

Eating Out: A Date With Glyphosate

Tests show glyphosate is prevalent in restaurant food

Introduction

GMO Free USA's mission is to educate consumers and other stakeholders about the potential hazards of genetically engineered organisms and synthetic pesticides, and to advance the application of the Precautionary Principle. GMO Free USA relies on independent science and agroecological concepts to advocate for clean and healthy food and ecological systems. Peer reviewed studies have provided mounting evidence of the toxicity of synthetic pesticides, even at very low levels. There is growing concern about the long-term and multigenerational effects of these pesticides on our health and our ecosystems. GMO Free USA believes that food producers and restaurants should be transparent about and held accountable for the toxins in their products. Consumers have a right to know what they're eating.

Why Restaurant Food?

On average, Americans eat out 5.9 times a week.¹ Sometimes it's a necessity because people don't have enough time to cook, but often it's because eating out is a fun way to socialize or to spend good quality family time. Three-fifths of consumers believe that restaurants can offer food that is both healthful and tasty.² Are we putting our trust in the marketing campaigns of corporations?

Methodology

Food samples were purchased from 15 restaurant chains in Texas, Connecticut, Washington DC and New York. These samples were

“This study found that conventional (non-organic) menu items such as oat-based and whole grain breads, bagels, cookies and pasta are foods at risk for the highest levels of glyphosate contamination.”

sent to accredited laboratories to test for glyphosate residue and in most cases for aminomethylphosphonic acid (AMPA), a breakdown product of glyphosate. Foods were selected from casual and fast casual restaurant chains that purport to provide clean or natural foods, as well as fast food restaurants serving a wide range of food options. In total, 44 samples from 38 different menu items were tested. Food testing was performed by ISO accredited laboratories using Liquid chromatography–mass spectrometry (LC-MS/MS). Menu items that were likely to contain glyphosate were selected for testing, as well as additional items that are not known to be at high risk of glyphosate contamination. HRI Labs performed the majority of the glyphosate testing. A number of additional tests were performed by Environmental Micro Analysis, Inc. (EMA Labs) and AGQ Labs.



The Surprising Truth about Oats and Other Whole Grains

Notably, the highest levels of glyphosate were detected in “Whole Grain” or “Multigrain” foods, which consumers typically seek out and perceive as a healthier choice.³ This study found that conventional (non-organic) menu items such as oat-based and whole grain breads, bagels, cookies and pasta are foods at risk for the highest levels of glyphosate contamination.

Marketing Terms “Natural,” “Clean Food” and “Superior Quality” Are Misleading

Restaurant dining trends indicate that consumers seek out and are willing to pay more for menu items marked as “natural.” A National Restaurant Association survey of 700 chefs entitled “Top 10 Concept Trends of 2018” ranked “natural ingredients/clean menus” as one of the top three consumer dining trends.⁴ Restaurateurs are aware that the general public is increasingly seeking out healthy foods that are free from unnatural ingredients and synthetic chemicals. Many restaurant chains are using these terms to exploit consumers.

For instance, the highest level of all 44 samples tested was detected in a whole grain bagel purchased at Panera Bread, a company that prides itself on the marketing claim, “100% of our food is 100% clean.”⁵

“In 2017, California state scientists also categorized the chemical as a probable human carcinogen and listed glyphosate in its Proposition 65 registry of chemicals known to cause cancer.”

Pret a Manger, a popular global restaurant chain with a U.S. presence, advertises that their food is “natural” and “free from obscure chemicals”⁶ but glyphosate was detected in two menu items tested. Three pizza chains were included in the sample and all tested positive. The highest level of glyphosate detected in pizza crust came from Papa John’s, a company that touts “building a foundation of quality” with “superior-quality pizza” made with “the best ingredients.”⁷

Other surprising results came from testing Whole Foods Bakery Honey Wheat Bread, Dunkin’ Donuts multigrain bagel, Olive Garden breadsticks and Subway 7 Grain Honey Oat Bread. Both beverages, Dunkin’ Donuts Arabica coffee and McDonald’s unsweetened iced tea, tested positive. Glyphosate was detected in 33 out of the 38 restaurant menu items tested. Foods with no glyphosate detected included beef, chicken, egg and sweet potato.

Glyphosate Linked to Cancer and Other Health Problems

Glyphosate is a chemical linked to cancer by the World Health Organization’s International Agency for Research on Cancer (IARC).⁸ In 2015, the IARC categorized glyphosate as a probable human carcinogen. In 2017, California state scientists also categorized the chemical as a probable human carcinogen and listed glyphosate in its Proposition 65 registry of chemicals known to cause cancer.⁹ Recently, a California jury ordered Bayer-Monsanto to pay \$289 million to DeWayne “Lee” Johnson, who is terminally ill with Non-Hodgkins Lymphoma, developed after his repeated exposure to large quantities of Roundup® and other glyphosate-based weed killers while working as a school groundskeeper.¹⁰ While the judge subsequently reduced the award to \$78 million, the verdict stands.¹¹ Currently, over 9,500 people diagnosed with Non-Hodgkin’s Lymphoma after environmental exposure to glyphosate-based herbicides are also suing Bayer-Monsanto.¹²

In addition to external exposure, there are concerns about



“One study found that higher urinary glyphosate levels in pregnant women were associated with a shortened gestational length, potentially reducing lifetime cognitive achievement.”

glyphosate in food. Glyphosate is heavily used in conventional agriculture but is not allowed to be used in organic farming. A new French study which surveyed nearly 70,000 people found that participants eating an organic diet had a 25% lower risk of developing cancer, with more significant differences in cancer rates for Non-Hodgkins Lymphoma (as much as an 86% reduction) and postmenopausal breast cancer.¹³ This was even after accounting for factors like socioeconomic status and exercise habits. The authors of the study write “the relationship between organic food consumption and cancer is still unclear,” and as expected, they call for more in-depth research which is clearly needed.

It would be remiss to focus solely on the cancer risks associated with glyphosate. Studies have linked glyphosate to other harmful health effects at levels detected in a single serving of restaurant food as documented in these restaurant food tests. A 2018 study suggests that glyphosate causes genetic damage to human lymphocytes, which are an important part of our immune system.¹⁴

Studies have also reported kidney and liver damage in rodents, including non-alcoholic fatty liver disease (NAFLD), in some cases at glyphosate levels as low as .05 parts per billion (ppb).^{15 16 17} The prevalence of NAFLD has been shown to be increasing over time. In 2005, 15% of the population had NAFLD.¹⁸ Currently, between 30 and 40% of adults and 10% of children in the United States have NAFLD.¹⁹

Multiple servings per day increase health risks. If, for example, you were to eat a bagel and coffee tested in the study for breakfast, a bagel and a cookie from the study for lunch, and a sub sandwich from the study for dinner, there could be increased health risks. At those levels, animal studies suggest that glyphosate may be an endocrine disruptor^{20 21} with the ability to potentially reduce testosterone levels^{22 23} and impair sperm quality.²³

Along with an increase in glyphosate use on crops, there has been a 500% average increase in the level of glyphosate found in human urine.²⁴ One study found that higher urinary glyphosate levels in pregnant women were associated with a shortened gestational length, potentially reducing lifetime cognitive achievement.²⁵ Another study observed that chronically ill humans had significantly higher glyphosate residues in their urine than their healthy counterparts.²⁶

In 2010, the President’s Cancer Panel weighed in on the health risks of endocrine disruptors and carcinogens to children, both before and after birth. “It is vitally important to recognize that children are far more susceptible to damage from environmental carcinogens and endocrine-disrupting compounds than adults. To the extent possible, parents and child care providers should choose foods, house and garden products, play spaces, toys, medicines, and medical tests that will minimize children’s exposure to toxics. Ideally, both women and men should avoid exposure to endocrine-disrupting chemicals and known or suspected carcinogens prior to a child’s conception and throughout pregnancy and early life, when risk of damage is greatest.”²⁷ This is an extremely strong statement that must be taken seriously.

AMPA Found To Be More Toxic Than Glyphosate

AMPA has not yet been as widely studied as glyphosate. Yet, AMPA was observed in an in vitro study to be more toxic than glyphosate on human embryonic kidney and placental cells, and



glyphosate and AMPA together were found to be even more toxic than glyphosate or AMPA alone.²⁸

How Does Glyphosate Get Into Our Food?

Glyphosate goes hand in hand with “Roundup Ready®” genetically modified crops such as corn, soy, canola, sugar beets and cotton (for cottonseed oil). The GMO crops are sprayed multiple times during the growing season to control weeds. Many people are unaware, however, that glyphosate is also used as a desiccant, ripening or drying agent, on non-GMO grains and other crops including wheat, barley, oats and other grains, sugar cane, lentils, beans, edible peas and chickpeas, sunflowers, mints, potatoes and cantaloupe. When the crops are nearly mature, farmers spray glyphosate-based herbicides on the crop to kill the plant, causing it to dry down for a quicker harvest. In cases where glyphosate is used for weed control in the rows between plants, it is often taken up by the plant or tree roots and makes its way into coffee, oranges, etc.²⁹

Glyphosate and AMPA have been detected in the air, sources of drinking water, and rain water.^{30,31} AMPA is considered to be more persistent in the environment than glyphosate.³²

What is a safe level of glyphosate in food?

In response to the dramatic rise in glyphosate use and the resulting increase in glyphosate residue in crops and food, the agrichemical industry has petitioned the Environmental Protection Agency (EPA) to incrementally increase tolerance levels - allowable “safe” levels - of glyphosate residues in crops and food. This is despite credible scientific evidence pointing to the need to lower the acceptable daily intake for glyphosate.^{21 33 34} The allowable levels of glyphosate in food were deemed “safe” not because there was scientific evidence proving their safety, but to accommodate farmers who were overusing the herbicide.

With studies cited above suggesting health problems at levels as low as .05 parts per billion, it’s hard to make a case for any level at all being safe.

Recommendations

If you must eat out, we suggest the following to reduce your exposure to glyphosate:

1. Choose organic options when available. National organic standards prohibit the use of glyphosate and other synthetic pesticides. Unlike terms such as “natural”, “organic” is federally regulated and the word cannot be used without certification.
2. Avoid conventional multigrain or whole-grain/whole wheat bread, bakery items and pastas.
3. Avoid conventional oat-based foods including cookies, muffins, and cereals like oatmeal and granola.
4. Familiarize yourself with the crops desiccated with glyphosate before harvest and do your best to avoid them.
5. Avoid foods made with genetically modified crops such as corn, canola, soy, sugar from sugar beets and cotton, as such crops are commonly sprayed with glyphosate-based herbicides.
6. Vote with your dollars. Marketing departments do an effective job of selling comfort and security. Demand that these multi-billion dollar chains do better!

Please see addendum for full table of results.

References

¹ “2018 Dining Trends Survey: Highest Tippers, Social Media Habits and More.” Zagat, Jan. 7, 2018. <https://www.zagat.com/b/2018-dining-trends-survey-highest-tippers-social-media-habits-and-more>

² “What Healthy Means Now.” Restaurant Business, Feb. 2, 2015. <https://www.restaurantbusinessonline.com/food/what-healthy-means-now>



³“2018 Food and Health Survey.” Food Insight, May 16, 2018. <https://www.foodinsight.org/2018-food-and-health-survey>

⁴“What’s Hot. 2018 Culinary Forecast. Top 10 Concept Trends.” National Restaurant Association, Sept., 2018. https://www.restaurant.org/Restaurant/media/Restaurant/Sitelimages/News%20and%20Research/Whats%20Hot/Whats_Hot_Culinary_Forecast_2018.pdf

⁵Panera Bread “Food Promise: Clean” <https://www.panerabread.com/en-us/our-beliefs/our-food-policy/clean-ingredients.html>

⁶Pret a Manger restaurant photo, New York, NY http://salsa4.salsalabs.com/o/51225/t/0/blastContent.jsp?email_blast_KEY=1383724

⁷Papa John’s “About Us: Building a Foundation of Quality.” <https://www.papajohns.com/company/index.html>

⁸International Agency for Research on Cancer (2015) IARC Monographs Volume 112: evaluation of five organophosphate insecticides and herbicides. <http://www.iarc.fr/en/media-centre/iarcnews/pdf/MonographVolume112.pdf> and <http://monographs.iarc.fr/ENG/Monographs/vol112/mono112-02.pdf>

⁹“Chemicals Considered or Listed Under Proposition 65 » Glyphosate” <https://oehha.ca.gov/proposition-65/chemicals/glyphosate>

¹⁰“Monsanto ordered to pay \$289 million in world's first Roundup cancer trial.” Reuters, Aug. 10, 2018. <https://www.reuters.com/article/us-monsanto-cancer-lawsuit/monsanto-ordered-to-pay-289-million-in-worlds-first-roundup-cancer-trial-idUSKBN1KV2HB>

¹¹“Monsanto trial: judge rejects bid to overturn landmark cancer verdict. Dewayne Johnson originally won \$289m after finding Roundup weedkiller caused illness, but judge reduces financial award.” The Guardian, Oct. 22, 2018. <https://www.theguardian.com/business/2018/oct/22/monsanto-cancer-roundup-weedkiller-judge-denies-appeal>

¹²“Monsanto’s Role in Roundup Safety Study Is Corrected by Journal.” Bloomberg, Sept. 26, 2018. <https://www.bloomberg.com/news/articles/2018-09-27/monsanto-to-s-role-in-roundup-safety-study-is-corrected-by-journal>

to-s-role-in-roundup-safety-study-is-corrected-by-journal

¹³Julia Baudry, PhD1; Karen E. Assmann, PhD1; Mathilde Touvier, PhD1; et al. Association of Frequency of Organic Food Consumption With Cancer Risk. *JAMA Intern Med.* 2018;178(12):1597-1606. doi:10.1001/jamainternmed.2018.4357 <https://jamanetwork.com/journals/jamainternalmedicine/article-abstract/2707948>

¹⁴Santovito, A., Ruberto, S., Gendusa, C. et al. In vitro evaluation of genomic damage induced by glyphosate on human lymphocytes. *Environmental Science and Pollution Research* (2018) 25: 34693. <https://doi.org/10.1007/s11356-018-3417-9> <https://link.springer.com/article/10.1007/s11356-018-3417-9#citeas>

¹⁵Gilles-Eric Séralini, Emilie Clair, Robin Mesnage, et al. Republished study: long-term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize. *Environ Sci Eur.* 2014;26:14 <http://www.enveurope.com/content/26/1/14>

¹⁶Mesnage, R., Arno, M., Costanzo, et al. (2015) Transcriptome profile analysis reflects rat liver and kidney damage following chronic ultra-low dose Roundup exposure. *Environ Health* 2015;14:70. <https://ehjournal.biomedcentral.com/articles/10.1186/s12940-015-0056-1>

¹⁷Mesnage, R. et al. Multiomics reveal non-alcoholic fatty liver disease in rats following chronic exposure to an ultra-low dose of Roundup herbicide. *Sci Rep.* 2017;7:39328; doi: 10.1038/srep39328 <http://www.nature.com/articles/srep39328>

¹⁸Zobair Younossi, Quentin M. Anstee, Milena Marietti, Timothy Hardy, Linda Henry, Mohammed Eslam, Jacob George and Elisabetta Bugianesi. Global burden of NAFLD and NASH: trends, predictions, risk factors and prevention. *Nature Reviews Gastroenterology & Hepatology.* Vol. 15, Jan. 2018. doi:10.1038/nrgastro.2017.109 Published online 20 Sep 2017

¹⁹National Institutes of Health: Definition & Facts of NAFLD & NASH <https://www.niddk.nih.gov/health-information/liver-disease/nafl-d-nash/definition-facts>

²⁰Gasnier C, Dumont C, Benachour N, et al. Glyphosate-based herbicides are toxic and endocrine disruptors in human cell lines.



Toxicology. 2009;262:184-91. <http://www.ncbi.nlm.nih.gov/pubmed/19539684>

²¹Myers, J.P., Antoniou, M.N., Blumberg, B., et al. Concerns over use of glyphosate-based herbicides and risks associated with exposures: a consensus statement. *Environmental Health* 2016;15:19 <http://ehjournal.biomedcentral.com/articles/10.1186/s12940-016-0117-0>

²²Clair E, Mesnage R, Travert C, et al. A glyphosate-based herbicide induces necrosis and apoptosis in mature rat testicular cells in vitro, and testosterone decrease at lower levels. *Toxicol In Vitro* 2012;26:269-79. <http://www.ncbi.nlm.nih.gov/pubmed/22200534>

²³Abarikwu SO, Akiri OF, Durojaiye MA, et al. Combined effects of repeated administration of Bretmont Wipeout (glyphosate) and Ultrazin (atrazine) on testosterone, oxidative stress and sperm quality of Wistar rats. *Toxicol Mech Methods*. 2015;25:70-80. <http://www.ncbi.nlm.nih.gov/pubmed/25403740>

²⁴Mills, P. J., Kania-Korwel, I., Fagan, J., McEvoy, L. K., Laughlin, G. A., & Barrett-Connor, E. (2017). Excretion of the herbicide glyphosate in older adults between 1993 and 2016. *Jama*, 318(16), 1610-1611. <https://jamanetwork.com/journals/jama/fullarticle/2658306>

²⁵Parvez, S., Gerona, R.R., Proctor, C., Friesen, M., Ashby, J.L., Reiter, J.L., Lui, Z. and Winchester, P.D., 2018. Glyphosate exposure in pregnancy and shortened gestational length: a prospective Indiana birth cohort study. *Environmental Health*, 17(1), p.23. https://ehjournal.biomedcentral.com/articles/10.1186/s12940-018-0367-0?_ga=2.189872171.1853198968.1524614400-603049718.1524614400

²⁶Krüger, M., Schledorn, P., Schrödl, W., Hoppe, H. W., & Lutz, W. (2014) Detection of Glyphosate Residues in Animals and Humans. *J Environ Anal Toxicol*, 4: 2. <https://www.omicsonline.org/open-access/detection-of-glyphosate-residues-in-animals-and-humans-2161-0525.1000210.pdf>

²⁷"Reducing Environmental Cancer Risk" President's Cancer Panel Annual Report 2008-2009. U.S. Department Of Health

And Human Services, National Institutes of Health, National Cancer Institute.

https://deainfo.nci.nih.gov/advisory/pcp/annualReports/pcp08-09rpt/PCP_Report_08-09_508.pdf

²⁸Benachour, N., & Séralini, G. E. Glyphosate formulations induce apoptosis and necrosis in human umbilical, embryonic, and placental cells. *Chem Res Toxicol*. 2008;22:97-105. <http://pubs.acs.org/doi/abs/10.1021/tx800218n>

²⁹Schrübbbers, L.C., Valverde, B.E., Strobel, B.W., Cedergreen, N. (2015) Glyphosate accumulation, translocation, and biological effects in *Coffea arabica* after single and multiple exposures. *European Journal of Agronomy* Vol. 74, March 2016, p.133-143 <https://www.sciencedirect.com/science/article/abs/pii/S1161030115300708>

³⁰Majewski MS, Coupe RH, Foreman WT, Capel PD. Pesticides in Mississippi air and rain: a comparison between 1995 and 2007. *Environ Toxicol Chem*. 2014 Jun;33(6):1283-93. doi: 10.1002/etc.2550. <https://www.ncbi.nlm.nih.gov/pubmed/24549493>

³¹Battaglin, W.A., M.T. Meyer, K.M. Kuivila, et al. Glyphosate and Its Degradation Product AMPA Occur Frequently and Widely in U.S. Soils, Surface Water, Groundwater, and Precipitation. *J Am Water Resour Assoc*. 2014;50: 275-290. <http://onlinelibrary.wiley.com/doi/10.1111/jawr.12159/abstract>

³²Caroline Cox. Glyphosate, Part 1: Toxicology. *Journal of Pesticide Reform* 1995;15:14-20 http://www.terrazul.org/Archivo/Glyphosate_Fact_Sheets.pdf

³³Cuhra, M., Bøhn, T., & Cuhra, P. Glyphosate: Too Much of a Good Thing? *Front Environ Sci*. 2016;4:28. <http://journal.frontiersin.org/article/10.3389/fenvs.2016.00028/full>

³⁴Ibrahim, Y. A. (2016a). Hypothetical adjustment of the acceptable daily intake and correction of the underrated risk: A case study of glyphosate-based herbicides. *Journal of Toxicology and Environmental Health Sciences*, 2016;8:57-67.

<http://www.academicjournals.org/journal/JTEHS/article-full-text-pdf/1A9890861798>



1. What is Glyphosate?

Glyphosate is the primary ingredient in Roundup® weedkillers and other generic equivalents. It kills both broadleaf plants and grasses and is the most commonly used herbicide in America. It's been linked to cancer, kidney and liver damage, reproductive harm and other health concerns.

3. Which one should I care about?

Both! The effective level of Glyphosate in food is (Glyphosate + 1.5x AMPA¹).



Glyphosate

1.5x AMPA

2. What is AMPA?

When Glyphosate begins to degrade, it forms AMPA, a potentially more harmful chemical than Glyphosate.

4. Here's What You Should Do:

- Be a part of the change
- Call the Chain
- Voice Your Concerns



Customer Complaints - Customer Service:

Panera®: 1.855.372.6372

Pret a Manger®: 1.646.728.0505
Le Pain

Quotidien®: 1.212.359.9000

Olive Garden®: 1.800.331.2729

Chili's®: 1.800.983.4637

IHop®: 1.866.444.5144

Outback

Steakhouse®: 1.813.282.1225

Pizza Hut®: 1.800.948.8488

Papa John's®: 1.877.547.7272

Domino's®: 1.800.366.4667

Whole Foods®: 1.844.936.8255

Subway®: 1.800.888.4848

Dunkin' Donuts®: 1.800.859.5339

McDonald's®: 1.800.244.6227

Taco Bell®: 1.800.822.6235

(In order of highest level detected to lowest)

¹Bohn, T., Cuhra, M., Traavik, T., Sanden, M., Fagan, J., & Primicerio, R. (2014). Compositional differences in soybeans on the market: Glyphosate accumulates in Roundup Ready GM soybeans. Food chemistry, 153, page 212 <https://www.sciencedirect.com/science/article/pii/S0308814613019201>

RESTAURANT	FOOD TESTED	GLYPHOSATE (PPB)	AMPA (PPB)	EFFECTIVE GLYPHOSATE LEVEL (PPB)*	LAB USED**
CASUAL DINING					
	Whole Grain Bagel	336.60	23.65	372.07	Health Research Institute Laboratories
	Whole Grain Bagel	677	Not Tested***	677	AGQ Labs
	Whole Grain Bagel	522	Not Tested***	522	AGQ Labs
	Tomato Basil Bread	236.85	25.52	275.12	Health Research Institute Laboratories
	Cilantro Jalapeño Hummus (from Mediterranean Veggie Sandwich)	20.18	0.640	21.14	Health Research Institute Laboratories
Panera Bread®	Oatmeal Raisin with Berries Cookie	112.15	5.43	120.30	Health Research Institute Laboratories
	Oatmeal Raisin with Berries Cookie	75	Not Tested***	75	AGQ Labs
	Oatmeal Raisin with Berries Cookie	63	Not Tested***	63	AGQ Labs
	Vegetarian Black Bean Soup	3.68	None Detected	3.68	Health Research Institute Laboratories
	Hard Boiled Egg	None Detected	None Detected	None Detected	Health Research Institute Laboratories
	Egg Salad Sandwich Bread	199	Not Tested***	199	AGQ Labs
Pret A Manager®	Egg Salad Sandwich Bread	250	None Detected	250	EMA Labs
	Oatmeal Raisin Cookie	174	Not Tested***	174	AGQ Labs

Pret A Manager®	Oatmeal Raisin Cookie	90	None Detected	90	EMA Labs
Le Pain Quotidien®	Bread	13	Not Tested***	13	AGQ Labs
	Oatmeal Raisin Cookie	221	Not Tested***	221	AGQ Labs
Olive Garden®	Bread Sticks	53.94	5.68	62.46	Health Research Institute Laboratories
	Pasta e Fagioli Soup	1.70	Detected	1.70	Health Research Institute Laboratories
	Whole Grain Linguini	35.87	2.10	39.02	Health Research Institute Laboratories
Chili's®	Flour Tortillas	5.40	None Detected	5.40	Health Research Institute Laboratories
	Side of Black Beans	None Detected	None Detected	None Detected	Health Research Institute Laboratories
IHop®	Harvest Grain and Nut Pancakes	11.96	None Detected	11.96	Health Research Institute Laboratories
Outback Steakhouse®	Baked Sweet Potato	None Detected	None Detected	None Detected	Health Research Institute Laboratories
	Honey Wheat Bread	172.35	16.495	197.09	Health Research Institute Laboratories
PIZZA					
Pizza Hut®	Pizza Crust	5.25	3.06	9.84	Health Research Institute Laboratories
Papa John's®	Pizza Crust	184.25	19.20	213.05	Health Research Institute Laboratories
Domino's®	Pizza Crust	52.81	5.10	60.46	Health Research Institute Laboratories

FAST FOOD/RETAIL

Whole Foods®	Honey Wheat Bread (Bakery)	167.15	7.160	177.89	Health Research Institute Laboratories
	Non-fat Bran Muffin (Bakery)	3.05	None Detected	3.05	Health Research Institute Laboratories
	Conventional Carrots (Salad Bar)	3.40	None Detected	3.40	Health Research Institute Laboratories
	Conventional Mushrooms (Salad Bar)	None Detected	2.74	4.11	Health Research Institute Laboratories
Subway®	7 Grain Honey Oat Bread	296.90	19.69	325.84	Health Research Institute Laboratories
	Oven Roasted Chicken Breast	None Detected	None Detected	None Detected	Health Research Institute Laboratories
Dunkin' Donuts®	Honey Bran Raisin Muffin	6.24	1.64	8.70	Health Research Institute Laboratories
	Multigrain Bagel	328.75	16.04	352.80	Health Research Institute Laboratories
	Brewed 100% Arabica Coffee Regular, Black, Unsweetened	0.33	None Detected	0.33	Health Research Institute Laboratories
McDonald's®	Bun from Big Mac Sandwich	12.84	2.55	16.67	Health Research Institute Laboratories
	Oatmeal	72.44	4.23	78.79	Health Research Institute Laboratories

McDonald's®	Big Mac Meat Patties	None Detected	None Detected	None Detected	Health Research Institute Laboratories
	Unsweetened Iced Tea	2.56	Detected	2.56	Health Research Institute Laboratories
Taco Bell®	Crunchy Taco Shell	15.41	Detected	15.41	Health Research Institute Laboratories
	Bean Burrito Flour Tortilla	2.08	Detected	2.08	Health Research Institute Laboratories
	Crunchy Taco Meat	2.03	2.15	5.26	Health Research Institute Laboratories
	Beans from Bean Burrito	20.41	None Detected	20.41	Health Research Institute Laboratories

*According to The Food and Agriculture Organization of the United Nations, the total Glyphosate residues should be calculated as the sum of Glyphosate + 1.5× AMPA¹.

**Levels of detection: Health Research Institute : sub parts per billion
AGQ Labs : 10 parts per billion
EMA Labs : 20 parts per billion

***Samples tested at AGQ Labs were not tested for AMPA

¹Bøhn, T., Cuhra, M., Traavik, T., Sanden, M., Fagan, J., & Primicerio, R. (2014). Compositional differences in soybeans on the market: Glyphosate accumulates in Roundup Ready GM soybeans. Food chemistry, 153, page 212 <https://www.sciencedirect.com/science/article/pii/S0308814613019201>



www.gmofreeusa.org/food-testing/eating-out-a-date-with-glyphosate