

Genotoxicity Assays Considered in Core Tables by IARC But Not EPA, and By EPA But Not IARC*

Compound Tested	Assays Considered by IARC and Not by EPA		Assays Considered by EPA and Not by IARC	
	Number	Number Positive	Number	Number Positive
GENOTOX ASSAY TYPE				
Bacterial Reverse Mutation				
Glyphosate	0	0	25	0
Formulated GBHs	0	0	29	0
<i>In Vitro</i> and <i>In Vivo</i> Mammalian Gene Mutation				
Glyphosate	2	1	4	0
Formulated GBHs	1	1	0	0
<i>In Vitro</i> Chromosomal Aberration				
Glyphosate	1	0	5	1
AMPA	1	1	0	0
Formulated GBHs	0	0	1	0
<i>In Vitro</i> Micronuclei Induction in Mammalian Cells				
Glyphosate	0	0	3	1
<i>In Vivo</i> Chromosomal Aberration				
Glyphosate	2	2	5	0
Formulated GBHs	3	2	1	1
<i>In Vivo</i> Micronuclei Induction in Cells				
Glyphosate	2	1	15	1
AMPA	1	1	0	0
Formulated GBHs	8	7	16	0
Primary DNA Damage				
Glyphosate	14	12	4	2
AMPA	3	3	0	0
Formulated GBHs	29	24	1	1
Totals All Categories	67	55	109	7
Percent Positive	82%		6%	
Totals Glyphosate Technical	21	16	61	5
Percent Positive	76%		8%	
Totals AMPA	5	5	0	0
Percent Positive	100%		0%	
Totals Formulated GBHs	41	34	48	2
Percent Positive	83%		4%	
Number Regulatory	0	0	95	1
Percent Positive	0%		1%	
Number Public Literature	67	55	14	6
Percent Positive	82%		43%	

*IARC totals are from the detailed accounting of all studies considered by the IARC Working Group in the glyphosate section of Monograph 112 (IARC, 2017). Information on the studies are taken from Tables 4.1-4.6.

EPA data is from the September 12, 2016 "Glyphosate Issue Paper: Evaluation of Carcinogenic Potential." (EPA 2016) All studies cited in this EPA document in Table 5.1-5.7, including in its Appendix F (Tables F.1-F.5) which contains studies on formulated glyphosate-based herbicides, were cross-checked against the studies cited by IARC.

For complete analysis, see January 2019 paper by Charles Benbrook in *Environmental Sciences Europe* : "How Did the U.S. EPA and IARC Reach Diametrically Opposed Conclusions on the Genotoxicity of Glyphosate-based Herbicides?"