

**Table S1.** Correlated pesticide intensity-weighted days of use for model adjustment

Pesticides Studied	Correlated at Spearman $\rho > 0.40$				
<b>INSECTICIDES</b>					
Organochlorine					
Aldrin		Dieldrin	Heptachlor		
Chlordane		DDT			
DDT		2,4,5 T	Chlordane		
Heptachlor		Aldrin	Dieldrin		
Organophosphate					
Chlorpyrifos					
Diazinon					
Fonofos					
Malathion		Glyphosate	Carbaryl		
Phorate					
Terbufos					
Carbamate					
Carbaryl		Malathion			
Carbofuran					
Pyrethroid					
Permethrin					
<b>HERBICIDES</b>					
Dinitroaniline					
Pendimethalin					
Trifluralin		Metribuzin	Butylate		
Thiocarbamate					
Butylate		Metribuzin	Trifluralin		
EPTC					
Phenoxy					
2,4-D		Atrazine			
2,4,5 T		DDT			
Triazine					
Atrazine		2,4-D	Cyanazine	Alachlor	Metolachlor
Cyanazine		Atrazine	Alachlor		
Metribuzin		Butylate	Trifluralin		
Chloroacetanilide					
Alachlor		Atrazine	Cyanazine		
Metolachlor		Atrazine			
Other Herbicides					
Chlorimuron-ethyl					
Dicamba					
Glyphosate					
Imazethapyr					
Petroleum distillates					
<b>FUNGICIDES</b>					
Captan					
Metalaxyl					
<b>FUMIGANTS</b>					
Carbon tetrachloride					
/Carbon disulfide					
Methyl bromide					

**Table S2.** Multivariate<sup>a</sup> logistic regression examining intensity-weighted days of use of specific pesticides and positive anti-TPO autoantibody assay

	Intensity-weighted days	N <sup>b</sup>	OR	95% CI
<b>INSECTICIDES</b>				
Organochlorine				
Aldrin <sup>c</sup>	0	85	1.00	(ref)
	26–392	10	0.78	(0.19, 3.23)
	>392–10339	18	2.31	(0.79, 6.73)
	P <sub>trend</sub>			0.12
Chlordane <sup>c</sup>	0	92	1.00	(ref)
	24–315	9	1.12	(0.32, 4.00)
	>315–13020	11	0.95	(0.26, 3.53)
	P <sub>trend</sub>			0.96
DDT <sup>c</sup>	0	92	1.00	(ref)
	18–662	10	0.21	(0.03, 1.71)
	>662–172800	11	2.28	(0.73, 7.15)
	P <sub>trend</sub>			0.09
Heptachlor <sup>c</sup>	0	93	1.00	(ref)
	26–474	11	0.77	(0.19, 3.18)
	>474–30680	10	0.84	(0.21, 3.35)
	P <sub>trend</sub>			0.79
Organophosphate				
Chlorpyrifos	0	60	1.00	(ref)
	25–1005	33	1.54	(0.84, 2.86)
	>1005–53708	32	1.14	(0.59, 2.20)
	P <sub>trend</sub>			0.95
Diazinon <sup>c</sup>	0	86	1.00	(ref)
	28–420	11	0.44	(0.10, 1.89)
	>420–13423	13	1.53	(0.55, 4.22)
	P <sub>trend</sub>			0.58
Fonofos	0	78	1.00	(ref)
	28–982	22	0.70	(0.33, 1.50)
	>982–21948	23	0.78	(0.36, 1.69)
	P <sub>trend</sub>			0.57
Malathion <sup>c</sup>	0	29	1.00	(ref)
	20–780	27	0.49	(0.21, 1.13)
	>780–117600	32	1.01	(0.50, 2.06)
	P <sub>trend</sub>			0.50
Phorate <sup>3</sup>	0	79	1.00	(ref)
	28–588	12	0.35	(0.10, 1.18)
	>588–37758	15	1.18	(0.54, 2.60)
	P <sub>trend</sub>			0.66
Terbufos	0	62	1.00	(ref)
	34–1259	33	1.01	(0.53, 1.93)
	>1259–17748	28	0.99	(0.51, 1.92)
	P <sub>trend</sub>			0.97

	Intensity– weighted days	N <sup>b</sup>	OR	95% CI
<b>Carbamate</b>				
Carbaryl <sup>c</sup>	0	71	1.00	(ref)
	28–662	17	1.18	(0.47, 2.95)
	>662–227850	16	1.77	(0.66, 4.72)
	P <sub>trend</sub>			0.27
Carbofuran	0	67	1.00	(ref)
	28–858	27	1.48	(0.76, 2.88)
	>858–33837	26	1.50	(0.76, 2.98)
	P <sub>trend</sub>			0.28
<b>Other Insecticides</b>				
Permethrin	0	89	1.00	(ref)
	24–599	14	0.77	(0.35, 1.72)
	>599–612000	20	1.34	(0.68, 2.63)
	P <sub>trend</sub>			0.35
<b>HERBICIDES</b>				
<b>Dinitroaniline</b>				
Pendimethalin <sup>c</sup>	0	68	1.00	(ref)
	28–375	16	1.59	(0.69, 3.66)
	>375–14105	17	2.69	(1.29, 5.60) <sup>†</sup>
	P <sub>trend</sub>			0.01 <sup>†</sup>
Trifluralin	0	55	1.00	(ref)
	25–1411	28	1.06	(0.50, 2.21)
	>1411–113400	41	1.22	(0.59, 2.54)
	P <sub>trend</sub>			0.58
<b>Thiocarbamate</b>				
Butylate <sup>c</sup>	0	66	1.00	(ref)
	43–882	15	0.74	(0.26, 2.08)
	>882–22925	21	1.16	(0.47, 2.85)
	P <sub>trend</sub>			0.65
EPTC	0	87	1.00	(ref)
	33–588	14	0.57	(0.20, 1.66)
	>588–16461	19	1.46	(0.67, 3.15)
	P <sub>trend</sub>			0.33
<b>Phenoxy</b>				
2,4-D	0	25	1.00	(ref)
	68–2604	48	0.65	(0.32, 1.34)
	>2604–192780	53	0.53	(0.25, 1.13)
	P <sub>trend</sub>			0.22
2,4,5 T <sup>c</sup>	0	88	1.00	(ref)
	25–458	12	0.90	(0.25, 3.28)
	>458–29869	13	1.89	(0.73, 4.88)
	P <sub>trend</sub>			0.19
<b>Triazine</b>				
Atrazine	0	19	1.00	(ref)
	25–2604	43	1.72	(0.65, 4.52)
	>2604–113400	65	2.15	(0.75, 6.11)
	P <sub>trend</sub>			0.29

	Intensity– weighted days	N <sup>b</sup>	OR	95% CI
Cyanazine	0	48	1.00	(ref)
	25–1313	24	0.66	(0.31, 1.40)
	>1313–113400	48	1.20	(0.59, 2.42)
	P <sub>trend</sub>			0.35
Metribuzin <sup>c</sup>	0	61	1.00	(ref)
	33–385	14	0.86	(0.33, 2.26)
	>385–14850	21	1.71	(0.71, 4.12)
	P <sub>trend</sub>			0.18
Chloroacetanilide				
Alachlor	0	36	1.00	(ref)
	25–1358	41	0.86	(0.42, 1.73)
	>1358–68162	42	0.91	(0.45, 1.83)
	P <sub>trend</sub>			0.92
Metolachlor	0	54	1.00	(ref)
	25–1240	35	0.58	(0.28, 1.21)
	>1240–68162	31	0.98	(0.50, 1.91)
	P <sub>trend</sub>			0.71
Other Herbicides				
Chlorimuron-ethyl <sup>c</sup>	0	74	1.00	(ref)
	30–315	14	1.56	(0.68, 3.57)
	>315–7560	14	0.92	(0.37, 2.29)
	P <sub>trend</sub>			0.92
Dicamba	0	42	1.00	(ref)
	36–1046	35	0.66	(0.33, 1.31)
	>1046–107823	40	0.87	(0.45, 1.68)
	P <sub>trend</sub>			0.89
Glyphosate	0	32	1.00	(ref)
	20–907	49	0.77	(0.39, 1.53)
	>907–113400	46	1.00	(0.49, 2.01)
	P <sub>trend</sub>			0.67
Imazethapyr	0	62	1.00	(ref)
	33–600	26	1.06	(0.53, 2.11)
	>600–22500	30	1.40	(0.73, 2.67)
	P <sub>trend</sub>			0.30
Petroleum Distillates <sup>c</sup>	0	74	1.00	(ref)
	25–1110	9	0.16	(0.02, 1.17)
	>1110–253333	12	1.66	(0.75, 3.69)
	P <sub>trend</sub>			0.17
FUMIGANTS				
Carbon tetrachloride/ Carbon disulfide <sup>c</sup>	0	113	1.00	(ref)
	6–170	4	1.53	(0.34, 6.82)
	>170–18563	3	0.48	(0.05, 4.55)
	P <sub>trend</sub>			0.48
Methyl Bromide	0	117	1.00	(ref)
	12–1139	6	--	--
	>1139–102000	3	1.59	(0.33, 7.59)
	P <sub>trend</sub>			0.62
FUNGICIDES				
Captan	0	103	1.00	(ref)

	Intensity-weighted days	N <sup>b</sup>	OR	95% CI
Metalaxyl <sup>c</sup>	2–12	3	0.28	(0.04, 2.09)
	>12–46500	10	1.67	(0.61, 4.57)
	P <sub>trend</sub>			0.29
	0	105	1.00	(ref)
	3–141	6	0.38	(0.05, 2.89)
	>141–30341	4	1.35	0.65
	P <sub>trend</sub>			

Anti-TPO: Anti-thyroid peroxidase; OR: odds ratio; 95% CI: 95% Confidence Interval

<sup>a</sup>Adjusted for age, state, body-mass index, smoking, correlated pesticides

<sup>b</sup>Exposed cases

<sup>c</sup>Detailed information for these chemicals was collected on the take-home questionnaire at enrollment

<sup>†</sup>p<0.05 compared with never users

**Table S3.** Multivariate<sup>a</sup> regression models examining association between intensity-weighted days of specific pesticides and subclinical hypothyroidism (TSH>4.5 mIU/L) and natural log of TSH, T4, and T3, excluding participants with any anti-TPO positivity (N=65)

	Intensity-weighted days	Subclinical hypothyroidism		TSH and Thyroid Hormones			
		N <sup>b</sup>	OR (95% CI)	N <sup>c</sup>	TSH Expβ (95% CI)	T4 Expβ (95% CI)	T3 Expβ (95% CI)
<b>INSECTICIDES</b>							
<b>Organochlorine</b>							
<b>Aldrin<sup>d</sup></b>							
	0	62	1.00 (ref)	480	1.00 (ref)	1.00 (ref)	1.00 (ref)
	26–210	5	1.12 (0.33, 3.80)	24	1.17 (0.90, 1.52)	1.06 (0.94, 1.18)	1.07 (0.95, 1.21)
	>210–392	4	1.16 (0.29, 4.67)	17	0.84 (0.61, 1.14)	1.03 (0.90, 1.18)	0.98 (0.85, 1.13)
	>392–1117	7	3.74 (1.27, 11.0) <sup>†</sup>	17	1.33 (1.00, 1.77) <sup>†</sup>	1.11 (0.98, 1.25)	1.01 (0.89, 1.16)
	>1117–10339	7	4.36 (1.15, 16.6) <sup>†</sup>	18	1.22 (0.89, 1.67)	0.91 (0.79, 1.04)	0.92 (0.79, 1.06)
	P <sub>trend</sub>		0.01 <sup>†</sup>		0.07	0.36	0.29
<b>Chlordane<sup>d</sup></b>							
	0	70	1.00 (ref)	470	1.00 (ref)	1.00 (ref)	1.00 (ref)
	24–210	4	1.02 (0.31, 3.36)	21	0.97 (0.75, 1.25)	0.99 (0.89, 1.11)	0.96 (0.85, 1.08)
	>210–315	4	1.86 (0.52, 6.65)	15	0.90 (0.67, 1.22)	1.02 (0.89, 1.16)	1.02 (0.88, 1.18)
	>315–980	4	1.09 (0.32, 3.78)	19	1.05 (0.80, 1.38)	1.04 (0.92, 1.18)	1.03 (0.91, 1.18)
	>980–13020	3	0.92 (0.22, 3.87)	16	0.99 (0.72, 1.36)	0.96 (0.84, 1.10)	1.08 (0.93, 1.26)
	P <sub>trend</sub>		0.96		0.94	0.61	0.27
<b>DDT<sup>d</sup></b>							
	0	68	1.00 (ref)	477	1.00 (ref)	1.00 (ref)	1.00 (ref)
	18–240	5	1.00 (0.30, 3.32)	22	0.97 (0.74, 1.27)	1.01 (0.89, 1.13)	1.05 (0.93, 1.19)
	>240–662	4	0.79 (0.22, 2.79)	20	1.13 (0.85, 1.49)	1.04 (0.92, 1.17)	1.02 (0.90, 1.16)
	>662–2625	4	0.81 (0.21, 3.07)	18	0.93 (0.69, 1.26)	1.11 (0.97, 1.26)	1.07 (0.93, 1.23)
	>2625–172800	4	0.74 (0.18, 2.96)	19	1.02 (0.75, 1.39)	1.09 (0.95, 1.24)	1.00 (0.87, 1.15)
	P <sub>trend</sub>		0.72		0.93	0.29	0.83
<b>Heptachlor<sup>d</sup></b>							
	0	70	1.00 (ref)	496	1.00 (ref)	1.00 (ref)	1.00 (ref)
	26–182	4	1.53 (0.42, 5.64)	18	1.12 (0.83, 1.51)	0.94 (0.83, 1.07)	0.91 (0.79, 1.04)
	>182–474	6	3.73 (1.09, 12.8) <sup>†</sup>	16	1.35 (1.00, 1.82) <sup>†</sup>	1.05 (0.92, 1.19)	0.92 (0.80, 1.05)
	>474–980	6	1.50 (0.38, 5.85)	17	1.16 (0.84, 1.61)	0.92 (0.80, 1.05)	0.98 (0.85, 1.14)
	>980–30680	2	0.39 (0.07, 2.23)	16	1.02 (0.74, 1.40)	1.05 (0.92, 1.21)	1.06 (0.92, 1.23)
	P <sub>trend</sub>		0.65		0.53	0.89	0.65
<b>Organophosphate</b>							
<b>Chlorpyrifos</b>							
	0	50	1.00 (ref)	292	1.00 (ref)	1.00 (ref)	1.00 (ref)
	25–407	10	0.83 (0.39, 1.75)	78	0.92 (0.79, 1.06)	1.01 (0.95, 1.07)	1.02 (0.95, 1.09)
	>407–1005	13	1.21 (0.61, 2.42)	71	1.04 (0.90, 1.22)	1.03 (0.96, 1.10)	1.02 (0.96, 1.10)
	>1005–2807	16	1.37 (0.72, 2.61)	76	1.02 (0.88, 1.18)	1.07 (1.01, 1.14) <sup>†</sup>	1.02 (0.95, 1.09)
	>2807–53708	8	0.56 (0.25, 1.24)	79	0.96 (0.83, 1.10)	1.04 (0.98, 1.10)	1.01 (0.95, 1.08)
	P <sub>trend</sub>		0.22		0.68	0.16	0.73

	Intensity-weighted days	Subclinical hypothyroidism		TSH and Thyroid Hormones			
		N <sup>b</sup>	OR (95% CI)	N <sup>c</sup>	TSH Expβ (95% CI)	T4 Expβ (95% CI)	T3 Expβ (95% CI)
Diazinon <sup>d</sup>	0	63	1.00 (ref)	462	1.00 (ref)	1.00 (ref)	1.00 (ref)
	28–236	4	1.79 (0.56, 5.72)	19	1.23 (0.94, 1.60)	0.94 (0.84, 1.06)	1.00 (0.88, 1.13)
	>236–420	6	3.11 (1.10, 8.84) <sup>†</sup>	19	1.11 (0.86, 1.45)	1.04 (0.93, 1.17)	1.05 (0.93, 1.19)
	>420–882	5	2.34 (0.76, 7.16)	16	1.16 (0.87, 1.54)	1.05 (0.93, 1.19)	1.00 (0.87, 1.14)
	>882–13423	4	1.35 (0.41, 4.41)	18	1.13 (0.86, 1.49)	1.08 (0.96, 1.22)	1.02 (0.90, 1.16)
	P <sub>trend</sub>		0.38		0.28	0.16	0.72
Fonofos	0	57	1.00 (ref)	388	1.00 (ref)	1.00 (ref)	1.00 (ref)
	28–368	10	1.64 (0.76, 3.55)	53	0.96 (0.81, 1.13)	0.99 (0.93, 1.07)	0.98 (0.91, 1.06)
	>368–982	10	1.65 (0.75, 3.59)	47	1.03 (0.86, 1.23)	1.05 (0.97, 1.13)	1.04 (0.96, 1.13)
	>982–2646	11	1.49 (0.70, 3.19)	50	0.97 (0.82, 1.16)	0.99 (0.92, 1.06)	1.06 (0.98, 1.14)
	>2646–21948	7	0.99 (0.41, 2.39)	50	1.16 (0.98, 1.38)	1.02 (0.95, 1.10)	0.94 (0.87, 1.01)
	P <sub>trend</sub>		0.97		0.11	0.67	0.23
Malathion <sup>d</sup>	0	22	1.00 (ref)	161	1.00 (ref)	1.00 (ref)	1.00 (ref)
	20–276	10	1.27 (0.52, 3.06)	70	0.94 (0.8, 1.12)	1.01 (0.94, 1.09)	1.03 (0.95, 1.11)
	>276–780	12	1.40 (0.59, 3.33)	70	1.07 (0.90, 1.27)	1.01 (0.93, 1.08)	1.03 (0.95, 1.12)
	>780–2250	11	1.12 (0.45, 2.81)	70	0.93 (0.78, 1.11)	1.05 (0.97, 1.14)	1.02 (0.94, 1.11)
	>2250–117600	12	1.64 (0.67, 4.02)	68	1.11 (0.92, 1.33)	1.03 (0.95, 1.12)	1.03 (0.94, 1.12)
	P <sub>trend</sub>		0.37		0.22	0.44	0.76
Phorate <sup>d</sup>	0	61	1.00 (ref)	385	1.00 (ref)	1.00 (ref)	1.00 (ref)
	28–236	5	0.90 (0.33, 2.50)	33	1.02 (0.83, 1.26)	0.99 (0.91, 1.08)	0.98 (0.89, 1.07)
	>236–588	6	0.87 (0.33, 2.27)	38	1.09 (0.90, 1.33)	1.02 (0.94, 1.11)	1.04 (0.95, 1.13)
	>588–1302	5	0.88 (0.32, 2.43)	33	1.18 (0.96, 1.45)	1.00 (0.92, 1.09)	0.95 (0.87, 1.04)
	>1302–37758	6	0.92 (0.34, 2.46)	33	1.05 (0.85, 1.29)	1.04 (0.95, 1.13)	0.98 (0.90, 1.08)
	P <sub>trend</sub>		0.85		0.44	0.41	0.58
Terbufos	0	48	1.00 (ref)	280	1.00 (ref)	1.00 (ref)	1.00 (ref)
	34–463	14	1.34 (0.67, 2.67)	77	0.95 (0.82, 1.1)	1.00 (0.94, 1.06)	1.08 (1.01, 1.15) <sup>†</sup>
	>463–1259	11	0.88 (0.43, 1.84)	78	1 (0.86, 1.15)	1.01 (0.95, 1.07)	1.03 (0.96, 1.1)
	>1259–3368	10	0.73 (0.34, 1.55)	78	0.97 (0.84, 1.12)	1.02 (0.95, 1.08)	1.08 (1.01, 1.15) <sup>†</sup>
	>3368–17748	12	0.97 (0.47, 1.98)	78	1 (0.86, 1.16)	1.04 (0.98, 1.11)	1.08 (1.01, 1.15) <sup>†</sup>
	P <sub>trend</sub>		0.75		0.93	0.16	0.06
Carbamate Carbaryl <sup>d</sup>	0	57	1.00 (ref)	360	1.00 (ref)	1.00 (ref)	1.00 (ref)
	28–200	5	0.75 (0.26, 2.18)	36	0.82 (0.68, 1.01)	1.01 (0.93, 1.10)	1.06 (0.96, 1.16)
	>200–662	7	1.41 (0.54, 3.70)	34	1.00 (0.81, 1.22)	1.02 (0.93, 1.12)	1.05 (0.95, 1.16)
	>662–2315	7	1.11 (0.40, 3.09)	37	1.07 (0.87, 1.32)	1.10 (1.00, 1.20) <sup>†</sup>	1.03 (0.94, 1.14)
	>2315–227850	3	0.24 (0.06, 1.05)	33	0.94 (0.74, 1.20)	0.95 (0.85, 1.06)	0.90 (0.80, 1.01)
	P <sub>trend</sub>		0.05		0.74	0.32	0.04

	Intensity-weighted days	Subclinical hypothyroidism		TSH and Thyroid Hormones			
		N <sup>b</sup>	OR (95% CI)	N <sup>c</sup>	TSH Expβ (95% CI)	T4 Expβ (95% CI)	T3 Expβ (95% CI)
Carbofuran	0	55	1.00 (ref)	378	1.00 (ref)	1.00 (ref)	1.00 (ref)
	28–294	7	1.10 (0.46, 2.61)	46	0.79 (0.66, 0.94) <sup>†</sup>	1.00 (0.92, 1.07)	1.01 (0.93, 1.09)
	>294–858	11	1.55 (0.74, 3.25)	54	1.07 (0.91, 1.26)	1.03 (0.96, 1.10)	1.00 (0.93, 1.08)
	>858–2016	8	1.02 (0.44, 2.35)	47	1.04 (0.87, 1.24)	0.96 (0.89, 1.04)	1.01 (0.93, 1.09)
	>2016–33837	11	1.42 (0.68, 2.99)	55	0.99 (0.84, 1.16)	1.03 (0.96, 1.11)	1.04 (0.97, 1.12)
	P <sub>trend</sub>		0.39		0.86	0.48	0.31
Pyrethroid Permethrin	0	71	1.00 (ref)	417	1.00 (ref)	1.00 (ref)	1.00 (ref)
	24–230	7	0.95 (0.40, 2.24)	46	0.93 (0.78, 1.10)	0.95 (0.88, 1.02)	0.97 (0.89, 1.05)
	>230–599	5	0.65 (0.25, 1.74)	46	0.83 (0.70, 0.99) <sup>†</sup>	1.03 (0.96, 1.12)	0.98 (0.90, 1.06)
	>599–2021	7	0.97 (0.41, 2.31)	44	0.96 (0.80, 1.15)	1.07 (0.99, 1.16)	1.05 (0.97, 1.14)
	>2021–612000	5	0.73 (0.27, 1.94)	43	1.02 (0.85, 1.22)	1.07 (0.99, 1.15)	1.03 (0.95, 1.12)
	P <sub>trend</sub>		0.54		0.77	0.06	0.34
<b>HERBICIDES</b>							
Dinitroaniline Pendimethalin <sup>d</sup>	0	56	1.00 (ref)	381	1.00 (ref)	1.00 (ref)	1.00 (ref)
	28–208	6	1.18 (0.46, 3.04)	32	0.92 (0.75, 1.14)	0.99 (0.91, 1.09)	1.01 (0.92, 1.11)
	>208–375	5	1.03 (0.37, 2.92)	31	0.95 (0.77, 1.17)	1.00 (0.92, 1.10)	1.00 (0.90, 1.10)
	>375–1920	3	0.67 (0.19, 2.35)	30	1.05 (0.85, 1.30)	1.01 (0.92, 1.11)	1.01 (0.92, 1.12)
	>1920–14105	7	1.86 (0.73, 4.73)	29	1.12 (0.90, 1.38)	1.01 (0.92, 1.11)	0.96 (0.86, 1.06)
	P <sub>trend</sub>		0.25		0.28	0.85	0.45
Trifluralin	0	46	1.00 (ref)	282	1.00 (ref)	1.00 (ref)	1.00 (ref)
	25–632	10	0.66 (0.29, 1.49)	79	0.96 (0.82, 1.11)	0.98 (0.92, 1.05)	0.99 (0.93, 1.06)
	>632–1411	11	0.70 (0.31, 1.59)	79	0.89 (0.76, 1.04)	1.03 (0.96, 1.10)	1.00 (0.93, 1.07)
	>1411–3906	15	0.98 (0.45, 2.15)	77	0.96 (0.81, 1.13)	0.97 (0.90, 1.04)	0.96 (0.89, 1.03)
	>3906–113400	13	0.92 (0.42, 2.01)	76	1.09 (0.92, 1.28)	1.06 (0.99, 1.14)	1.04 (0.97, 1.12)
	P <sub>trend</sub>		0.91		0.17	0.09	0.23
Thiocarbamate Butylate <sup>d</sup>	0	52	1.00 (ref)	356	1.00 (ref)	1.00 (ref)	1.00 (ref)
	42.5–319	6	1.52 (0.51, 4.49)	36	0.93 (0.75, 1.15)	0.99 (0.90, 1.09)	0.98 (0.88, 1.08)
	>319–882	6	1.20 (0.40, 3.63)	37	1.10 (0.88, 1.36)	0.99 (0.90, 1.09)	1.00 (0.91, 1.11)
	>882–2184	6	1.03 (0.35, 3.03)	34	1.13 (0.91, 1.40)	0.99 (0.90, 1.09)	1.00 (0.91, 1.11)
	>2184–22925	8	1.65 (0.59, 4.60)	35	1.10 (0.88, 1.38)	0.99 (0.90, 1.10)	0.99 (0.89, 1.10)
	P <sub>trend</sub>		0.39		0.29	0.89	0.90



	Intensity-weighted days	Subclinical hypothyroidism		TSH and Thyroid Hormones			
		N <sup>b</sup>	OR (95% CI)	N <sup>c</sup>	TSH Expβ (95% CI)	T4 Expβ (95% CI)	T3 Expβ (95% CI)
EPTC	0	68	1.00 (ref)	462	1.00 (ref)	1.00 (ref)	1.00 (ref)
	33–225	5	1.26 (0.46, 3.50)	31	0.98 (0.80, 1.20)	1.01 (0.92, 1.11)	1.02 (0.93, 1.12)
	>225–588	6	1.40 (0.54, 3.62)	31	0.95 (0.77, 1.17)	0.99 (0.91, 1.09)	1.00 (0.91, 1.10)
	>588–1792	7	2.08 (0.83, 5.18)	29	1.09 (0.88, 1.35)	0.91 (0.83, 0.99) <sup>†</sup>	0.89 (0.81, 0.98) <sup>†</sup>
	>1792–16461	6	1.72 (0.66, 4.48)	29	1.07 (0.86, 1.32)	1.04 (0.95, 1.14)	1.06 (0.96, 1.17)
	P <sub>trend</sub>		0.18		0.45	0.68	0.58
Phenoxy 2,4-D	0	20	1.00 (ref)	104	1.00 (ref)	1.00 (ref)	1.00 (ref)
	68–878	17	0.69 (0.33, 1.45)	124	0.96 (0.82, 1.11)	0.97 (0.91, 1.04)	0.96 (0.89, 1.03)
	>878–2604	17	0.64 (0.30, 1.36)	124	1.00 (0.85, 1.16)	0.97 (0.91, 1.04)	0.97 (0.91, 1.04)
	>2604–7229	22	0.76 (0.36, 1.59)	126	1.12 (0.96, 1.31)	0.96 (0.90, 1.03)	0.97 (0.90, 1.04)
	>7229–192780	22	0.76 (0.35, 1.65)	122	1.11 (0.94, 1.31)	0.96 (0.89, 1.03)	0.94 (0.88, 1.02)
	P <sub>trend</sub>		0.96		0.10	0.48	0.28
2,4,5-T <sup>d</sup>	0	68	1.00 (ref)	469	1.00 (ref)	1.00 (ref)	1.00 (ref)
	25–263	4	1.55 (0.45, 5.33)	18	0.92 (0.69, 1.23)	0.95 (0.84, 1.07)	1.06 (0.93, 1.20)
	>263–458	5	1.33 (0.43, 4.15)	22	1.01 (0.78, 1.32)	0.95 (0.85, 1.06)	0.98 (0.87, 1.10)
	>458–1392	5	1.56 (0.52, 4.62)	20	1.21 (0.94, 1.58)	1.06 (0.95, 1.18)	1.01 (0.90, 1.13)
	>1392–29869	4	1.48 (0.42, 5.16)	16	1.01 (0.75, 1.37)	0.87 (0.77, 0.99) <sup>†</sup>	0.89 (0.77, 1.01)
	P <sub>trend</sub>		0.53		0.76	0.06	0.08
Triazine Atrazine	0	16	1.00 (ref)	94	1.00 (ref)	1.00 (ref)	1.00 (ref)
	25–980	20	0.87 (0.37, 2.03)	131	0.84 (0.71, 0.99)	1.03 (0.96, 1.10)	1.06 (0.98, 1.14)
	>980–2604	12	0.40 (0.16, 1.02)	130	0.75 (0.63, 0.88) <sup>†</sup>	1.04 (0.97, 1.12)	1.03 (0.95, 1.11)
	>2604–6962	28	1.27 (0.52, 3.08)	125	0.86 (0.72, 1.03)	0.99 (0.92, 1.07)	1.01 (0.93, 1.09)
	>6962–113400	22	1.26 (0.47, 3.36)	127	0.88 (0.72, 1.07)	0.99 (0.91, 1.08)	0.99 (0.90, 1.08)
	P <sub>trend</sub>		0.26		0.73	0.41	0.27
Cyanazine	0	39	1.00 (ref)	266	1.00 (ref)	1.00 (ref)	1.00 (ref)
	25–455	14	0.94 (0.43, 2.04)	83	0.99 (0.85, 1.15)	0.97 (0.91, 1.04)	0.95 (0.89, 1.02)
	>455–1313	5	0.26 (0.09, 0.76)	83	0.95 (0.82, 1.10)	1.00 (0.94, 1.07)	1.04 (0.97, 1.12)
	>1313–3689	20	2.22 (1.06, 4.61) <sup>†</sup>	77	1.14 (0.97, 1.33)	0.99 (0.92, 1.06)	0.99 (0.92, 1.06)
	>3689–113400	14	0.98 (0.43, 2.26)	79	1.07 (0.90, 1.27)	1.05 (0.97, 1.13)	1.03 (0.95, 1.11)
	P <sub>trend</sub>		0.58		0.31	0.17	0.49

	Intensity-weighted days	Subclinical hypothyroidism		TSH and Thyroid Hormones			
		N <sup>b</sup>	OR (95% CI)	N <sup>c</sup>	TSH Expβ (95% CI)	T4 Expβ (95% CI)	T3 Expβ (95% CI)
Metribuzin <sup>d</sup>	0	49	1.00 (ref)	322	1.00 (ref)	1.00 (ref)	1.00 (ref)
	33–221	3	0.37 (0.1, 1.36)	44	0.92 (0.76, 1.12)	1.05 (0.97, 1.14)	1.05 (0.96, 1.15)
	>221–385	7	0.92 (0.33, 2.54)	47	0.91 (0.75, 1.10)	0.98 (0.90, 1.07)	0.93 (0.85, 1.03)
	>385–1000	9	1.64 (0.61, 4.38)	37	1.22 (0.98, 1.50)	1.00 (0.91, 1.10)	1.05 (0.95, 1.16)
	>1000–14850	5	0.62 (0.18, 2.07)	40	0.96 (0.77, 1.19)	0.98 (0.89, 1.08)	0.99 (0.89, 1.10)
	P <sub>trend</sub>		0.70		0.94	0.58	0.99
Chloroacetanilide Alachlor	0	30	1.00 (ref)	197	1.00 (ref)	1.00 (ref)	1.00 (ref)
	25–502	23	2.21 (1.09, 4.45)	99	1.04 (0.90, 1.20)	1.00 (0.93, 1.06)	0.98 (0.92, 1.05)
	>502–1358	8	0.60 (0.25, 1.43)	95	0.95 (0.82, 1.09)	1.02 (0.95, 1.08)	0.98 (0.91, 1.04)
	>1358–4463	14	0.82 (0.38, 1.80)	94	1.03 (0.89, 1.19)	0.98 (0.92, 1.05)	1.00 (0.93, 1.07)
	>4463–68162	15	0.97 (0.43, 2.18)	95	0.97 (0.83, 1.14)	1.04 (0.97, 1.12)	0.99 (0.92, 1.07)
	P <sub>trend</sub>		0.69		0.69	0.23	0.94
Metolachlor	0	45	1.00 (ref)	285	1.00 (ref)	1.00 (ref)	1.00 (ref)
	25–455	15	1.28 (0.64, 2.55)	78	1.01 (0.88, 1.17)	0.99 (0.93, 1.05)	0.96 (0.90, 1.03)
	>455–1240	12	1.07 (0.51, 2.24)	76	1.10 (0.95, 1.27)	1.05 (0.99, 1.12)	0.96 (0.90, 1.03)
	>1240–4232	8	0.66 (0.28, 1.55)	73	0.95 (0.81, 1.11)	0.98 (0.92, 1.05)	0.98 (0.91, 1.05)
	>4232–68162	12	0.83 (0.36, 1.90)	73	1.02 (0.86, 1.21)	1.00 (0.93, 1.08)	0.99 (0.91, 1.07)
	P <sub>trend</sub>		0.54		0.89	0.97	0.97
Other Herbicides Chlorimuron-ethyl <sup>d</sup>	0	55	1.00 (ref)	394	1.00 (ref)	1.00 (ref)	1.00 (ref)
	30–118	4	1.02 (0.33, 3.10)	29	0.88 (0.71, 1.09)	0.98 (0.89, 1.08)	0.95 (0.86, 1.05)
	>118–315	5	1.23 (0.43, 3.54)	25	0.82 (0.65, 1.03)	1.07 (0.97, 1.19)	1.02 (0.92, 1.14)
	>315–588	6	1.78 (0.68, 4.66)	30	1.09 (0.88, 1.35)	1.02 (0.93, 1.12)	1.00 (0.90, 1.10)
	>588–7560	6	1.74 (0.65, 4.61)	29	1.04 (0.84, 1.29)	1.04 (0.95, 1.15)	0.98 (0.89, 1.09)
	P <sub>trend</sub>		0.18		0.73	0.27	0.81
Dicamba	0	33	1.00 (ref)	196	1.00 (ref)	1.00 (ref)	1.00 (ref)
	36–350	17	1.02 (0.51, 2.04)	102	0.89 (0.77, 1.02)	0.97 (0.91, 1.03)	0.94 (0.88, 1.01)
	>350–1046	10	0.53 (0.24, 1.18)	93	0.94 (0.81, 1.09)	0.97 (0.91, 1.03)	0.99 (0.92, 1.06)
	>1046–2699	13	0.80 (0.38, 1.69)	94	0.98 (0.84, 1.13)	0.96 (0.90, 1.03)	0.99 (0.93, 1.06)
	>2699–107823	16	1.04 (0.51, 2.12)	96	0.99 (0.86, 1.15)	0.99 (0.93, 1.05)	0.97 (0.91, 1.04)
	P <sub>trend</sub>		0.71		0.52	0.96	0.88

	Intensity-weighted days	Subclinical hypothyroidism		TSH and Thyroid Hormones			
		N <sup>b</sup>	OR (95% CI)	N <sup>c</sup>	TSH Expβ (95% CI)	T4 Expβ (95% CI)	T3 Expβ (95% CI)
Glyphosate	0	26	1.00 (ref)	159	1.00 (ref)	1.00 (ref)	1.00 (ref)
	20–315	17	1.03 (0.52, 2.03)	104	0.97 (0.84, 1.12)	1.03 (0.97, 1.09)	0.97 (0.91, 1.04)
	>315–907	21	1.13 (0.59, 2.15)	122	1.03 (0.90, 1.18)	1.00 (0.95, 1.06)	0.99 (0.94, 1.06)
	>907–2622	15	0.81 (0.40, 1.65)	109	1.03 (0.89, 1.18)	1.01 (0.95, 1.07)	0.99 (0.93, 1.06)
	>2622–113400	19	1.06 (0.53, 2.11)	112	1.11 (0.96, 1.28)	0.99 (0.93, 1.06)	0.97 (0.91, 1.03)
	P <sub>trend</sub>		0.95		0.11	0.57	0.44
Imazethapyr	0	49	1.00 (ref)	328	1.00 (ref)	1.00 (ref)	1.00 (ref)
	33–263	9	1.14 (0.51, 2.53)	63	0.91 (0.78, 1.07)	0.95 (0.88, 1.01)	0.96 (0.89, 1.03)
	>263–600	10	1.15 (0.53, 2.47)	66	1.10 (0.94, 1.28)	0.97 (0.91, 1.03)	0.96 (0.89, 1.03)
	>600–1176	12	1.41 (0.67, 2.93)	64	0.99 (0.85, 1.16)	0.93 (0.87, 1.00) <sup>†</sup>	0.96 (0.90, 1.04)
	>1176–22500	10	1.26 (0.58, 2.73)	62	1.09 (0.93, 1.28)	0.97 (0.91, 1.04)	0.99 (0.92, 1.06)
	P <sub>trend</sub>		0.49		0.27	0.36	0.78
Petroleum Distillates <sup>d</sup>	0	57	1.00 (ref)	371	1.00 (ref)	1.00 (ref)	1.00 (ref)
	25–372	5	1.24 (0.44, 3.54)	26	0.94 (0.75, 1.17)	0.98 (0.89, 1.08)	0.99 (0.89, 1.09)
	>372–1110	3	0.67 (0.19, 2.36)	27	1.21 (0.97, 1.51)	0.99 (0.90, 1.09)	1.00 (0.90, 1.11)
	>1110–3973	5	1.50 (0.51, 4.40)	22	1.12 (0.87, 1.43)	1.04 (0.93, 1.15)	1.06 (0.95, 1.19)
	>3973–253333	2	0.43 (0.09, 1.93)	23	1.04 (0.81, 1.32)	1.10 (0.99, 1.22)	0.92 (0.83, 1.03)
	P <sub>trend</sub>		0.32		0.63	0.07	0.25
<b>FUMIGANTS</b>							
Carbon Tetrachloride/ Carbon Disulfide <sup>d</sup>	0	86	1.00 (ref)	556	1.00 (ref)	1.00 (ref)	1.00 (ref)
	6–170	4	2.14 (0.63, 7.19)	14	1.11 (0.82, 1.51)	0.96 (0.84, 1.09)	0.95 (0.82, 1.09)
	>170–18563	3	1.31 (0.33, 5.22)	12	1.18 (0.84, 1.64)	0.94 (0.82, 1.09)	0.93 (0.80, 1.09)
	P <sub>trend</sub>		0.65		0.32	0.39	0.36
Methyl Bromide	0	91	1.00 (ref)	561	1.00 (ref)	1.00 (ref)	1.00 (ref)
	12–1139	4	0.93 (0.26, 3.40)	21	1.05 (0.79, 1.40)	0.93 (0.83, 1.06)	0.92 (0.81, 1.05)
	>1139–102000	2	0.28 (0.06, 1.43)	25	0.69 (0.53, 0.92) <sup>†</sup>	1.17 (1.03, 1.31) <sup>†</sup>	1.11 (0.98, 1.26)
	P <sub>trend</sub>		0.12		0.01 <sup>†</sup>	<0.01 <sup>†</sup>	0.049 <sup>†</sup>
<b>FUNGICIDES</b>							
Captan	0	81	1.00 (ref)	513	1.00 (ref)	1.00 (ref)	1.00 (ref)
	2–12	2	0.31 (0.07, 1.33)	35	0.87 (0.72, 1.06)	1.08 (0.99, 1.17)	1.07 (0.98, 1.17)
	>12–46500	7	1.74 (0.71, 4.29)	29	1.22 (0.99, 1.51)	1.04 (0.95, 1.15)	1.02 (0.92, 1.12)
	P <sub>trend</sub>		0.20		0.06	0.38	0.78
Metalaxyl <sup>d</sup>	0	83	1.00 (ref)	506	1.00 (ref)	1.00 (ref)	1.00 (ref)
	3–141	5	0.93 (0.33, 2.62)	27	1.05 (0.84, 1.31)	1.02 (0.93, 1.13)	1.04 (0.93, 1.15)
	>141–30341	2	0.31 (0.07, 1.47)	25	0.73 (0.57, 0.93) <sup>†</sup>	1.08 (0.97, 1.21)	0.97 (0.86, 1.09)
	P <sub>trend</sub>		0.14		0.01 <sup>†</sup>	0.17	0.57

TSH: Thyroid stimulating hormone; T4: thyroxine; T3: triiodothyronine; Anti-TPO: Anti-thyroid peroxidase; OR: odds ratio; 95% CI: 95% Confidence Interval; Expβ: Exponentiated β

<sup>a</sup>Adjusted for age, state, body mass index, smoking, correlated pesticides

<sup>b</sup>Exposed cases

<sup>c</sup>Total exposed

<sup>d</sup>Detailed information for these chemicals was collected on the take-home questionnaire at enrollment

<sup>†</sup>p<0.05 compared with never users