

How to Eliminate Weeds, Insects and Disease without Using Poisons (Herbicides, Insecticides, or Fungicides) That Cause Cancer in Humans and Harm the Environment - White Paper

Introduction

The International Agency for Research on Cancer has released its finding that glyphosate, produced and sold as Roundup by Monsanto, the country's most popular herbicide, causes cancer in humans. National public health and environmental groups are now calling on the EPA and the USDA to stop its use. For years, glyphosate has been claimed to have "low toxicity" and be "safer" than other chemicals, and it is widely used in food production and on lawns, gardens, parks, and children's fields. The new findings note that glyphosate caused DNA and chromosomal damage in human cells. Epidemiologic studies have also found that exposure to glyphosate is associated with an increased risk of non-Hodgkin's lymphoma. Ecological data also reports that glyphosate and glyphosate formulated products are toxic to aquatic organisms and extremely lethal to amphibians. Given there are effective organic management system alternatives available that do not use glyphosate, it is time for the EPA and the USDA to take responsible action to cease the use of this hazardous and unnecessary pesticide. This white paper presents facts relating to recent scientific and epidemiologic research findings and offers a healthy alternative to eliminating weeds, pests and disease in plants and lawns without having to rely on unhealthy chemical products that are harmful to people and the environment.

Background

The International Agency for Research on Cancer (IARC) assessed the carcinogenicity of five organophosphate pesticides, tetrachlorvinphos, parathion, malathion, diazinon, and glyphosate, and released its findings in a report on March 20, 2015. The first four of these were classified as being carcinogenic to wild life and possibly or probably carcinogenic to humans. However, the IARC found specific evidence of carcinogenicity in humans for non-Hodgkin lymphoma and lung cancer from glyphosate. The evidence in humans is from studies of exposures, mostly agricultural, in the USA, Canada, and Sweden published since 2001. There is convincing evidence that glyphosate also can cause cancer in laboratory animals, and glyphosate did cause DNA and chromosomal damage in human cells. One study in community residents reported increases in blood markers of chromosomal damage (micronuclei) after glyphosate formulations were sprayed nearby.

A research paper published in the International Journal of Environmental Research and Public Health (JERPH) describes results from a systematic review and of nearly three decades worth of epidemiologic research on the relationship between non-Hodgkin lymphoma (NHL) and occupational exposure to agricultural pesticide active ingredients and chemical groups. B cell lymphoma was positively associated with phenoxy herbicides and the organophosphorus herbicide glyphosate. Diffuse large B-cell lymphoma was positively associated with phenoxy herbicide exposure. Few of the studies reported associations with subtypes of NHL; however, based on the few that did,

there were strong associations between certain chemicals and B cell lymphomas. These results show that there is consistent evidence that pesticide exposures experienced in occupational agricultural settings may be important determinants of NHL.

Pesticide exposure can be associated with NHL in several ways. Pesticides can cause chromosomal aberrations and genetic mutations. A chromosomal abnormality called the T translocation is common among cases of follicular lymphoma and diffuse large-B-cell lymphoma. Another way pesticide exposure can cause NHL is by altering cell mediated immune function. Immunological changes have been observed following short-term exposure to herbicides among farmers.

Problem

- * Tetrachlorvinphos is banned in the European Union. In the USA, it continues to be used on livestock and companion animals, including in pet flea collars. No information was available on use in other countries.
- * Parathion use has been severely restricted since the 1980s. All authorized uses were cancelled in the European Union and the USA by 2003.
- * Malathion is currently used in agriculture, public health, and residential insect control. It continues to be produced in substantial volumes throughout the world. Workers may be exposed during the use and production of malathion. Exposure to the general population is low and occurs primarily through residence near sprayed areas, home use, and diet.
- * Diazinon has been applied in agriculture and for control of home and garden insects. Production volumes have been relatively low and decreased further after 2006 due to restrictions in the USA and the European Union.
- * Glyphosate, produced and sold as Roundup by Monsanto, currently has the highest global production volume of all herbicides. The largest use worldwide is in agriculture. The agricultural use of glyphosate has increased sharply since the development of crops that have been genetically modified to make them resistant to glyphosate. Glyphosate is also used in forestry, urban, and home applications. Glyphosate has been detected in the air during spraying, in water, and in food. The general population is exposed primarily through residence near sprayed areas, home use, and diet, and the level that has been observed is generally low.

The IARC provides scientific evaluations based on a comprehensive review of the scientific literature, but it is up to individual governments and other international organizations to recommend regulation, legislation or public health intervention.

Evidence in the JERPH research showing that NHL is associated with certain chemicals is compelling, but the review also calls for investigations of more pesticides in more geographic areas, especially in low and middle income countries that produce much of the world's agriculture.

A national public health and environmental group, Beyond Pesticides, is now calling on the U.S. Environmental Protection Agency (EPA) and the U.S. Department of

Agriculture (USDA) to stop the use of the country's most popular herbicide, glyphosate, produced and sold as Roundup by Monsanto, in the wake of the international ruling by the IARC that it causes cancer in humans. Change through activism and legislation can be a lengthy process, but as concerned, free-thinking individuals we do not have to wait any longer to make changes on our own.

How do we continue to have beautiful lawns, gardens, playfields, and productive crops without using the commercial poisons we have been convinced we need for so long?

Solution

It is a well known but not publicized phenomenon that weeds grow best in nutritionally unbalanced soils. Flowers, shrubs, and vegetables grown in nutritionally unbalanced soils are malnourished and sickly, thus attracting insects and disease. Well nourished plants are healthy and strong and resist disease and insects.

First, have a soil test done. You don't know if your soil is unbalanced without one. With a soil test you find out which nutrients are lacking or over abundant in your soil. Add the nutrients that are lacking and don't add what you already have enough of. You can get information on how much nutrient to add on the Internet, just Google balanced soil.

When you get your soil nutritionally balanced, your flowers, shrubs, lawn and vegetables will become strong and resistant to disease and insects. The weeds will start becoming the plants that are weak and sickly. They will become the ones that attract bugs and disease and will eventually decline and die.

Conclusion

Stop using Roundup and other commercial chemical herbicides, insecticides, or fungicides! We live in an instant gratification culture where we have been conditioned to believe we must always use the fast and easy solution. Just because something is fast and easy does not at all mean it is the healthier and more ethical solution. We must get into the habit of stopping to think about the consequences of what we do or add to our land in terms of whether or not it is good for us or the environment. The healthier more ethical way to go is likely to require more patience and effort on our part in order to see the result we want of a beautiful, well nourished landscape and nutritious food that is vital for our bodies.

Mary Michele McLaughlin
TM Information Services
info@tminformationsservices.com
April 2015

References:

IARC Monographs Volume 112: Evaluation of Five Organophosphate Insecticides and Herbicides; World Health Organization, March 20, 2015. <http://www.iarc.fr/en/media-centre/iarcnews/pdf/MonographVolume112.pdf>

Non-Hodgkin Lymphoma and Occupational Exposure to Agricultural Pesticide Chemical Groups and Active Ingredients: A Systematic Review and Meta-Analysis; International Journal of Environmental Research and Public Health, April 11, 2014. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4025008/>

Beyond Pesticides (formerly National Coalition Against the Misuse of Pesticides), a 501(c)3 nonprofit organization headquartered in Washington, D.C., which works with allies in protecting public health and the environment to lead the transition to a world free of toxic pesticides; <http://www.beyondpesticides.org> .