredient, dose).
We selected certain settlements in Nógrád Country as the non-agricultural area, since there is no significant fruit growing in this region. Most of the selected households were located in peri-urban area; however, some of them were in urban or rural areas. The distance from agricultural areas was checked by Google Maps.

1.4 Czech Republic

The area of interest was selected with the use of ArcGIS PRO. Two GIS layers containing information were used: the Land Parcel Identification System (LPIS CZ, Ministry of Agriculture) (https://eagri.cz/public/app/eagriapp/lpisdata/) and the Registry of territorial identification, addresses and real estate (RUIAN CZ, State Administration of Land Surveying and Cadastre) (https://www.cuzk.cz/ruian/RUIAN.aspx). LPIS CZ contains data on location, area, and general type of land parcel (e.g., field, orchard, vineyard, forest, pasture…). RUIAN CZ contains information on addresses in the Czech Republic. The following procedure was then used:

1) Main focus was aimed at the South Moravian Region (SMR) in the Czech Republic (the Brno city is approximately in the center of SMR).
2) Only areas of fields, orchards, and vineyards were considered since we can expect the application of pesticides in these areas (LPIS CZ).
3) Street addresses in small cities (<5000 inhabitants) were extracted as layer (RUIAN CZ).
4) Buffer zone (250 m) around agricultural areas in SMR was created and intersected with the layer of street addresses. The street addresses within the buffer zone were considered potential agricultural areas.
5) Analogically, the buffer zone was expanded to 500 m and any street addresses not falling into this buffer zone were considered the non-agricultural area.

Address of those who expressed interest to join the study (and provided their home address) was then checked against the agricultural and non-agricultural area street addresses and potential participants were then categorized accordingly. The provisional check was also done via google.com/maps and mapy.cz. Finally, the surroundings were checked by field workers at the time of urine sample collection.

1.5 The Netherlands

Agricultural areas were areas with at least 100 inhabitants living within 250 meters from apple and pear orchards. A selection of addresses was made by combining two publicly available databases: the agricultural land-use database (2019), and the basic registration of buildings database (2019). All agricultural land use for apples and pears (orchards only) were selected, all buildings with a living function were selected. The focus was on the ‘Betuwe’ area, with the highest density of households fulfilling the criteria. This area is roughly located in the provinces Gelderland, Utrecht and part of North-Brabant between the rivers ‘Nederrijn’ and ‘Waal’.

Non-agricultural areas were defined as any address which was located at least 500 meters away from any agricultural land (including greenhouses). Households fulfilling these criteria from the Betuwe area and suburban Utrecht were included.

2. Recruitment of participants

This paragraph describes the recruitment strategies implement in the different areas within each country.

2.1 Spain

For the agricultural area, recruitment started on October 15, 2019 and ended October 25, 2019. The recruitment was done in primary schools located in Godella (Valencia). This fact facilitated finding children with the age object of study (between 6 and 11 years old) and also their parents (or caretaker) living in households within 250 meters of agricultural area(s). The recruitment has been performed in public schools only, in which the number of volunteers was reached. After recruitment, 4 families withdrew, resulting in a total of 52 parent-child pairs participating.

In order to encourage participation, those in charge of recruiting followed a flexible policy with regards to dates and contact hours with children's parents. First of all, a first meeting with the school board of directors was organized at beginning of October-19 in order to inform school staff about the project, to request support from the centre and to organize the first meeting with parents. The meetings with parents took place on 15th and 16th October 2019 in the following two primary schools of Godella: "CEIP Cervantes" and "CEIP El Barranquet". Copies of the information letter and invitation letter were provided to potential participants at this point. They also received the documents associated to the participation, such as a screening questionnaire, for further examination and consideration at home. Additionally, posters were displayed on schools to encourage the participation in the study.

For the non-agricultural area, recruitment started on June 14, 2019 and ended on September 30, 2019. Recruitment took place among co-workers. At the end of May 2019 a press note was released at the Spanish research institute webpage to inform workers about the project and about the 2 informative seminars that would take place in June. An email was sent at the beginning of June to all co-workers with basic information on the study. Additionally, posters were displayed to promote the seminars and to encourage participation in the HBM4EU study. At the seminars, the recruitment materials (information and invitation letters plus the screening questionnaire) were distributed to attendants. Recruitment started already at the seminars and followed by email among co-workers and co-workers' contacts willing to participate. A positive response was received from 60 families, however, 7 of them could not enter the study because they did not fulfil the selection criteria. This resulted in a total of 53 parent-child pairs participating. Those entering the study were given an envelope with the documentation associated to their participation i.e informed consent for parents, informed assent with an adapted language for child, FAQ sheet, information leaflet and the reply card as well as the urine sample collection kit in a portable coolbox with sampling instructions.

The study was approved by the medical ethical committee under number 20200109/10 for the agricultural area and by the Research Ethics Committee of the Instituto de Salud Carlos III under number CEI PI 34_2019-v2-Enmienda_2020 for the non-agricultural area .

2.2 Latvia

Recruitment took place from February 18, 2020 until March 31, 2020.

There were many stages and ways of recruitment of study participants. First a list of contacts of all schools taking part in "eco-school" programme was made and the schools were contacted via e-mail (in total 70 schools). Only one responded via email and so the schools were contacted individually via phone and asked whether they are willing to participate by allowing to spread information on the project to children and their parents. Information envelopes containing a brief description of project

activities, deadlines and contact persons were driven to schools for handing out. 33 respondents, mostly from agricultural areas, responded to this action.
A press release and a post on Facebook via Rīga Stradiņš University was made on October 21st, 2019, resulting in 400 shares. An email of general practitioners (family doctors) of Kurzeme and Zemgale regions were sent with information on this project as well.
Next banners and posters were made and sent out to Kurzeme and Zemgale local newspapers and the message was also put in "e-klase.lv" which is a system for all schools for organising the educational process – parents have access to the information on their child and checks the system regularly for grades, comments and information therefore a banner was made visible to parents from Kurzeme and Zemgale for a week (10,000 views), with little result. At this point the research team concluded, that despite the effort to limit our study participants to be only from Kurzeme and Zemgale, the insufficient count of participants broadened the borders, and study participants are mostly from Kurzeme and Zemgale, but also from Vidzeme and Latgale. In total 50 parent-child pairs from agricultural areas, and 51 parent-child pairs from non-agricultural areas were included.
The study was approved by the medical ethical committee of Rīga Stradiņš University under number 6-3/3/48.

2.3 Hungary

The recruitment of the participants was performed between October and December 2019 and was coordinated by the staff of the Public Health Department of the Szabolcs-Szatmár-Bereg and Nógrád County Government Offices in close collaboration with the project team of the National Public Health Center. The recruitment of the volunteers was done through the primary schools in Nódrág County (non-agricultural area), while the health visitors being very familiar with the local circumstances were also involved in Szabolcs-Szatmár-Bereg County (agricultural area). In total, 54 YES reply cards from 11 settlements and 40 NO reply cards were collected at the agricultural area. Regarding the non-agricultural area, 68 YES reply cards from 8 settlements and 199 NO reply cards were received. It must be noted that the difference might be caused by the different recruitment strategies applied at the two areas; the health visitors at the agricultural locations selected families with whom they have already been in contact before the study. During the selection process, the volunteers were checked for the predefined selection criteria and the most suitable and the most committed adult – child pairs were included in the study. Before the sample collection, the signed informed consents were collected.In the case of agricultural areas, we have requested spray logs through the Szabolcs-Szatmár-Bereg County Government Office, so we know when and with what they were sprayed.
According to the spray logs, acetamiprid, an insecticide and acaricide, was also used on the apples (agricultural area), but chlorpropham was not used.
The study was approved by the Medical Research Council of Hungary under registration number 15521-3/2019/EKU.

2.4 Czech Republic

Recruitment started in mid-September 2019 and was finished at the end of February 2020 during at that time ongoing first sampling season.
Recruitment of all participants was done by post (letters, ~ 1000 sent, very low response rate <1%), promotional leaflets (1000 – 1500 delivered, very low response rate <1%), internet advertisement (e.g., posting on Social network web pages, short announcements on local news pages, announcements on internet pages of selected towns after communication with town mayor), announcements in a radio station and announcement in news relation on CZ - TV.
Approximately 200 people expressed interest to join the study. About 90 of them did not meet the criteria to join (children out of age range, occupation associated with pesticides, etc.) or decided not

to join (for whatever reason). Overall, 111 participants (adults) were eligible and willing to join. Of these 111 families, 16 were “double families” – families with both parents involved in the study with two children. This meant that samples were collected from 95 unique address points. The remaining 16 address points are associated with two sets of parent-child pairs.
We have encountered 3 cases where parents reported the incorrect age of their child in the initial screening questionnaire. This issue was discovered during the fieldwork of the first sampling season. We have ultimately decided to finish the collection of such samples in the second sampling season. The age of children out of the study target range (6 to 12 years old) was 4 years old (1 from an agricultural address and 1 non-agricultural) and 15 years (from agricultural address).
The SPECIMEn study in the Czech Republic received ethical approval under ref. no. ELSPAC/EK/3/2019.

2.5 The Netherlands

Recruitment of participants started in November 2019 and continued until February 2020.
In the Netherlands it turned out to be quite a challenge to combine the databases of land and building-use with the basic administration of municipalities (GBA) because of privacy regulations. Since we had no access to the age of subjects from a specific residential location, letters were sent out at random to addresses within the selected postal codes. Two batches of letters were sent out, the first of 1,000, the second of 10,000. Each letter contained an information letter, the screening questionnaire, a reply card, informed consent for both parent and child, and an information brochure about the study. The first batch consisted of 500 agricultural and 500 non-agricultural area addresses and was send in the first week of November 2019. The second batch of 4,000 agricultural and 6,000 non-agricultural area addresses was send half of December 2019. The numbers of letters are quite high, since most of letters would go to non-eligible households e.g. without children. The response was around 2%, of which about half was not eligible to participate. For example, when one of the household members was working with pesticides.
Because of time pressure and urge to start collecting the samples in January, we decided to combine recruitment strategies. A news item was placed in local newspapers (Figure 5.5.2) and on news-websites, including a QR-code directing to the website of the study. The study-website (https://www.rivm.nl/europees-onderzoek-naar-bestrijdingsmiddelen-in-urine) included an online sign-up form were potential participants could complete the screening questionnaire. It turned out that specifically the addresses within agricultural areas were interested in participating and some non-agricultural addresses were still missing. Therefore, additional recruitment was done among co-workers with children to participate. In total 55 parent-child pairs were recruited from agricultural areas, and 50 parent-child pairs from non-agricultural areas.
The medical research ethics committee confirmed that the Dutch Medical Research Involving Human Subjects Act (WMO) does not apply to the above mentioned study and that therefore an official approval of this study by the MREC Utrecht was not required under the WMO (reference number WAG/mb/19/027712).