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Bottles of the weed killer Roundup at a store in Los Angeles, Calif. (AP Photo/Reed Saxon)

Glyphosate: What Indigenous communities have suspected for years about the dangers of the herbicide

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There have been renewed questions around the safety of the herbicide glyphosate in light of the recent retraction of an influential peer-reviewed research article. Originally published in 2000 in the academic journal *Regulatory Toxicology and Pharmacology*, the article claimed that glyphosate posed no risk to human health.

Glyphosate is widely used in forestry, agriculture and land-use management. Commercially sold under brands such as Roundup, it's the most widely used herbicide in Canada.

In the journal's retraction notice, the (co)editor-in-chief wrote: "Concerns were raised regarding the authorship of this paper, validity of the research findings in the context of misrepresentation of the contributions by the authors and the study sponsor and potential conflicts of interest of the authors."

These potential conflicts raise questions about the study's authorship and results, and renew concerns about the safety of glyphosate. According to Health Canada, consuming foods treated with glyphosate does "not result in any human health concern to any segment of the population." This aligns with findings from other governments, including the United States, New Zealand and Australia.

Scientific research is an essential part of protecting the health and well-being of people and the planet, but it only tells part of the story. And despite some conclusions that glyphosate poses no risk, there have long been concerns regarding its impacts on the environment and human health, particularly from Indigenous communities.

Our ongoing research, in partnership with the Animbiigoo Zaagi'igan Anishinaabek (AZA) First Nation in northwestern Ontario, about the impact of glyphosate being sprayed on their traditional territory demonstrates that policymakers and researchers need to learn from the experiences of people living and working on the land.

Concerns over glyphosate

Despite claims glyphosate poses no risk, there have long been concerns regarding its impacts on the environment and human health. (Getty Images/Unsplash+)

Our research focuses on glyphosate's impacts on AZA's relationships with the land along with the forestry companies and provincial government that use and regulate the herbicide on their territory. Through our work with 14 First Nations that are part of the Understanding Our Food Systems project, several communities expressed great concern about environmental contaminants on their territories.

Members of the AZA have been particularly distressed about the impacts of glyphosate on their traditional food systems, the land and watershed, and the community's health for several years. People who live and work on the land have noticed many changes and called for research and action to address these concerns.

In 2015, the International Agency for Research on Cancer classified glyphosate as "probably carcinogenic to humans" based on "limited" evidence it causes cancer in people and "sufficient" evidence it causes cancer in animals.

This has been of particular concern for many Indigenous communities in terms of the impact of glyphosate being sprayed on the berries, animals, medicines and fish that make up their traditional food systems.

While several health-related issues have been connected to glyphosate use, such as destruction of cells, inflammation that can damage healthy tissue and weakening of the immune system's ability to defend the body against infections and disease, there is no clear consensus on what level is considered safe.

Working closely with AZA, our team of researchers from Lakehead University and the Thunder Bay District Health Unit conducted a series of sharing circles and interviews with Elders, Knowledge Keepers, hunters, gatherers and youth to learn from their observations and experiences.

The ultimate goal of our ongoing research is to better understand the community's experiences and perspectives of glyphosate to ensure they retain access to traditionally hunted, harvested and grown foods and to protect the environments they depend on.

Listening to Indigenous people

Blueberries from the region near Animbiigoo Zaagi'igan Anishinaabek territory. Indigenous Elders, Knowledge Keepers, hunters, gatherers and youth said foods did not taste, smell or look the same. (Charles Z. Levkoe)

AZA members pointed to ways that traditional knowledge could be used to better understand the impacts of environmental contamination. Those who participated in the conversations shared experiences of finding fewer animals and plants in areas sprayed with glyphosate, making access to traditional foods difficult.

Many participants said animals were more diseased and that harvested and hunted foods did not taste, smell or look the same as they did previously. Disruptions to the cycles of the land and the loss of species impact the community's food security as well as its self-determination and ability to transfer knowledge to future generations.

Western science tends to dominate policymaking and regulation. However, Indigenous knowledge has a lot to contribute to research and decision-making. Two-eyed seeing, described by Mi'kmaw Elder Albert Marshall, is a way to integrate Indigenous and western ways of knowing, foster deeper understanding and create more holistic, balanced approaches for the benefit of all.

Read more: How Two-Eyed Seeing, 'Etuaptmumk,' is changing outdoor play in early childhood education

This demands that policymakers take seriously the concerns voiced by Indigenous people around environmental contamination. It also requires more transparent communication, accessible information and testing of waterways, animals and the land.

Listening to Indigenous people and learning from their observations and experiences is essential to protect the lands and waters where they hunt, harvest, and grow foods and medicines, and to ensure the health and well-being of all human and non-human kin.

This article was co-authored by Dorothy Rody from the Animbigoo Zaagi'igan Anishnaabek First Nation, Kim McGibbon, a public health nutritionist at the Thunder Bay District Health Unit, and Liz Lovell, a former master's student in health sciences at Lakehead University.

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