

Supplementary Table 1. Cancer incidence in relation to Lifetime Days of Glyphosate Use in the Agricultural Health Study

Cancer Site*	Glyphosate Use†	N cases	RR‡	95% CI‡		p-trend‡
All Cancers	None	1,511	1.00	-	-	
	Q1	1,423	1.01	0.93	1.09	
	Q2	1,424	0.98	0.90	1.06	
	Q3	1,409	1.02	0.94	1.11	
	Q4	1,537	1.00	0.92	1.08	0.98
Oral Cavity	None	33	1.00	-	-	
	Q1	34	0.94	0.55	1.61	
	Q2	35	0.96	0.57	1.62	
	Q3	37	0.97	0.57	1.65	
	Q4	35	0.79	0.46	1.37	0.35
Colon	None	116	1.00	-	-	
	Q1	111	1.13	0.84	1.51	
	Q2	100	0.95	0.70	1.29	
	Q3	91	0.96	0.70	1.31	
	Q4	103	1.00	0.73	1.37	0.81
Rectum	None	50	1.00	-	-	
	Q1	42	0.85	0.54	1.34	
	Q2	49	0.98	0.64	1.52	
	Q3	43	0.96	0.61	1.50	
	Q4	50	0.84	0.53	1.33	0.51
Pancreas	None	25	1.00	-	-	
	Q1	46	1.93	1.13	3.27	
	Q2	31	1.39	0.78	2.47	
	Q3	27	1.18	0.64	2.16	
	Q4	27	1.11	0.60	2.05	0.26
Lung	None	144	1.00	-	-	
	Q1	130	1.04	0.80	1.36	
	Q2	133	1.10	0.84	1.45	
	Q3	143	1.22	0.93	1.60	
	Q4	139	1.12	0.84	1.48	0.58
Melanoma	None	56	1.00	-	-	
	Q1	54	0.94	0.62	1.42	
	Q2	64	1.09	0.74	1.62	
	Q3	77	1.31	0.89	1.93	
	Q4	78	1.13	0.76	1.69	0.52
Prostate	None	579	1.00	-	-	
	Q1	553	0.97	0.85	1.10	
	Q2	544	0.95	0.84	1.08	
	Q3	576	1.06	0.93	1.20	
	Q4	597	0.97	0.85	1.11	0.87
Testicular	None	7	1.00	-	-	
	T1	14	1.32	0.49	3.56	
	T2	11	0.72	0.25	2.02	
	T3	17	0.92	0.34	2.53	0.74
	Bladder	None	66	1.00	-	-
Q1		84	1.34	0.95	1.90	
Q2		81	1.20	0.84	1.71	
Q3		58	0.94	0.64	1.39	
Q4		78	1.20	0.83	1.74	0.87
Kidney	None	54	1.00	-	-	
	Q1	44	0.96	0.62	1.48	
	Q2	58	1.06	0.69	1.62	
	Q3	42	0.90	0.57	1.41	
	Q4	58	1.03	0.67	1.61	0.83
Lymphohematopoietic						

	None	161	1.00	-	-	
	Q1	126	0.87	0.63	1.23	
	Q2	138	0.87	0.71	1.22	
	Q3	129	0.92	0.69	1.22	
	Q4	153	0.95	0.72	1.26	0.74
Hodgkin Lymphoma						
	None	7	1.00	-	-	
	M1	6	0.39	0.13	1.23	
	M2	12	0.66	0.23	1.93	0.80
Non-Hodgkin Lymphoma						
	None	135	1.00	-	-	
	Q1	103	0.76	0.57	1.01	
	Q2	117	0.87	0.66	1.14	
	Q3	107	0.85	0.64	1.13	
	Q4	116	0.80	0.60	1.06	0.44
Non-Hodgkin Lymphoma B-cell						
	None	128	1.00	-	-	
	Q1	95	0.73	0.54	0.98	
	Q2	102	0.80	0.60	1.06	
	Q3	103	0.86	0.65	1.15	
	Q4	107	0.78	0.58	1.05	0.54
Chronic Lymphocytic Leukemia, Small Lymphocytic Lymphoma						
	None	36	1.00	-	-	
	Q1	24	0.59	0.33	1.08	
	Q2	26	0.74	0.42	1.29	
	Q3	28	0.89	0.52	1.54	
	Q4	29	0.85	0.49	1.48	0.75
Diffuse Large B-Cell Lymphoma						
	None	27	1.00	-	-	
	Q1	26	1.00	0.55	1.82	
	Q2	31	1.24	0.70	2.20	
	Q3	21	0.94	0.50	1.75	
	Q4	26	0.97	0.52	1.81	0.70
Marginal-zone Lymphoma						
	None	4	1.00	-	-	
	M1	5	0.32	0.07	1.52	
	M2	6	0.50	0.12	2.08	0.92
Follicular Lymphoma						
	None	16	1.00	-	-	
	T1	15	0.81	0.37	1.77	
	T2	19	0.67	0.31	1.44	
	T3	18	0.73	0.33	1.62	0.69
Multiple Myeloma						
	None	30	1.00	-	-	
	Q1	23	0.88	0.48	1.63	
	Q2	22	0.82	0.44	1.52	
	Q3	22	0.94	0.50	1.74	
	Q4	22	0.79	0.41	1.50	0.59
Non-Hodgkin Lymphoma T-Cell						
	None	2	1.00	-	-	
	M1	14	3.83	0.84	17.49	
	M2	6	1.48	0.27	8.00	0.20
Acute Myeloid Leukemia						
	None	9	1.00	-	-	
	Q1	14	1.83	0.69	4.84	
	Q2	11	1.05	0.31	3.53	
	Q3	15	2.09	0.77	5.68	
	Q4	17	2.24	0.86	5.82	0.14
Chronic Myeloid Leukemia						
	None	7	1.00	-	-	
	M1	7	0.61	0.18	2.10	
	M2	9	0.70	0.19	2.50	0.89

* Cancer sites are based and presented in order of SEER Site Recode ICD-O-3

† Quartiles: Q1:1-13.74, Q2:13.75-38.74, Q3:38.75-108.4, Q4:≥108.5

Tertiles: T1:1-19.9, T2:20-61.9, T3:≥62.0

Median: M1:1-38.74, M2:≥38.75

‡ Poisson regression was used to model rate ratios and confidence intervals, and p-values were calculated using a two-sided Wald test.

All models adjusted for age, state of recruitment, education, cigarette smoking status, alcohol per month, family history of cancer, and atrazine, alachlor, metolachlor, trifluralin, 2,4-D

Supplementary Table 2. Cancer incidence in relation to Lagged Intensity Weighted Lifetime Days of Glyphosate use in the Agricultural Health

Cancer Sites*	Glyphosate Use†	10-year lag				15-year lag					
		N cases	RR‡	95% CI‡	p-trend‡	N cases	RR‡	95% CI‡	p-trend‡		
Lymphohematopoietic											
	None	235	1.00	-	-	331	1.00	-	-		
	Q1	113	0.86	0.65	1.13	99	0.98	0.77	1.26		
	Q2	124	1.01	0.79	1.29	83	0.88	0.68	1.14		
	Q3	113	0.98	0.75	1.27	98	1.15	0.90	1.47		
	Q4	119	0.98	0.76	1.26	0.80	93	1.02	0.79	1.31	0.64
Hodgkin Lymphoma											
	None	10	1.00	-	-	15	1.00	-	-		
	M1	7	0.93	0.33	2.57	5	0.88	0.31	2.53		
	M2	8	1.14	0.38	3.40	0.91	5	0.83	0.26	2.67	0.70
Non-Hodgkin Lymphoma											
	None	197	1.00	-	-	280	1.00	-	-		
	Q1	93	0.82	0.61	1.11	80	0.91	0.69	1.19		
	Q2	104	0.98	0.76	1.27	66	0.81	0.60	1.08		
	Q3	93	0.95	0.72	1.27	75	1.01	0.77	1.33		
	Q4	88	0.83	0.62	1.10	0.37	74	0.94	0.71	1.24	0.97
Non-Hodgkin Lymphoma B-cell											
	None	181	1.00	-	-	256	1.00	-	-		
	Q1	85	0.81	0.59	1.12	74	0.92	0.69	1.22		
	Q2	97	0.98	0.75	1.29	61	0.80	0.59	1.08		
	Q3	85	0.96	0.71	1.29	71	1.03	0.78	1.38		
	Q4	84	0.87	0.64	1.16	0.61	70	0.98	0.74	1.30	0.79
Chronic Lymphocytic Leukemia, Small Lymphocytic Lymphoma											
	None	54	1.00	-	-	68	1.00	-	-		
	Q1	16	0.56	0.29	1.05	19	0.92	0.53	1.60		
	Q2	30	1.01	0.61	1.66	20	0.92	0.52	1.62		
	Q3	23	0.88	0.50	1.54	21	1.28	0.76	2.18		
	Q4	20	0.81	0.46	1.43	0.84	15	0.88	0.49	1.60	0.85
Diffuse Large B-Cell Lymphoma											
	None	44	1.00	-	-	64	1.00	-	-		
	Q1	22	0.91	0.52	1.61	20	1.05	0.61	1.80		
	Q2	21	0.88	0.50	1.56	10	0.61	0.30	1.20		
	Q3	19	0.88	0.48	1.59	16	0.90	0.49	1.65		
	Q4	24	1.06	0.61	1.85	0.49	20	1.15	0.67	1.97	0.45
Marginal-zone Lymphoma											
	None	6	1.00	-	-	7	1.00	-	-		
	M1	5	0.34	0.08	1.41	4	0.69	0.17	2.85		
	M2	4	0.43	0.11	1.68	0.57	4	0.95	0.25	3.62	0.87
Follicular Lymphoma											
	None	19	1.00	-	-	33	1.00	-	-		
	T1	23	1.90	0.97	3.74	13	0.98	0.49	1.99		
	T2	8	0.65	0.26	1.63	9	0.65	0.28	1.52		
	T3	18	1.44	0.68	3.05	0.71	13	1.08	0.53	2.20	0.78
Multiple Myeloma											
	None	42	1.00	-	-	59	1.00	-	-		
	Q1	16	0.60	0.29	1.21	13	0.68	0.35	1.34		
	Q2	28	1.27	0.75	2.14	19	1.18	0.68	2.06		
	Q3	17	0.85	0.45	1.59	14	0.97	0.53	1.79		
	Q4	15	0.64	0.33	1.24	0.17	13	0.78	0.41	1.48	0.51
Non-Hodgkin Lymphoma T-Cell											
	None	8	1.00	-	-	10	1.00	-	-		
	M1	7	0.83	0.29	2.36	7	1.27	0.47	3.44		
	M2	7	0.86	0.29	2.57	0.89	5	0.98	0.32	3.04	0.85
Acute Myeloid Leukemia											
	None	15	1.00	-	-	22	1.00	-	-		
	Q1	11	1.12	0.48	2.59	9	1.28	0.57	2.87		
	Q2	12	1.33	0.59	2.96	10	1.38	0.62	3.07		
	Q3	10	1.03	0.42	2.51	12	1.81	0.85	3.86		
	Q4	18	2.09	1.00	4.38	0.04	13	1.93	0.92	4.02	0.10
Chronic Myeloid Leukemia											
	None	8	1.00	-	-	11	1.00	-	-		
	M1	6	0.82	0.24	2.76	5	0.93	0.27	3.18		
	M2	9	1.26	0.39	4.10	0.53	7	1.55	0.50	4.82	0.39

* Cancer sites are based and presented in order of SEER Site Recode ICD-O-3

† 10-year lag Quartiles: Q1:1-425.24, Q2:425.5-1,297.9, Q3:1,298.0-3,563.9, Q4:≥3,564.0

10-year lag Tertiles: T1:1-658.74, T2:658.75-2,456.9, T3:≥2,457.0

10-year lag Median: M1:1-1297.9, M2:≥1298.0

15-year lag Quartiles: Q1:1-373.2, Q2:373.3-1,119.9, Q3:1,120-3,083.9, Q4:≥3,084.0

15-year lag Tertiles: T1:1-551.24, T2:551.25-2,159.9, T3:≥2,160.0

15-year lag Median: M1:1-1,119.9; M2:≥1,120.0

‡ Poisson regression was used to model rate ratios and confidence intervals, and p-values were calculated using a two-sided Wald test.

All models adjusted for age, state of recruitment, education, cigarette smoking status, alcohol per month, family history of cancer, and atrazine, alachlor, metolachlor, trifluralin, 2,4-D

Supplementary Table 3. Cancer incidence in relation to Lagged Lifetime Days of Glyphosate use in the Agricultural Health Study

Cancer Site*	Glyphosate Use†	5-year lag				10-year lag				15-year lag				20-year lag							
		N cases	RR‡	95% CI‡	p-trend‡	N cases	RR‡	95% CI‡	p-trend‡	N cases	RR‡	95% CI‡	p-trend‡	N cases	RR‡	95% CI‡	p-trend‡				
Lymphohematopoietic																					
	None	179	1.00	-	-	234	1.00	-	-	330	1.00	-	-	434	1.00	-	-				
	Q1	125	0.88	0.69	1.13	114	0.89	0.70	1.14	101	0.94	0.74	1.20	80	1.41	1.10	1.83				
	Q2	135	0.94	0.73	1.20	115	1.02	0.80	1.30	77	1.12	0.85	1.46	60	0.97	0.73	1.31				
	Q3	129	0.96	0.74	1.23	121	1.01	0.80	1.29	102	1.03	0.81	1.30	60	1.01	0.76	1.34				
	Q4	139	1.00	0.78	1.29	0.57	123	1.00	0.78	1.27	0.80	97	1.03	0.81	1.32	0.75	73	1.21	0.93	1.57	0.30
Hodgkin Lymphoma																					
	None	9	1.00	-	-	10	1.00	-	-	15	1.00	-	-	17	1.00	-	-				
	M1	6	0.43	0.15	1.25	6	0.79	0.28	2.24	5	0.97	0.34	2.78	4	1.57	0.50	4.87				
	M2	10	0.65	0.23	1.79	0.95	9	1.05	0.38	2.86	0.77	5	0.68	0.21	2.16	0.48	4	1.11	0.31	4.01	0.92
Non-Hodgkin Lymphoma																					
	None	149	1.00	-	-	196	1.00	-	-	279	1.00	-	-	354	1.00	-	-				
	Q1	105	0.87	0.66	1.15	93	0.85	0.65	1.12	83	0.89	0.68	1.16	71	1.52	1.16	2.00				
	Q2	113	0.93	0.71	1.22	97	1.00	0.77	1.31	59	0.99	0.73	1.33	49	0.95	0.68	1.32				
	Q3	105	0.92	0.69	1.21	100	0.97	0.75	1.26	82	0.94	0.72	1.22	48	0.97	0.71	1.33				
	Q4	106	0.88	0.66	1.17	0.58	92	0.85	0.65	1.12	0.37	75	0.91	0.69	1.20	0.62	56	1.13	0.85	1.52	0.69
Non-Hodgkin Lymphoma B-cell																					
	None	140	1.00	-	-	180	1.00	-	-	255	1.00	-	-	326	1.00	-	-				
	Q1	95	0.84	0.63	1.12	86	0.86	0.65	1.14	78	0.92	0.70	1.21	66	1.52	1.14	2.02				
	Q2	102	0.90	0.68	1.19	91	1.03	0.79	1.36	55	1.00	0.73	1.36	44	0.95	0.68	1.34				
	Q3	98	0.92	0.69	1.23	90	0.95	0.72	1.25	76	0.94	0.72	1.24	45	0.98	0.70	1.36				
	Q4	100	0.89	0.66	1.19	0.80	88	0.90	0.68	1.19	0.57	71	0.95	0.72	1.27	0.82	54	1.18	0.87	1.60	0.51
Chronic Lymphocytic Leukemia, Small Lymphocytic Lymphoma																					
	None	41	1.00	-	-	53	1.00	-	-	67	1.00	-	-	87	1.00	-	-				
	Q1	22	0.70	0.39	1.25	19	0.65	0.37	1.17	19	0.79	0.44	1.41	14	1.20	0.65	2.22				
	Q2	27	0.90	0.53	1.55	23	0.92	0.54	1.57	18	1.27	0.72	2.24	12	1.05	0.55	1.99				
	Q3	26	0.94	0.54	1.62	25	0.92	0.54	1.56	21	1.11	0.66	1.86	16	1.47	0.84	2.55				
	Q4	27	0.96	0.55	1.68	0.69	23	0.90	0.53	1.54	0.94	18	1.02	0.58	1.77	0.86	14	1.23	0.68	2.22	0.45
Diffuse Large B-Cell Lymphoma																					
	None	31	1.00	-	-	44	1.00	-	-	64	1.00	-	-	80	1.00	-	-				

Q1	27	1.11	0.63	1.96		21	0.88	0.50	1.53		19	0.97	0.57	1.66		14	1.34	0.74	2.44	
Q2	30	1.25	0.72	2.17		25	1.17	0.69	1.99		14	0.97	0.52	1.83		12	0.98	0.50	1.92	
Q3	17	0.79	0.42	1.50		17	0.76	0.42	1.39		14	0.77	0.42	1.40		11	0.96	0.49	1.87	
Q4	26	1.10	0.60	1.99	0.97	24	1.06	0.61	1.83	0.84	20	1.10	0.64	1.90	0.73	14	1.28	0.71	2.31	0.91
Marginal-zone Lymphoma																				
None	4	1.00	-	-		6	1.00	-	-		7	1.00	-	-		10	1.00	-	-	
M1	6	0.51	0.12	2.12		5	0.40	0.10	1.65		4	0.84	0.20	3.49		2	0.84	0.17	4.09	
M2	5	0.53	0.12	2.23	0.67	4	0.42	0.11	1.63	0.42	4	0.85	0.22	3.25	0.86	3	1.06	0.26	4.23	0.91
Follicular Lymphoma																				
None	16	1.00	-	-		19	1.00	-	-		33	1.00	-	-		41	1.00	-	-	
T1	15	0.92	0.42	2.01		17	1.53	0.75	3.13		9	0.76	0.34	1.67		12	1.52	0.73	3.20	
T2	20	1.00	0.47	2.13		14	1.19	0.55	2.61		13	1.07	0.52	2.19		7	0.92	0.38	2.21	
T3	17	0.94	0.42	2.07	0.92	18	1.31	0.62	2.77	0.79	13	0.90	0.44	1.87	0.89	8	0.96	0.42	2.21	0.79
Multiple Myeloma																				
None	33	1.00	-	-		42	1.00	-	-		59	1.00	-	-		73	1.00	-	-	
Q1	21	0.80	0.43	1.48		19	0.83	0.46	1.50		18	0.92	0.52	1.63		17	1.80	1.03	3.15	
Q2	22	0.84	0.46	1.54		23	1.11	0.63	1.94		12	1.03	0.54	1.95		9	0.85	0.40	1.78	
Q3	24	1.06	0.59	1.90		19	0.94	0.52	1.68		17	0.93	0.52	1.66		11	1.13	0.59	2.18	
Q4	19	0.75	0.39	1.44	0.55	16	0.69	0.36	1.31	0.25	13	0.78	0.41	1.47	0.43	9	0.86	0.42	1.75	0.52
Non-Hodgkin Lymphoma T-Cell																				
None	4	1.00	-	-		8	1.00	-	-		10	1.00	-	-		12	1.00	-	-	
M1	12	1.91	0.59	6.18		6	0.76	0.26	2.27		5	1.04	0.35	3.13		7	2.49	0.95	6.57	
M2	6	0.91	0.23	3.51	0.28	8	0.92	0.32	2.66	0.94	7	1.22	0.44	3.43	0.69	3	0.96	0.26	3.55	0.75
Acute Myeloid Leukemia																				
None	10	1.00	-	-		15	1.00	-	-		22	1.00	-	-		34	1.00	-	-	
Q1/T1	13	1.61	0.69	3.72		12	1.24	0.56	2.73		8	0.93	0.39	2.21		9	1.45	0.68	3.07	
Q2/T2	11	0.99	0.38	2.57		9	0.90	0.36	2.23		11	2.06	0.95	4.45		7	0.91	0.38	2.21	
Q3/T3	16	2.11	0.92	4.85		13	1.58	0.73	3.42		11	1.58	0.74	3.35		16	2.30	1.22	4.33	-
Q4	16	2.13	0.91	4.97	0.10	17	2.05	0.97	4.32	0.04	14	2.18	1.06	4.46	0.05	-	-	-	-	
Chronic Myeloid Leukemia																				
None	8	1.00	-	-		8	1.00	-	-		11	1.00	-	-		16	1.00	-	-	
M1	6	0.50	0.15	1.72		8	1.15	0.37	3.54		5	1.01	0.30	3.46		4	0.89	0.25	3.20	
M2	9	0.73	0.22	2.45	0.92	7	0.82	0.23	2.92	0.63	7	1.40	0.45	4.32	0.53	3	0.56	0.12	2.59	0.43

* Cancer sites are based and presented in order of SEER Site Recode ICD-O-3

† 5-year lag Quartiles: Q1:1-11.9, Q2:12.0-35.9, Q3:36.0-105.9, Q4:≥106.0

5-year lag Tertiles: T1:1-19.9, T2:20.0-58.74, T3:≥58.75

5-year lag Median: M1:1-35.9, M2:≥36.0

10-year lag Quartiles: Q1:1-8.9, Q2:9.0-27.9, Q3:28.0-86.9, Q4:≥87.0

10-year lag Tertiles: T1:1-16.74, T2:16.75-55.9, T3:≥56.0

10-year lag Median: M1:1-27.9, M2:≥28.0

15-year lag Quartiles: Q1:1-8.9, Q2:9.0-24.4, Q3:24.5-73.4, Q4:≥73.5

15-year lag Tertiles: T1:1-13.9, T2:14.0-50.74, T3:≥50.75

15-year lag Median: M1:1-24.4, M2:≥24.5

20-year lag Quartiles: Q1:1-8.74, Q2:8.75-21.24, Q3:21.25-59.4, Q4:≥59.5

20-year lag Tertiles: T1:1-9.9, T2:10.0-41.9, T3:≥42.0

20-year lag Median: M1:1-21.24, M2:≥21.25

‡ Poisson regression was used to model rate ratios and confidence intervals, and p-values were calculated using a two-sided Wald test.

All models are adjusted for age, state of recruitment, education, cigarette smoking status, alcohol per month, family history of cancer, and atrazine, alachlor, metolachlor, trifluralin, 2,4-D