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Supplemental Material

Insecticide use and breast cancer risk among farmers' wives in the Agricultural Health Study

Lawrence S. Engel, Emily Werder, Jaya Satagopan, Aaron Blair, Jane A. Hoppin, Stella Koutros, Catherine C. Lerro, Dale P. Sandler, Michael C. Alavanja, Laura E. Beane Freeman

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Table S1. Associations of the relative extent of the wives' use of individual insecticides (reported at enrollment and/or the 5-year follow-up) with risk of breast cancer among farmers' wives in the Agricultural Health Study

Exposure	Timing of reporting of use	N exposed cases (n=906) ^a	N exposed non-cases (n=29,688)	Adjusted HR ^b	95% CI	Adjusted HR ^c	95% CI
Carbamates							
Carbaryl	Neither	442	14,627	1		1	
	Enrollment	180	4,864	1.0	(0.8, 1.2)	1.0	(0.9, 1.3)
	Follow-up	20	880	1.1	(0.8, 1.7)	1.2	(0.8, 1.8)
	Both	45	1,543	1.2	(0.9, 1.6)	1.1	(0.8, 1.5)
Organophosphates							
Chlorpyrifos	Neither	824	27,443	1		1	
	Enrollment	42	1,103	1.1	(0.8, 1.7)	1.5	(0.9, 2.3)
	Follow-up	5	177	1.4	(0.6, 3.4)	1.2	(0.4, 3.2)
	Both	< 5	33	-	-	-	-
Diazinon	Neither	661	21,394	1		1	
	Enrollment	76	2,173	1.1	(0.9, 1.4)	1.1	(0.8, 1.5)
	Follow-up	11	280	1.6	(0.9, 2.9)	1.5	(0.8, 3.0)
	Both	6	185	2.0	(1.0, 3.8)	1.9	(0.9, 4.1)
Malathion	Neither	480	15,483	1		1	
	Enrollment	138	3,681	0.9	(0.7, 1.1)	0.9	(0.7, 1.2)
	Follow-up	< 5	166	-	-	-	-
	Both	17	322	1.9	(1.2, 3.0)	1.9	(1.1, 3.2)

^a Numbers of exposed and unexposed may not sum to 100% for some insecticides due to missing data.

^b Time scale is attained age, with left truncation at cohort enrollment. Adjusted for time-varying menopausal status, race (White, other), and combined parity/age at first birth (nulliparous or all births after age 30 years; 1 birth, by age 30 years; ≥ 2 births, first of which was by age 30 years).

^c Adjusted as in ^b and additionally adjusted for use of benomyl, butylate, dicamba, mecoprop, metribuzin, bacillus thuringiensis, cyfluthrin, and toxaphene.

Table S2. Associations between ever use of individual insecticides by both the husband and the wife with risk of breast cancer among farmers' wives in the Agricultural Health Study. Exposure to a given insecticide is attributed to the wife if both wife and husband report its use.

Exposure ^a	User of insecticide	N exposed cases ^b (n=759)	N exposed non-cases (n=29,835)	Adjusted HR ^c	95% CI	Adjusted HR ^d	95% CI
Carbamates							
Carbaryl	Neither	200	9,079	1		1	
	Husband	100	3,372	0.6	(0.5, 0.8)	0.7	(0.5, 1.1)
	Wife	209	7,328	1.0	(0.8, 1.2)	1.0	(0.8, 1.3)
Carbofuran	Neither	499	20,625	1		1	
	Husband	132	4,414	0.8	(0.6, 1.0)	0.9	(0.6, 1.2)
	Wife	16	540	0.9	(0.5, 1.8)	1.7	(0.7, 4.4)
Organochlorines							
Aldrin	Neither	483	21,762	1		1	
	Husband	89	2,080	0.6	(0.5, 0.8)	0.8	(0.5, 1.2)
	Wife	6	230	0.3	(0.1, 1.4)	-	-
Chlordane	Neither	450	19,840	1		1	
	Husband	73	1,861	0.6	(0.5, 0.9)	0.8	(0.5, 1.2)
	Wife	30	1,166	0.6	(0.4, 1.0)	0.8	(0.4, 1.6)
DDT ^e	Neither	444	19,946	1		1	
	Husband	106	2,576	0.5	(0.4, 0.7)	0.5	(0.3, 0.8)
	Wife	37	985	0.8	(0.5, 1.2)	0.8	(0.4, 1.5)
Dieldrin	Neither	603	24,962	1		1	
	Husband	28	563	0.7	(0.4, 1.1)	0.7	(0.3, 1.4)
	Wife	5	97	1.8	(0.7, 4.8)	1.5	(0.2, 10.8)
Heptachlor	Neither	527	22,543	1		1	
	Husband	67	1,588	0.8	(0.6, 1.1)	0.8	(0.5, 1.2)
	Wife	9	212	0.8	(0.3, 2.1)	1.3	(0.3, 5.2)
Lindane	Neither	528	21,472	1		1	
	Husband	70	1,563	0.7	(0.5, 1.0)	1.0	(0.6, 1.6)
	Wife	10	408	1.0	(0.5, 1.9)	0.7	(0.2, 2.3)
Organophosphates							
Chlorpyrifos	Neither	425	17,193	1		1	
	Husband	233	8,791	1.1	(0.9, 1.4)	1.1	(0.8, 1.4)
	Wife	43	1,320	1.4	(0.9, 2.1)	1.6	(0.9, 2.9)
Coumaphos	Neither	602	23,909	1		1	
	Husband	43	1,475	1.0	(0.7, 1.5)	1.1	(0.7, 1.8)
	Wife	10	365	1.1	(0.5, 2.2)	0.8	(0.2, 3.2)
Diazinon	Neither	406	16,833	1		1	

Exposure ^a	User of insecticide	N exposed cases ^b (n=759)	N exposed non-cases (n=29,835)	Adjusted HR ^c	95% CI	Adjusted HR ^d	95% CI
Dichlorvos	Husband	78	2,187	0.9	(0.7, 1.2)	1.2	(0.8, 1.7)
	Wife	79	2,652	1.3	(1.0, 1.6)	1.2	(0.8, 1.7)
	Neither	572	23,581	1		1	
Fonofos	Husband	59	1,848	1.0	(0.7, 1.4)	0.8	(0.5, 1.3)
	Wife	26	748	0.9	(0.5, 1.6)	1.2	(0.6, 2.4)
	Neither	541	21,725	1		1	
Malathion	Husband	112	3,900	0.9	(0.7, 1.1)	0.8	(0.6, 1.2)
	Wife	15	541	0.9	(0.5, 1.8)	1.2	(0.4, 3.3)
	Neither	157	7,316	1		1	
Parathion	Husband	164	5,907	0.7	(0.6, 0.9)	0.8	(0.6, 1.0)
	Wife	137	4,191	0.9	(0.7, 1.2)	0.9	(0.7, 1.3)
	Neither	568	22,945	1		1	
Phorate	Husband	34	787	0.8	(0.5, 1.3)	1.0	(0.5, 1.9)
	Wife	9	256	1.5	(0.8, 3.1)	1.1	(0.3, 4.4)
	Neither	452	18,482	1		1	
Terbufos	Husband	93	3,091	0.7	(0.5, 0.9)	0.7	(0.4, 0.9)
	Wife	16	434	1.1	(0.6, 2.0)	2.0	(1.0, 4.1)
	Neither	432	17,535	1		1	
Pyrethroids	Husband	205	7,565	0.9	(0.8, 1.2)	1.1	(0.8, 1.4)
	Wife	27	831	1.2	(0.7, 2.0)	1.7	(0.9, 3.5)
	Neither	432	17,535	1		1	
Permethrin for animals	Neither	570	22,565	1		1	
	Husband	70	2,722	1.3	(0.9, 1.7)	1.0	(0.6, 1.5)
	Wife	23	1,100	1.0	(0.6, 1.6)	1.5	(0.8, 2.6)
Permethrin for crops	Neither	593	22,416	1		1	
	Husband	54	2,640	1.0	(0.7, 1.4)	1.1	(0.7, 1.8)
	Wife	11	644	0.8	(0.4, 1.7)	1.1	(0.4, 2.6)

^a Restricted to insecticides that were reported used by at least 5 wives and 5 husbands.

^b Numbers of exposed and unexposed may not sum to 100% for some insecticides due to missing data.

^c Time scale is attained age, with left truncation at enrollment. Adjusted for time-varying menopausal status, race, state, and combined parity/age at first birth.

^d Adjusted as in ^c and additionally adjusted for the wife's use of benomyl, butylate, dicamba, mecoprop, metribuzin, bacillus thuringiensis, cyfluthrin, and toxaphene and the husband's use of 2,4,5-T, 2,4,5-TP, trifluralin, aldicarb, and dieldrin.

^e DDT=dichlorodiphenyltrichloroethane.

Table S3. Associations between the wives' ever use of individual insecticides at enrollment and risk of breast cancer among farmers' wives in the Agricultural Health Study, stratified by state of residence

Exposure	Iowa				North Carolina			
	N exposed cases (n=703)	N exposed non-cases (n=20,182)	Adjusted HR ^a	95% CI	N exposed cases (n=378)	N exposed non-cases (n=9,331)	Adjusted HR ^a	95% CI
Any insecticide	302	8,152	1.0	(0.9, 1.2)	145	3,268	1.1	(0.9, 1.3)
Carbamates	223	6,092	1.0	(0.8, 1.1)	130	2,997	1.0	(0.8, 1.3)
Carbaryl	213	5,925	0.9	(0.8, 1.1)	129	2,959	1.0	(0.8, 1.3)
Carbofuran	17	421	1.2	(0.7, 2.2)	< 5	114	-	-
Organochlorines	58	1,540	0.8	(0.6, 1.1)	29	609	1.0	(0.7, 1.5)
Aldrin	6	211	0.8	(0.3, 2.1)	< 5	21	-	-
Chlordane	32	894	0.8	(0.5, 1.2)	15	284	1.0	(0.5, 1.8)
DDT ^b	32	675	0.9	(0.6, 1.4)	16	322	0.9	(0.5, 1.5)
Dieldrin	6	92	1.8	(0.7, 4.9)	< 5	10	-	-
Heptachlor	10	209	1.6	(0.8, 3.3)	< 5	6	-	-
Lindane	9	317	0.8	(0.4, 1.7)	6	108	1.2	(0.5, 3.0)
Toxaphene	< 5	108	-	-	6	90	1.1	(0.5, 2.8)
Organophosphates	200	5,443	1.0	(0.8, 1.2)	100	1,946	1.3	(1.0, 1.6)
Chlorpyrifos	36	824	1.5	(1.0, 2.2)	15	306	1.4	(0.8, 2.5)
Coumaphos	15	273	1.9	(1.0, 3.3)	< 5	83	-	-
Diazinon	61	1,836	0.9	(0.7, 1.2)	57	1,066	1.4	(1.0, 1.9)
Dichlorvos	30	668	1.1	(0.7, 1.7)	< 5	44	-	-
Fonofos	18	518	1.0	(0.6, 1.8)	< 5	20	-	-
Malathion	148	20	0.9	(0.7, 1.1)	78	1,449	1.2	(0.9, 1.6)
Parathion	8	178	1.4	(0.6, 3.2)	5	111	1.1	(0.4, 2.8)
Phorate	20	509	1.2	(0.7, 2.1)	< 5	52	-	-
Terbufos	30	726	1.3	(0.9, 2.1)	7	88	2.5	(1.1, 5.5)
Pyrethroids	37	1,084	1.0	(0.7, 1.5)	8	276	0.6	(0.2, 1.4)
Permethrin for animals	29	843	1.0	(0.6, 1.5)	< 5	134	-	-
Permethrin for crops	11	383	1.0	(0.5, 1.9)	6	185	0.7	(0.3, 1.9)

^a Reference category is Never exposed for all analyses. Time scale is attained age, with left truncation at cohort enrollment. Adjusted for time-varying menopausal status, race (White, other), and combined parity/age at first birth (nulliparous or all births after age 30 years; 1 birth, by age 30 years; ≥ 2 births, first of which was by age 30 years). Additionally adjusted for use of benomyl, metribuzin, butylate, and toxaphene, except for any insecticide and toxaphene, which were additionally adjusted for use of benomyl, metribuzin, and butylate only.

^b DDT = dichlorodiphenyltrichloroethane.

Table S4. Associations between the wives' ever use of individual insecticides at enrollment and risk of breast cancer among farmers' wives in the Agricultural Health Study, stratified by menopausal status at diagnosis

Exposure	Premenopausal			Postmenopausal			Interact- ion <i>p</i>
	N exposed cases (<i>n</i> =145)	Adjusted HR ^a	95% CI	N exposed cases (<i>n</i> =936)	Adjusted HR ^a	95% CI	
Any insecticide	58	1.3	(0.9, 1.8)	389	1.0	(0.9, 1.1)	0.18
Carbamates	41	1.2	(0.8, 1.6)	312	1.0	(0.8, 1.1)	0.32
Carbaryl	39	1.2	(0.8, 1.6)	303	1.0	(0.8, 1.1)	0.33
Carbofuran	< 5	-	-	18	1.0	(0.6, 1.8)	-
Organochlorines	9	1.1	(0.5, 2.4)	78	0.9	(0.7, 1.1)	0.52
Aldrin	< 5	-	-	7	0.6	(0.2, 1.7)	-
Chlordane	7	1.4	(0.6, 3.5)	40	0.8	(0.6, 1.1)	0.23
DDT ^b	< 5	-	-	45	0.9	(0.6, 1.2)	-
Dieldrin	< 5	-	-	6	1.4	(0.5, 3.7)	-
Heptachlor	< 5	-	-	9	1.2	(0.6, 2.6)	-
Lindane	< 5	-	-	13	0.8	(0.4, 1.6)	-
Toxaphene	< 5	-	-	6	0.7	(0.3, 1.6)	-
Organophosphates	35	1.1	(0.8, 1.6)	265	1.0	(0.9, 1.2)	0.71
Chlorpyrifos	8	1.9	(1.0, 3.8)	43	1.3	(0.9, 1.9)	0.34
Coumaphos	< 5	-	-	14	1.2	(0.7, 2.3)	-
Diazinon	14	1.1	(0.6, 1.8)	104	1.1	(0.8, 1.3)	0.96
Dichlorvos	6	2.0	(0.8, 4.8)	26	0.9	(0.6, 1.5)	0.15
Fonofos	< 5	-	-	16	1.0	(0.5, 1.8)	-
Malathion	20	0.9	(0.6, 1.4)	206	1.0	(0.8, 1.2)	0.60
Parathion	< 5	-	-	12	1.4	(0.7, 2.6)	-
Phorate	5	2.5	(1.0, 6.2)	17	0.9	(0.5, 1.6)	0.05
Terbufos	8	2.6	(1.3, 5.4)	29	1.2	(0.8, 1.9)	0.08
Pyrethroids	11	1.6	(0.9, 3.0)	34	0.7	(0.5, 1.1)	0.04
Permethrin for animals	8	1.3	(0.6, 2.8)	24	0.7	(0.4, 1.2)	0.20
Permethrin for crops	< 5	-	-	13	0.7	(0.4, 1.4)	-

^a Reference category is Never exposed for all analyses. Time scale is attained age, with left truncation at cohort enrollment. Adjusted for race (White, other), state (Iowa, North Carolina), and combined parity/age at first birth (nulliparous or all births after age 30 years; 1 birth, by age 30 years; ≥ 2 births, first of which was by age 30 years). Additionally adjusted for use of benomyl, metribuzin, butylate, and toxaphene, except for *any insecticide* and toxaphene, which were additionally adjusted for use of benomyl, metribuzin, and butylate only.

^b DDT = dichlorodiphenyltrichloroethane.

Table S5. Associations between the wives' ever use of individual insecticides at enrollment and risk of breast cancer among farmers' wives in the Agricultural Health Study, stratified by tumor hormone receptor status

Exposure	ER+				ER-				Interact- ion <i>p</i>
	N exposed cases (<i>n</i> =712)	N exposed non-cases (<i>n</i> =29,513)	Adjusted HR ^a	95% CI	N exposed cases (<i>n</i> =190)	N exposed non-cases (<i>n</i> =29,513)	Adjusted HR ^a	95% CI	
Any insecticide	296	11,505	1.0	(0.9, 1.2)	85	11,716	1.2	(0.9, 1.6)	0.33
Carbamates	232	9,153	1.0	(0.8, 1.1)	64	9,321	1.1	(0.8, 1.6)	0.34
Carbaryl	225	8,945	0.9	(0.8, 1.1)	61	9,109	1.1	(0.8, 1.6)	0.31
Carbofuran	14	540	1.1	(0.6, 2.1)	5	549	1.2	(0.4, 3.8)	0.95
Organochlorines	55	2,164	0.8	(0.6, 1.1)	15	2,204	0.9	(0.5, 1.6)	0.63
Aldrin	5	234	0.7	(0.2, 2.1)	< 5	237	-	-	-
Chlordane	28	1,186	0.7	(0.5, 1.1)	8	1,206	0.8	(0.4, 1.9)	0.78
DDT ^b	30	1,004	0.8	(0.5, 1.2)	7	1,027	1.0	(0.4, 2.3)	0.57
Dieldrin	< 5	105	-	-	< 5	105	-	-	-
Heptachlor	7	217	1.4	(0.6, 3.3)	< 5	222	-	-	-
Lindane	7	429	0.6	(0.2, 1.4)	< 5	432	-	-	-
Toxaphene	< 5	199	-	-	< 5	199	-	-	-
Organophosphates	190	7,447	0.9	(0.8, 1.1)	58	7,579	1.2	(0.9, 1.7)	0.21
Chlorpyrifos	32	1,142	1.5	(1.0, 2.2)	12	1,162	1.5	(0.7, 3.1)	0.93
Coumaphos	11	358	1.4	(0.7, 2.8)	< 5	367	-	-	-
Diazinon	69	2,924	0.9	(0.7, 1.2)	22	2,971	1.3	(0.8, 2.0)	0.17
Dichlorvos	25	715	1.3	(0.8, 2.0)	< 5	737	-	-	-
Fonofos	13	542	1.0	(0.5, 2.0)	< 5	551	-	-	-
Malathion	145	5,604	0.9	(0.7, 1.1)	43	5,706	1.1	(0.8, 1.6)	0.26
Parathion	10	289	1.6	(0.8, 3.3)	< 5	299	-	-	-
Phorate	17	564	1.2	(0.7, 2.1)	< 5	578	-	-	-
Terbufos	25	821	1.4	(0.9, 2.2)	7	839	1.5	(0.7, 3.6)	0.84
Pyrethroids	27	1,370	0.8	(0.5, 1.3)	10	1,387	0.9	(0.4, 2.0)	0.88
Permethrin for animals	21	985	0.9	(0.5, 1.4)	8	998	0.9	(0.4, 2.3)	0.90
Permethrin for crops	8	571	0.6	(0.3, 1.4)	< 5	576	-	-	-

^a Reference category is Never exposed for all analyses. Time scale is attained age, with left truncation at cohort enrollment. Adjusted for time-varying menopausal status, race (White, other), state (Iowa, North Carolina), and combined parity/age at first birth (nulliparous or all births after age 30 years; 1 birth, by age 30 years; ≥ 2 births, first of which was by age 30 years). Additionally adjusted for use of benomyl, metribuzin, butylate, and toxaphene, except for *any insecticide* and toxaphene, which were additionally adjusted for use of benomyl, metribuzin, and butylate only.

^b DDT = dichlorodiphenyltrichloroethane.

Table S6. Associations between the husbands' use of individual insecticides and risk of breast cancer among farmers' wives who never used pesticides in the Agricultural Health Study, stratified by state of residence

Exposure ^b	Level	Iowa				North Carolina			
		N exposed cases (n=224) ^a	N exposed non-cases (n=8,121)	Adjusted HR ^b	95% CI	N exposed cases (n=152) ^a	N exposed non-cases (n=5,003)	Adjusted HR ^b	95% CI
<i>Ever/never</i>									
Carbamates									
Aldicarb	Never	211	7,685	1		102	3,173	1	
	Ever	< 5	47	-	-	9	492	0.9	(0.4, 1.8)
Carbaryl	Never	105	4,643	1		33	973	1	
	Ever	48	1,277	0.9	(0.6, 1.4)	50	1,595	0.5	(0.3, 1.0)
Carbofuran	Never	144	5,856	1		94	3,235	1	
	Ever	60	1,803	1.0	(0.7, 1.5)	18	582	1.1	(0.6, 2.2)
Organochlorines									
Aldrin	Never	136	6,305	1		113	3,881	1	
	Ever	46	798	1.2	(0.7, 2.1)	< 5	158	-	-
Chlordane	Never	139	6,362	1		99	3,029	1	
	Ever	31	593	1.1	(0.6, 1.9)	12	448	0.5	(0.2, 1.1)
DDT ^c	Never	141	6,378	1		89	2,918	1	
	Ever	47	729	1.2	(0.7, 2.1)	18	616	0.5	(0.2, 1.0)
Dieldrin	Never	182	7,305	1		124	4,194	1	
	Ever	18	204	1.6	(0.8, 3.2)	< 5	51	-	-
Heptachlor	Never	142	6,342	1		126	4,172	1	
	Ever	40	685	1.3	(0.8, 2.1)	< 5	77	-	-
Lindane	Never	159	6,211	1		111	3,759	1	
	Ever	26	574	0.8	(0.5, 1.5)	13	211	1.8	(0.9, 3.8)
Toxaphene	Never	183	7,150	1		104	3,482	1	
	Ever	20	311	1.4	(0.8, 2.6)	7	347	0.5	(0.2, 1.3)
Organophosphates									
Coumaphos	Never	190	6,995	1		115	3,771	1	
	Ever	15	558	0.9	(0.5, 1.7)	< 5	185	-	-
Diazinon	Never	154	6,036	1		70	2,381	1	
	Ever	26	607	1.1	(0.6, 1.8)	26	700	1.3	(0.8, 2.3)
Dichlorvos	Never	179	6,822	1		112	3,943	1	
	Ever	27	843	0.8	(0.4, 1.3)	< 5	74	-	-
Fonofos	Never	140	5,762	1		113	3,871	1	
	Ever	68	2,005	1.3	(0.9, 1.8)	< 5	137	-	-
Malathion	Never	49	2,266	1		51	1,594	1	

Parathion	Ever	86	2,769	0.8	(0.5, 1.2)	35	1,228	0.6	(0.4, 1.1)	
	Never	186	7,192	1		97	3,255	1		
Phorate	Ever	9	150	1.6	(0.8, 3.5)	8	290	0.8	(0.3, 1.8)	
	Never	116	4,772	1		107	3,668	1		
Terbufos	Ever	51	1,495	0.7	(0.5, 1.1)	7	284	1.4	(0.6, 3.6)	
	Never	107	4,336	1		101	3,311	1		
Pyrethroids	Ever	102	3,458	1.2	(0.9, 1.6)	14	640	1.1	(0.5, 2.3)	
	Never	179	6,455	1		113	3,906	1		
Permethrin for animals	Ever	28	1,322	0.8	(0.5, 1.4)	< 5	118	-	-	
	Never	185	6,676	1		106	3,479	1		
Permethrin for crops	Ever	21	928	0.7	(0.3, 1.3)	10	487	0.8	(0.3, 2.1)	
	Never									
<i>Median</i>										
Chlorpyrifos	None	116	4,523	1		102	3,088	1		
	Any	106	3,486	1.1	(0.8, 1.5)	34	1,378	0.9	(0.5, 1.6)	
	≤ Median	62	1,677	1.2	(0.8, 1.8)	19	638	0.7	(0.3, 1.6)	
	> Median	40	1,656	1.1	(0.7, 1.6)	11	605	1.0	(0.5, 2.2)	
P trend=0.45						P trend=0.63				

^a Numbers of exposed and unexposed may not sum to 100% for some insecticides due to missing data.

^b Reference category is Never exposed for all analyses. Other categories are defined among only the exposed. Time scale is attained age, with left truncation at cohort enrollment. Adjusted for time-varying menopausal status, race (White, other), and combined parity/age at first birth (nulliparous or all births after age 30 years; 1 birth, by age 30 years; ≥ 2 births, first of which was by age 30 years). Additionally adjusted for use of 2,4,5-T, 2,4,5-TP, trifluralin, aldicarb, and dieldrin.

^c DDT = dichlorodiphenyltrichloroethane.

Table S7. Associations between the husbands' use of individual insecticides and risk of breast cancer among farmers' wives who never used pesticides in the Agricultural Health Study, stratified by menopausal status at diagnosis

Exposure	Level	Premenopausal			Postmenopausal			Interact- ion <i>p</i>
		N exposed cases (<i>n</i> =54) ^a	Adjusted HR ^b	95% CI	N exposed cases (<i>n</i> =322) ^a	Adjusted HR ^b	95% CI	
<i>Ever/never</i>								
Carbamates								
Aldicarb	Never	47	1		266	1		
	Ever	< 5	-	-	9	0.8	(0.4, 1.6)	-
Carbaryl	Never	28	1		110	1		
	Ever	< 5	-	-	94	0.9	(0.6, 1.4)	-
Carbofuran	Never	40	1		198	1		
	Ever	10	1.0	(0.5, 2.0)	68	1.1	(0.7, 1.5)	0.83
Organochlorines								
Aldrin	Never	45	1		204	1		
	Ever	< 5	-	-	49	1.3	(0.8, 2.0)	-
Chlordane	Never	42	1		196	1		
	Ever	< 5	-	-	43	0.8	(0.5, 1.4)	-
DDT ^c	Never	47	1		183	1		
	Ever	< 5	-	-	64	0.9	(0.6, 1.4)	-
Dieldrin	Never	50	1		256	1		
	Ever	< 5	-	-	18	1.2	(0.6, 2.3)	-
Heptachlor	Never	46	1		222	1		
	Ever	< 5	-	-	41	1.3	(0.8, 2.1)	-
Lindane	Never	40	1		230	1		
	Ever	< 5	-	-	36	1.1	(0.7, 1.9)	-
Toxaphene	Never	43	1		244	1		
	Ever	< 5	-	-	26	0.9	(0.5, 1.6)	-
Organophosphates								
Chlorpyrifos	Never	33	1		185	1		
	Ever	19	0.9	(0.5, 1.5)	121	1.1	(0.8, 1.5)	0.48
Coumaphos	Never	47	1		258	1		
	Ever	< 5	-	-	16	1.1	(0.6, 1.9)	-
Diazinon	Never	36	1		188	1		
	Ever	< 5	-	-	50	1.3	(0.9, 1.9)	-
Dichlorvos	Never	45	1		246	1		
	Ever	< 5	-	-	25	0.7	(0.4, 1.4)	-
Fonofos	Never	43	1		210	1		

Malathion	Ever	7	0.6	(0.3, 1.4)	64	1.5	(1.1, 2.2)	0.04
	Never	18	1		82	1		
Parathion	Ever	7	0.5	(0.2, 1.2)	114	0.8	(0.5, 1.1)	0.39
	Never	46	1		237	1		
Phorate	Ever	< 5	-	-	17	1.2	(0.7, 2.2)	-
	Never	33	1		190	1		
Terbufos	Ever	5	0.7	(0.3, 1.7)	53	0.9	(0.6, 1.3)	0.62
	Never	30	1		178	1		
Pyrethroids	Ever	20	1.3	(0.8, 2.3)	96	1.1	(0.8, 1.6)	0.59
	Never							
Permethrin for animals	Never	44	1		248	1		
	Ever	6	0.5	(0.2, 1.3)	26	1.0	(0.6, 1.8)	0.17
Permethrin for crops	Never	40	1		251	1		
	Ever	8	0.6	(0.2, 1.8)	23	0.7	(0.4, 1.4)	0.80

^a Numbers of exposed and unexposed may not sum to 100% for some insecticides due to missing data.

^b Reference category is Never exposed for all analyses. Time scale is attained age, with left truncation at cohort enrollment. Adjusted for race (White, other), state (Iowa, North Carolina), and combined parity/age at first birth (nulliparous or all births after age 30 years; 1 birth, by age 30 years; ≥ 2 births, first of which was by age 30 years). Additionally adjusted for use of 2,4,5-T, 2,4,5-TP, trifluralin, aldicarb, and dieldrin.

^c DDT = dichlorodiphenyltrichloroethane.

Table S8. Associations between the husbands' use of individual insecticides and risk of breast cancer among farmers' wives who never used pesticides in the Agricultural Health Study, stratified by tumor hormone receptor status

Exposure	Level	ER+				ER-				Interaction <i>p</i>
		N exposed cases (n=243) ^a	N exposed non-cases (n=13,124)	Adjusted HR ^b	95% CI	N exposed cases (n=64) ^a	N exposed non-cases (n=13,124)	Adjusted HR ^b	95% CI	
<i>Ever/never</i>										
<i>Carbamates</i>										
Aldicarb	Never	204	10,916	1		58	11,062	1		
	Ever	6	539	1.0	(0.4, 2.3)	< 5	545	-	-	-
Carbaryl	Never	88	5,648	1		32	5,704	1		
	Ever	62	2,889	0.9	(0.6, 1.4)	17	2,934	0.7	(0.3, 1.6)	0.69
Carbofuran	Never	154	9,132	1		41	9,245	1		
	Ever	56	2,397	1.3	(0.9, 1.9)	12	2,441	0.8	(0.3, 1.7)	0.24
<i>Organochlorines</i>										
Aldrin	Never	148	10,235	1		49	10,334	1		
	Ever	38	964	1.5	(0.9, 2.6)	8	994	0.9	(0.3, 2.5)	0.32
Chlordane	Never	146	9,437	1		46	9,537	1		
	Ever	30	1,049	1.1	(0.6, 1.8)	8	1,071	0.6	(0.2, 1.9)	0.40
DDT ^c	Never	149	9,337	1		41	9,445	1		
	Ever	39	1,360	0.8	(0.5, 1.4)	15	1,384	1.9	(0.7, 4.9)	0.10
Dieldrin	Never	196	11,552	1		53	11,695	1		
	Ever	11	260	1.3	(0.6, 2.7)	5	266	1.2	(0.3, 5.5)	0.93
Heptachlor	Never	166	10,561	1		47	10,680	1		
	Ever	30	771	1.4	(0.8, 2.3)	9	792	1.2	(0.4, 3.3)	0.77
Lindane	Never	171	10,017	1		47	10,141	1		
	Ever	27	793	1.1	(0.6, 1.9)	8	812	1.2	(0.4, 3.1)	0.89
Toxaphene	Never	188	10,680	1		48	10,820	1		
	Ever	16	665	1.2	(0.7, 2.3)	7	674	1.5	(0.5, 4.4)	0.79
<i>Organophosphates</i>										
Chlorpyrifos	Never	135	7,647	1		36	7,746	1		
	Ever	96	4,889	1.2	(0.8, 1.7)	25	4,960	0.8	(0.4, 1.5)	0.29
Coumaphos	Never	204	10,815	1		49	10,970	1		
	Ever	11	747	0.7	(0.3, 1.5)	< 5	754	-	-	-
Diazinon	Never	149	8,461	1		44	8,566	1		
	Ever	35	1,313	1.2	(0.7, 1.9)	6	1,342	1.1	(0.5, 2.8)	0.93
Dichlorvos	Never	192	10,813	1		48	10,957	1		
	Ever	22	921	0.9	(0.5, 1.6)	< 5	939	-	-	-
Fonofos	Never	163	9,675	1		42	9,796	1		

Malathion	Ever	54	2,153	1.4	(1.0, 2.1)	11	2,196	0.8	(0.4, 1.8)	0.25
	Never	66	3,875	1		15	3,926	1		
Parathion	Ever	84	4,017	0.7	(0.5, 1.1)	20	4,081	0.7	(0.3, 1.7)	0.98
	Never	193	10,495	1		48	10,640	1		
Phorate	Ever	8	444	1.0	(0.5, 2.1)	< 5	448	-	-	-
	Never	134	8,484	1		44	8,574	1		
Terbufos	Ever	42	1,788	0.8	(0.5, 1.3)	9	1,821	0.5	(0.2, 1.3)	0.35
	Never	132	7,684	1		37	7,779	1		
Pyrethroids	Ever	85	4,115	1.3	(0.9, 1.8)	17	4,183	0.6	(0.3, 1.2)	0.05
	Never	191	10,409	1		48	10,552	1		
Permethrin for animals	Ever	26	1,444	0.9	(0.5, 1.6)	< 5	1,466	-	-	-
	Never	195	10,205	1		50	10,350	1		
Permethrin for crops	Ever	19	1,419	0.6	(0.3, 1.3)	< 5	1,434	-	-	-
	Never	195	10,205	1		50	10,350	1		

^a Numbers of exposed and unexposed may not sum to 100% for some insecticides due to missing data.

^b Reference category is Never exposed for all analyses. Time scale is attained age, with left truncation at cohort enrollment. Adjusted for time-varying menopausal status, race (White, other), state (Iowa, North Carolina), and combined parity/age at first birth (nulliparous or all births after age 30 years; 1 birth, by age 30 years; ≥ 2 births, first of which was by age 30 years). Additionally adjusted for use of 2,4,5-T, 2,4,5-TP, trifluralin, aldicarb, and dieldrin.