Supplemental Material

Glyphosate Use and Mosaic Loss of Chromosome Y among Male Farmers in the Agricultural Health Study

Vicky C. Chang, Weiyin Zhou, Sonja I. Berndt, Gabriella Andreotti, Meredith Yeager, Christine G. Parks, Dale P. Sandler, Nathaniel Rothman, Laura E. Beane Freeman, Mitchell J. Machiela, and Jonathan N. Hofmann

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Table S9. Associations between lifetime occupational glyphosate use and overall or expanded mLOY in models additionally adjusted for alcohol consumption at AHS enrollment among male farmers in the BEEA study.

Table S1. Age-specific prevalence of mosaic loss of chromosome Y among male farmers in the BEEA study, overall and by cellular fraction.

Age group (y)	N_{total}	All mLOY		mLOY, CF <10%		mLOY, CF ≥10%	
		n	Prevalence (%)	n	Prevalence (%)	n	Prevalence (%)
50–54	235	7	3.0	6	2.6	1	0.4
55–59	286	17	5.9	12	4.2	5	1.7
60–64	299	49	16.4	35	11.7	14	4.7
65–69	269	64	23.8	37	13.8	27	10.0
70–74	228	79	34.6	44	19.3	35	15.4
75–79	182	69	37.9	32	17.6	37	20.3
80–84	73	39	53.4	15	20.5	24	32.9
≥85	34	19	55.9	4	11.8	15	44.1
Total	1,606	343	21.4	185	11.5	158	9.8

Note: BEEA, Biomarkers of Exposure and Effect in Agriculture; CF, cellular fraction; mLOY, mosaic loss of chromosome Y. This table provides numerical data corresponding to Figure 1.

Table S2. Multivariable adjusted associations between participant characteristics and overall or expanded mLOY among male farmers in the BEEA study.

Characteristic	N_{total}	Overall mLOY			Expanded mLOY		
		n_{no}	n_{yes}	OR (95% CI)[a]	n_{no}	n_{yes}	OR (95% CI)[b]
Age, per 1-year increase[c]	1,606	1,263	343	1.12 (1.10, 1.14)	1,448	158	1.13 (1.10, 1.16)
State							
Iowa	1,237	984	253	1.00 (Ref)	1,125	112	1.00 (Ref)
North Carolina	369	279	90	0.93 (0.67, 1.29)	323	46	1.03 (0.67, 1.58)
Source of DNA							
Whole blood	1,500	1,178	322	1.00 (Ref)	1,352	148	1.00 (Ref)
Buffy coat	106	85	21	1.52 (0.86, 2.66)	96	10	1.78 (0.83, 3.82)
Smoking status[d]							
Never	950	770	180	1.00 (Ref)	868	82	1.00 (Ref)
Former	583	443	140	0.90 (0.67, 1.19)	519	64	0.82 (0.55, 1.20)
Current	73	50	23	3.22 (1.74, 5.96)	61	12	3.13 (1.42, 6.87)
Smoking status and pack-years							
Never	950	770	180	1.00 (Ref)	868	82	1.00 (Ref)
Former, tertile 1 (≤3.75)	187	155	32	0.63 (0.40, 0.98)	172	15	0.65 (0.35, 1.20)
Former, tertile 2 (>3.75–23.0)	188	147	41	0.75 (0.49, 1.14)	167	21	0.82 (0.47, 1.41)
Former, tertile 3 (>23.0)	186	126	60	1.39 (0.93, 2.06)	161	25	0.96 (0.56, 1.65)
Current, tertile 1 (≤28.5)	24	17	7	3.46 (1.18, 10.11)	20	4	4.05 (1.03, 15.96)
Current, tertile 2 (>28.5–53.25)	23	16	7	4.51 (1.63, 12.49)	19	4	6.71 (1.84, 24.43)
Current, tertile 3 (>53.25)	23	16	7	2.11 (0.77, 5.83)	20	3	1.46 (0.37, 5.76)
Missing	25	16	9	1.45 (0.57, 3.68)	21	4	0.87 (0.27, 2.82)
Alcohol consumption (servings/wk)							
0	798	609	189	1.00 (Ref)	702	96	1.00 (Ref)
1–2	292	228	64	1.04 (0.72, 1.48)	266	26	0.86 (0.52, 1.43)
3–6	247	200	47	1.09 (0.73, 1.63)	228	19	1.00 (0.56, 1.76)
≥7	269	226	43	0.93 (0.61, 1.42)	252	17	0.85 (0.46, 1.56)
BMI (kg/m^2)							
<25	252	178	74	1.00 (Ref)	210	42	1.00 (Ref)
25 to <30	716	567	149	0.88 (0.61, 1.27)	657	59	0.64 (0.40, 1.02)
30 to <35	441	353	88	0.96 (0.63, 1.45)	394	47	1.03 (0.61, 1.74)
≥35	197	165	32	0.88 (0.52, 1.49)	187	10	0.52 (0.24, 1.14)
History of diabetes							
No	1,369	1,088	281	1.00 (Ref)	1,247	122	1.00 (Ref)
Yes	237	175	62	1.09 (0.76, 1.56)	201	36	1.50 (0.95, 2.35)
History of hypertension/heart disease							
No	763	621	142	1.00 (Ref)	707	56	1.00 (Ref)
Yes	843	642	201	0.74 (0.56, 0.99)	741	102	0.94 (0.63, 1.39)

Note: BEEA, Biomarkers of Exposure and Effect in Agriculture; BMI, body mass index; CI, confidence interval; mLOY, mosaic loss of chromosome Y; OR, odds ratio; Ref, reference.

[a]Estimated from logistic regression modeling the odds of any detectable mLOY (yes vs. no), adjusted for age (years; continuous), age^2, and simultaneously for all other variables presented (when adjusting for smoking, the combined smoking status and pack-years variable was used). $p < 0.001$ for both age and age^2.

[b]Estimated from logistic regression modeling the odds of expanded mLOY [yes (cellular fraction ≥10%) vs. no (cellular fraction <10% or no mLOY)], adjusted for age (years; continuous), age^2, and simultaneously for all other variables presented (when adjusting for smoking, the combined smoking status and pack-years variable was used). $p = 0.001$ and 0.01 for age and age^2, respectively.

[c]Not adjusted for age^2.

[d]Not adjusted for pack-years of smoking.

Table S3. Associations between lifetime occupational glyphosate use and overall or expanded mLOY in minimally adjusted models among male farmers in the BEEA study.

Glyphosate use	N_{total}	Overall mLOY[a]			Expanded mLOY[b]		
		n_{no}	n_{yes}	OR (95% CI)[c]	n_{no}	n_{yes}	OR (95% CI)[c]
Total lifetime days							
Quartile 1 (0–26)	402	300	102	1.00 (Ref)	351	51	1.00 (Ref)
Quartile 2 (>26–76)	402	306	96	1.15 (0.81, 1.63)	363	39	0.93 (0.58, 1.51)
Quartile 3 (>76–161)	403	327	76	1.14 (0.79, 1.66)	371	32	1.13 (0.68, 1.88)
Quartile 4 (>161–3,063)	399	330	69	1.10 (0.75, 1.62)	363	36	1.43 (0.86, 2.37)
				$p_{trend}{}^{d} = 0.78$			$p_{trend}{}^{d} = 0.11$
Intensity-weighted lifetime days							
Quartile 1 (0–1,341)	401	303	98	1.00 (Ref)	352	49	1.00 (Ref)
Quartile 2 (>1,341–3,885)	400	301	99	1.37 (0.96, 1.95)	358	42	1.19 (0.74, 1.91)
Quartile 3 (>3,885–9,341)	401	327	74	1.09 (0.75, 1.59)	372	29	0.92 (0.55, 1.56)
Quartile 4 (>9,341–244,237)	400	328	72	1.16 (0.79, 1.70)	362	38	1.50 (0.91, 2.48)
				$p_{trend}{}^{d} = 0.85$			$p_{trend}{}^{d} = 0.14$

Note: BEEA, Biomarkers of Exposure and Effect in Agriculture; BMI, body mass index; CI, confidence interval; mLOY, mosaic loss of chromosome Y; OR, odds ratio; Ref, reference.

[a]Any detectable mLOY (yes vs. no).

[b]mLOY affecting ≥10% of cells [yes vs. no (cellular fraction <10% or no mLOY)].

[c]Calculated using a logistic regression model adjusted for age (years; continuous), age^2, state of residence (Iowa, North Carolina), source of DNA (whole blood, buffy coat), smoking status and pack-years (never, former/tertile 1, former/tertile 2, former/tertile 3, current/tertile 1, current/tertile 2, current/tertile 3, missing), and BMI (<25, 25 to <30, 30 to <35, ≥35 kg/m^2).

[d]Calculated by modeling quartile-specific median values of total lifetime days or intensity-weighted lifetime days of glyphosate use as a continuous variable.

Table S4. Associations between lifetime occupational glyphosate use and mLOY according to cellular fraction (vs. no mLOY) among male farmers in the BEEA study.

Glyphosate use	$n_{\text{no mLOY}}$	mLOY, CF <10%		mLOY, CF ≥10%	
		n	OR (95% CI)[a]	n	OR (95% CI)[a]
Total lifetime days					
Quartile 1 (0–26)	300	51	1.00 (Ref)	51	1.00 (Ref)
Quartile 2 (>26–76)	306	47	1.30 (0.84, 2.02)	39	1.13 (0.68, 1.88)
Quartile 3 (>76–161)	327	44	1.20 (0.75, 1.94)	32	1.29 (0.75, 2.21)
Quartile 4 (>161–3,063)	330	33	0.96 (0.56, 1.66)	36	1.72 (0.96, 3.07)
			$p_{\text{trend}}{}^{b} = 0.59$		$p_{\text{trend}}{}^{b} = 0.06$
Intensity-weighted lifetime days					
Quartile 1 (0–1,341)	303	49	1.00 (Ref)	49	1.00 (Ref)
Quartile 2 (>1,341–3,885)	301	57	1.48 (0.94, 2.33)	42	1.47 (0.88, 2.47)
Quartile 3 (>3,885–9,341)	327	45	1.28 (0.79, 2.08)	29	1.19 (0.68, 2.09)
Quartile 4 (>9,341–244,237)	328	34	1.05 (0.61, 1.81)	38	1.76 (0.99, 3.15)
			$p_{\text{trend}}{}^{b} = 0.65$		$p_{\text{trend}}{}^{b} = 0.11$

Note: BEEA, Biomarkers of Exposure and Effect in Agriculture; BMI, body mass index; CF, cellular fraction; CI, confidence interval; mLOY, mosaic loss of chromosome Y; OR, odds ratio; Ref, reference.

[a]Calculated using a logistic regression model adjusted for age (years; continuous), age^2, state of residence (Iowa, North Carolina), source of DNA (whole blood, buffy coat), smoking status and pack-years (never, former/tertile 1, former/tertile 2, former/tertile 3, current/tertile 1, current/tertile 2, current/tertile 3, missing), alcohol consumption (0, 1–2, 3–6, ≥7 servings in the past 7 d), BMI (<25, 25 to <30, 30 to <35, ≥35 kg/m^2), history of diabetes (no, yes), history of hypertension/heart disease (no, yes), and lifetime occupational use of 2,4-dichlorophenoxyacetic acid (quartiles of total lifetime days or intensity-weighted lifetime days, missing as a separate category).

[b]Calculated by modeling quartile-specific median values of total lifetime days or intensity-weighted lifetime days of glyphosate use as a continuous variable.

Table S5. Associations between intensity-weighted lifetime days of occupational glyphosate use and expanded mLOY (cellular fraction ≥10%) among male farmers in the BEEA study, stratified by age group, smoking status, BMI, or state of residence.

| Subgroup | Intensity-weighted lifetime days of glyphosate use | | | | p_{trend}[a] | $p_{interaction}$[b] |
	Quartile 1	Quartile 2	Quartile 3	Quartile 4		
Age group						
<70 y						
No. of cases/total	11/223	14/266	8/292	14/305		
OR (95% CI)[c]	1.00 (Ref)	1.45 (0.59, 3.55)	0.87 (0.32, 2.36)	1.53 (0.59, 3.98)	0.50	0.64
≥70 y						
No. of cases/total	38/178	28/134	21/109	24/95		
OR (95% CI)[c]	1.00 (Ref)	1.29 (0.70, 2.37)	1.25 (0.64, 2.45)	2.04 (1.00, 4.15)	0.06	
Smoking status						
Never smokers						
No. of cases/total	22/232	20/243	20/240	20/232		
OR (95% CI)[c]	1.00 (Ref)	1.22 (0.59, 2.54)	1.75 (0.83, 3.72)	2.18 (0.98, 4.83)	0.049	0.23
Ever smokers						
No. of cases/total	27/169	22/157	9/161	18/168		
OR (95% CI)[c]	1.00 (Ref)	1.28 (0.64, 2.57)	0.49 (0.21, 1.18)	1.42 (0.62, 3.25)	0.60	
BMI						
<30 kg/m^2 (non-obese)						
No. of cases/total	29/252	28/247	18/222	26/245		
OR (95% CI)[c]	1.00 (Ref)	1.44 (0.76, 2.71)	1.24 (0.60, 2.56)	2.12 (1.02, 4.38)	0.06	0.18
≥30 kg/m^2 (obese)						
No. of cases/total	20/149	14/153	11/179	12/155		
OR (95% CI)[c]	1.00 (Ref)	1.06 (0.46, 2.42)	0.76 (0.32, 1.82)	1.13 (0.45, 2.85)	0.85	
State of residence						
Iowa						
No. of cases/total	39/320	30/316	19/313	24/284		
OR (95% CI)[c]	1.00 (Ref)	1.24 (0.70, 2.23)	1.00 (0.52, 1.92)	1.75 (0.89, 3.44)	0.14	0.99
North Carolina						
No. of cases/total	10/81	12/84	10/88	14/116		
OR (95% CI)[c]	1.00 (Ref)	1.10 (0.38, 3.23)	1.30 (0.41, 4.11)	1.82 (0.58, 5.71)	0.25	

Note: BEEA, Biomarkers of Exposure and Effect in Agriculture; BMI, body mass index; CI, confidence interval; mLOY, mosaic loss of chromosome Y; OR, odds ratio; Ref, reference.

[a]Calculated by modeling quartile-specific median values of intensity-weighted lifetime days of glyphosate use as a continuous variable.

[b]Calculated using likelihood-ratio test comparing models with and without a multiplicative interaction term between intensity-weighted lifetime days of glyphosate use (quartile-specific medians) and age group, smoking status, BMI, or state of residence.

[c]Calculated using a logistic regression model adjusted for age (years; continuous), age^2, state of residence (Iowa, North Carolina), source of DNA (whole blood, buffy coat), smoking status and pack-years (never, former/tertile 1, former/tertile 2, former/tertile 3, current/tertile 1, current/tertile 2, current/tertile 3, missing), alcohol consumption (0, 1–2, 3–6, ≥7 servings in the past 7 d), BMI (<25, 25 to <30, 30 to <35, ≥35 kg/m^2), history of diabetes (no, yes), history of hypertension/heart disease (no, yes), and lifetime occupational use of 2,4-dichlorophenoxyacetic acid (quartiles of intensity-weighted lifetime days, missing as a separate category).

Table S6. Associations between lifetime occupational glyphosate use and overall or expanded mLOY among male farmers of European ancestry in the BEEA study.

Glyphosate use	N_{total}	Overall mLOY[a]			Expanded mLOY[b]		
		n_{no}	n_{yes}	OR (95% CI)[c]	n_{no}	n_{yes}	OR (95% CI)[c]
Total lifetime days							
Quartile 1 (0–26)	396	294	102	1.00 (Ref)	345	51	1.00 (Ref)
Quartile 2 (>26–76)	399	303	96	1.21 (0.85, 1.73)	360	39	1.02 (0.63, 1.66)
Quartile 3 (>76–161)	401	327	74	1.16 (0.79, 1.71)	369	32	1.22 (0.72, 2.07)
Quartile 4 (>161–3,063)	397	328	69	1.21 (0.79, 1.86)	361	36	1.72 (0.98, 3.02)
				p_{trend}[d] = 0.53			p_{trend}[d] = 0.04
Intensity-weighted lifetime days							
Quartile 1 (0–1,341)	395	297	98	1.00 (Ref)	346	49	1.00 (Ref)
Quartile 2 (>1,341–3,885)	399	300	99	1.44 (1.00, 2.08)	357	42	1.30 (0.80, 2.13)
Quartile 3 (>3,885–9,341)	398	325	73	1.15 (0.77, 1.71)	369	29	1.02 (0.59, 1.76)
Quartile 4 (>9,341–244,237)	397	326	71	1.26 (0.82, 1.93)	359	38	1.75 (1.00, 3.06)
				p_{trend}[d] = 0.68			p_{trend}[d] = 0.08

Note: BEEA, Biomarkers of Exposure and Effect in Agriculture; BMI, body mass index; CI, confidence interval; mLOY, mosaic loss of chromosome Y; OR, odds ratio; Ref, reference.

[a]Any detectable mLOY (yes vs. no).

[b]mLOY affecting ≥10% of cells [yes vs. no (cellular fraction <10% or no mLOY)].

[c]Calculated using a logistic regression model adjusted for age (years; continuous), age^2, state of residence (Iowa, North Carolina), source of DNA (whole blood, buffy coat), smoking status and pack-years (never, former/tertile 1, former/tertile 2, former/tertile 3, current/tertile 1, current/tertile 2, current/tertile 3, missing), alcohol consumption (0, 1–2, 3–6, ≥7 servings in the past 7 d), BMI (<25, 25 to <30, 30 to <35, ≥35 kg/m^2), history of diabetes (no, yes), history of hypertension/heart disease (no, yes), and lifetime occupational use of 2,4-dichlorophenoxyacetic acid (quartiles of total lifetime days or intensity-weighted lifetime days, missing as a separate category).

[d]Calculated by modeling quartile-specific median values of total lifetime days or intensity-weighted lifetime days of glyphosate use as a continuous variable.

Table S7. Associations between lifetime occupational glyphosate use and overall or expanded mLOY among male farmers whose DNA was extracted from whole blood samples in the BEEA study.

Glyphosate use	N_{total}	Overall mLOY[a]			Expanded mLOY[b]		
		n_{no}	n_{yes}	OR (95% CI)[c]	n_{no}	n_{yes}	OR (95% CI)[c]
Total lifetime days							
Quartile 1 (0–26)	375	280	95	1.00 (Ref)	328	47	1.00 (Ref)
Quartile 2 (>26–76)	378	288	90	1.24 (0.86, 1.80)	341	37	1.05 (0.63, 1.74)
Quartile 3 (>76–161)	376	304	72	1.25 (0.84, 1.87)	346	30	1.23 (0.71, 2.12)
Quartile 4 (>161–3,063)	371	306	65	1.30 (0.84, 2.01)	337	34	1.82 (1.02, 3.26)
				p_{trend}[d] = 0.36			p_{trend}[d] = 0.03
Intensity-weighted lifetime days							
Quartile 1 (0–1,341)	375	282	93	1.00 (Ref)	330	45	1.00 (Ref)
Quartile 2 (>1,341–3,885)	380	287	93	1.45 (0.99, 2.11)	339	41	1.42 (0.86, 2.36)
Quartile 3 (>3,885–9,341)	377	307	70	1.21 (0.81, 1.81)	351	26	1.01 (0.57, 1.79)
Quartile 4 (>9,341–244,237)	365	299	66	1.29 (0.83, 2.00)	329	36	1.88 (1.05, 3.35)
				p_{trend}[d] = 0.61			p_{trend}[d] = 0.06

Note: BEEA, Biomarkers of Exposure and Effect in Agriculture; BMI, body mass index; CI, confidence interval; mLOY, mosaic loss of chromosome Y; OR, odds ratio; Ref, reference.

[a]Any detectable mLOY (yes vs. no).

[b]mLOY affecting ≥10% of cells [yes vs. no (cellular fraction <10% or no mLOY)].

[c]Calculated using a logistic regression model adjusted for age (years; continuous), age^2, state of residence (Iowa, North Carolina), smoking status and pack-years (never, former/tertile 1, former/tertile 2, former/tertile 3, current/tertile 1, current/tertile 2, current/tertile 3, missing), alcohol consumption (0, 1–2, 3–6, ≥7 servings in the past 7 d), BMI (<25, 25 to <30, 30 to <35, ≥35 kg/m^2), history of diabetes (no, yes), history of hypertension/heart disease (no, yes), and lifetime occupational use of 2,4-dichlorophenoxyacetic acid (quartiles of total lifetime days or intensity-weighted lifetime days, missing as a separate category).

[d]Calculated by modeling quartile-specific median values of total lifetime days or intensity-weighted lifetime days of glyphosate use as a continuous variable.

Table S8. Associations between lifetime occupational glyphosate use and overall or expanded mLOY in models additionally adjusted for year of blood sample collection among male farmers in the BEEA study.

Glyphosate use	N_{total}	Overall mLOY[a]			Expanded mLOY[b]		
		n_{no}	n_{yes}	OR (95% CI)[c]	n_{no}	n_{yes}	OR (95% CI)[c]
Total lifetime days							
Quartile 1 (0–26)	402	300	102	1.00 (Ref)	351	51	1.00 (Ref)
Quartile 2 (>26–76)	402	306	96	1.25 (0.87, 1.80)	363	39	1.05 (0.64, 1.73)
Quartile 3 (>76–161)	403	327	76	1.27 (0.86, 1.87)	371	32	1.27 (0.74, 2.16)
Quartile 4 (>161–3,063)	399	330	69	1.31 (0.85, 2.01)	363	36	1.79 (1.01, 3.17)
				$p_{trend}{}^{d} = 0.35$			$p_{trend}{}^{d} = 0.03$
Intensity-weighted lifetime days							
Quartile 1 (0–1,341)	401	303	98	1.00 (Ref)	352	49	1.00 (Ref)
Quartile 2 (>1,341–3,885)	400	301	99	1.49 (1.03, 2.15)	358	42	1.33 (0.81, 2.18)
Quartile 3 (>3,885–9,341)	401	327	74	1.23 (0.83, 1.83)	372	29	1.06 (0.61, 1.84)
Quartile 4 (>9,341–244,237)	400	328	72	1.39 (0.90, 2.14)	362	38	1.81 (1.02, 3.21)
				$p_{trend}{}^{d} = 0.40$			$p_{trend}{}^{d} = 0.07$

Note: BEEA, Biomarkers of Exposure and Effect in Agriculture; BMI, body mass index; CI, confidence interval; mLOY, mosaic loss of chromosome Y; OR, odds ratio; Ref, reference.

[a]Any detectable mLOY (yes vs. no).

[b]mLOY affecting ≥10% of cells [yes vs. no (cellular fraction <10% or no mLOY)].

[c]Calculated using a logistic regression model adjusted for age (years; continuous), age^2, state of residence (Iowa, North Carolina), source of DNA (whole blood, buffy coat), smoking status and pack-years (never, former/tertile 1, former/tertile 2, former/tertile 3, current/tertile 1, current/tertile 2, current/tertile 3, missing), alcohol consumption (0, 1–2, 3–6, ≥7 servings in the past 7 d), BMI (<25, 25 to <30, 30 to <35, ≥35 kg/m^2), history of diabetes (no, yes), history of hypertension/heart disease (no, yes), lifetime occupational use of 2,4-dichlorophenoxyacetic acid (quartiles of total lifetime days or intensity-weighted lifetime days, missing as a separate category), and year of blood sample collection (2010 to 2017).

[d]Calculated by modeling quartile-specific median values of total lifetime days or intensity-weighted lifetime days of glyphosate use as a continuous variable.

Table S9. Associations between lifetime occupational glyphosate use and overall or expanded mLOY in models additionally adjusted for alcohol consumption at AHS enrollment among male farmers in the BEEA study.

Glyphosate use	N_{total}	Overall mLOY[a]			Expanded mLOY[b]		
		n_{no}	n_{yes}	OR (95% CI)[c]	n_{no}	n_{yes}	OR (95% CI)[c]
Total lifetime days							
Quartile 1 (0–26)	402	300	102	1.00 (Ref)	351	51	1.00 (Ref)
Quartile 2 (>26–76)	402	306	96	1.21 (0.84, 1.73)	363	39	1.00 (0.61, 1.64)
Quartile 3 (>76–161)	403	327	76	1.22 (0.83, 1.79)	371	32	1.25 (0.74, 2.12)
Quartile 4 (>161–3,063)	399	330	69	1.24 (0.81, 1.90)	363	36	1.74 (0.99, 3.07)
				p_{trend}[d] = 0.46			p_{trend}[d] = 0.03
Intensity-weighted lifetime days							
Quartile 1 (0–1,341)	401	303	98	1.00 (Ref)	352	49	1.00 (Ref)
Quartile 2 (>1,341–3,885)	400	301	99	1.45 (1.00, 2.09)	358	42	1.29 (0.79, 2.12)
Quartile 3 (>3,885–9,341)	401	327	74	1.18 (0.79, 1.75)	372	29	1.04 (0.60, 1.81)
Quartile 4 (>9,341–244,237)	400	328	72	1.28 (0.84, 1.96)	362	38	1.75 (0.99, 3.07)
				p_{trend}[d] = 0.62			p_{trend}[d] = 0.07

Note: AHS, Agricultural Health Study; BEEA, Biomarkers of Exposure and Effect in Agriculture; BMI, body mass index; CI, confidence interval; mLOY, mosaic loss of chromosome Y; OR, odds ratio; Ref, reference.

[a]Any detectable mLOY (yes vs. no).

[b]mLOY affecting ≥10% of cells [yes vs. no (cellular fraction <10% or no mLOY)].

[c]Calculated using a logistic regression model adjusted for age (years; continuous), age^2, state of residence (Iowa, North Carolina), source of DNA (whole blood, buffy coat), smoking status and pack-years (never, former/tertile 1, former/tertile 2, former/tertile 3, current/tertile 1, current/tertile 2, current/tertile 3, missing), recent alcohol consumption (0, 1–2, 3–6, ≥7 servings in the past 7 d), past-year alcohol consumption at AHS enrollment in 1993–1997 (0, <3, 3 to <7, ≥7 drinks/wk, missing), BMI (<25, 25 to <30, 30 to <35, ≥35 kg/m^2), history of diabetes (no, yes), history of hypertension/heart disease (no, yes), and lifetime occupational use of 2,4-dichlorophenoxyacetic acid (quartiles of total lifetime days or intensity-weighted lifetime days, missing as a separate category).

[d]Calculated by modeling quartile-specific median values of total lifetime days or intensity-weighted lifetime days of glyphosate use as a continuous variable.