

2,4-D

AKA: *Weedtrine-II, Aqua-Kleen, Barrage, Plantgard, Lawn-Keep, Planotox, Weed-B-Gon, and Malerbane*

Uses

- This herbicide is used to kill broad leafed plants and will not usually kill grasses.¹
- Commonly used on rangeland, pasture, in the production of wheat, and on lawns.²

Health & Environmental Impacts

- Insulin resistance and increased risk for heart disease: According to a new study, exposure to 2,4-D is associated with reduced high density lipoprotein (HDL) cholesterol (“good” cholesterol which helps to transport low density cholesterol to the liver and out of the body).³
- Reproductive toxicity: In animal studies 2,4-D has been shown to disrupt the development of egg cells, so it may have an impact on the fertility and development of humans.⁴ Exposure to 2,4-D is also linked to significant changes in the sex ratio in future generations of fish, with more females being born after exposure.⁵
- Cancer: Risk for Non-Hodgkin’s Lymphoma is significantly increased for farmers who use 2,4-D.⁶ Dogs who are exposed to 2,4-D also have an increased risk of cancer.⁷
- Hormone disruption: Exposure to 2,4-D lowers levels of thyroid hormone T4 in animal studies.^{8,9} Thyroid hormones are important in the regulation of metabolism, temperature, and brain development *in utero*.
- Brain development and behavior: Animal studies have demonstrated that 2,4-D may impact neurotransmitters, brain size, and the connections between neurons.^{10,11,12} In a recent study, mother rats exposed to 2,4-D demonstrated less caring behavior toward their young.¹³
- 2,4-D is frequently found rivers, streams, air, and in house dust.^{14,15,16} In study that measured the exposure of pre-school aged children to pesticides, 2,4-D was found in the dust of over 80% of the homes.¹⁷

Alternatives to 2,4-D

Please see “Alternatives to glyphosate” section to learn how to keep your lawn and garden healthy without pesticides.

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- ¹¹ Ferri A, et al. 2003. Iron, zinc, and copper levels in brain, serum, and liver of neonates exposed to 2,4-dichlorophenoxyacetic acid. *Neurotoxicol Teratol*, 25: 607-613.
- ¹² Garcia G, Tagiaferro P, Ferri A, Evangelista de Duffard AM, Duffard R, & Brusco A. 2004. Study of tyrosine hydroxylase immunoreactive neurons in neonate rats lactationally exposed to 2,4-dichlorophenoxyacetic acid. *Neuro Toxicology*, 25: 951-957.
- ¹³ Sturtz N, Deis RP, Graciela AJ, Duffard R, & Evangelista de Duffard AM. 2008. Effect of 2,4-dichlorophenoxyacetic acid on rat maternal behavior. *Toxicology*, 247(2-3): 73-79.
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