

Facts About 2,4-D Formulated Herbicides

What do we know about this commonly used chemical?

Developed in the 1940s by Dow Chemical, the application of this herbicide remains ubiquitous. It is an active ingredient in “weed and feed” products, and three-way herbicides for broadleaf weed control on turf grass.¹

2,4-D is linked to non-Hodgkin’s lymphoma (a blood cancer) and sarcoma (a soft-tissue cancer). It has been declared a possible human carcinogen in 2015 by the International Agency for Research on Cancer. This decision was based on studies showing it caused cancer in laboratory animals, along with evidence that it damages human cells.²

Very strong evidence exists to show that 2,4-D is an endocrine disrupting chemical. It has been shown to inhibit the function of certain hormones, including thyroid hormone, which plays a vital role in healthy brain development.³

Many herbicide formulations with 2,4-D also include other active ingredients like MCPP or dicamba. Regulations do not require these ingredients to be tested together. These combinations can lead to synergism or additive effects making them more toxic than they would be in isolation.⁴

According to a study by the National Cancer Institute, owners of dogs with canine malignant lymphoma

(CML) were twice as likely to treat their lawns with 2,4-D four times or more a year than owners of dogs who did not have cancer. Purdue University found that dogs exposed to 2,4-D had bladder cancer at rates four to seven times higher than dogs not exposed to these herbicides.⁵

2,4-D is persistent in our environment. It is tracked indoors where it contaminates dust, air and surfaces and may remain for up to a year in carpets. It has been detected in ground and surface water, including drinking water.⁶

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1. 2,4-D: The Most Dangerous Pesticide You’ve Never Heard Of, NRDC, March 15, 2016
 2. IARC Monographs evaluate DDT, lindane, and 2,4-D, June 23, 2015
 3. TEDX, The Endocrine Disruption Exchange, List of Potential Endocrine Disruptors, updated September, 2018
 4. Harris-Lovett S., Combinations of ‘safe’ chemicals may increase cancer risk, study suggests, LA Times, July 1, 2015
 5. Hayes HM, et al., Journal of the National Cancer Institute, September 4, 1991, Case-control study of canine malignant lymphoma: positive association with dog owner’s use of 2,4-dichlorophenoxyacetic acid herbicides - Glickman LT, et al., Journal of the American Veterinary Association, April 15, 2004, Herbicide exposure and the risk of transitional cell carcinoma of the urinary bladder in Scottish Terriers
 6. Pesticides in Surface Waters, U.S Geological Survey

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