

Pesticides Used in Our Communities – Human Health and Environmental Impacts

Pesticide	Use	Impacts	Alternatives
<p>2,4-D 2,4-Dichlorophenoxyacetic acid</p> <p>(e.g., used in “weed and feed” products and often formulated in combination with Dicamba and Mecoprop – such as in <i>Killex</i> , <i>Par III</i> or <i>Trillion</i>)</p>	Broad leaf weeds	<ul style="list-style-type: none"> • Component of Agent Orange;¹ • Potential for dioxin contamination and/or 2,4-D exposure occurring in mixtures with other pesticides has resulted in widely varied results investigating cancer risks;² • Contaminates urban bodies of water;³ (detected in Grenadier Pond, Humber and Don Rivers⁴) • Surface and groundwater contaminant;^{3,4,5} • May be linked to non-Hodgkin's lymphoma;^{6,7,8,9,10} • May be linked to prostate cancer in farmers;¹¹ • Found in residential carpet dust up to one year after application outdoors on lawns;¹² • Endocrine disruption¹³ • Acute effects of pesticide exposure range from irritation of the nose, eyes and throat, burning, itches and rashes to nausea, vomiting, headaches and general malaise;^{14,15} • Reduced sperm counts and/or increased abnormalities in sperm^{16,17} • Chlorophenoxy herbicides - which include 2,4-D - are classified in Group 2B (possible carcinogen) by International Agency for Research on Cancer (IARC).^{18,19} 	<p>✓ Comprehensive turf care management program to reduce weeds. Program elements include:</p> <ul style="list-style-type: none"> - proper watering - overseeding - aeration - use of slow-release organic fertilizers - monitoring
<p>Dicamba 2-Methoxy-3,6-dichlorobenzoic acid</p> <p>(e.g., <i>Banvel</i>, <i>Scott's Pro-Turf K-O-G</i>)</p>	broad leaf weeds	<ul style="list-style-type: none"> • Listed by the U.S. EPA as a developmental toxin.²⁰ • Negative reproductive effects;²¹ • Cholinesterase inhibitor;²¹ • Linked to non-Hodgkin's lymphoma;²¹ • Surface and groundwater contaminant;³ 	<p>✓ Same as above</p>
<p>Mecoprop 2-(2-Methyl-4-chlorophenoxy)propionic acid,</p>	broad leaf weeds	<ul style="list-style-type: none"> • Linked to cancer of soft tissues and non-Hodgkin's lymphoma;¹⁵ • Medium toxicity to birds,¹⁵ • Surface and groundwater contaminant;³ • Listed as a possible carcinogen by the International Agency for Research on Cancer.¹⁸ 	<p>✓ Same as above</p>
<p>MCPA 2-Methyl-4-chlorophenoxyacetic acid</p>	broad leaf weeds	<ul style="list-style-type: none"> • Often used with 2,4-D, mecoprop and/or dicamba; • Linked to reproductive effects, mutagenicity;¹⁵ • Potential groundwater contaminant;^{3,15} • Can cause severe eye irritation, slurred speech, muscle spasms;¹⁵ • Listed as a possible carcinogen by the International Agency for Research on Cancer.¹⁸ 	<p>✓ Same as above</p>
<p>Glyphosate N-Phosphonomethylglycine</p> <p>(e.g, <i>Roundup</i>, <i>Touchdown</i>)</p>	broad leaf weeds	<ul style="list-style-type: none"> • Linked to spontaneous abortion²² • Leaches from sandy soils and contaminates water, highly toxic to fish;²³ • Broad spectrum herbicide that kills turf if applied incorrectly²³ 	<p>✓ Same as above</p>
<p>Malathion O,O-Dimethyl phosphorodithioate of diethyl mercaptosuccinate</p>	insect control	<ul style="list-style-type: none"> • Mutagenic;¹⁵ • Acute exposure causes headaches, loss of vision, nausea;¹⁵ • Highly toxic to birds, bees, fish, amphibians, earthworms;¹⁵ • Listed as a possible carcinogen by the International Agency for Research on Cancer.¹⁸ 	<p>✓ Boric acid, diatomaceous earth, nematode products, insecticidal soap</p>
<p>Carbaryl 1-Naphthyl-N-methylcarbamate</p> <p>(e.g., <i>Sevin</i>, <i>Sevimol</i>, <i>Latox</i>; mixed in some products with Chlorothalonil or Dicofol)</p>	insect control	<ul style="list-style-type: none"> • Potential Endocrine disruptor.²⁴ • Exposures may cause sterility or decreased fertility, impaired development, birth defects of the reproductive tract, and metabolic disorders.²⁵ • Linked to spontaneous abortion²² • Linked to non-Hodgkin's lymphoma^{26,27} • Toxic to fish, bees and earthworms;¹⁵ 	<p>✓ Same as above</p>

Chlorothalonil Tetrachloroisophthalonitrile (e.g., <i>Daconil</i> , <i>Nuocide</i> , <i>Nopocide</i> , <i>Rigo Exotherm</i> , etc.)	fungus control	<ul style="list-style-type: none"> Highly toxic to fish, aquatic invertebrates and marine organisms;²⁸ Acute exposure causes severe eye and skin irritation;²⁸ Listed as a possible carcinogen by the International Agency for Research on Cancer.¹⁸ Reproductive toxin;²⁸ 	✓ Investigate use of compost formulations to combat fungus
Benomyl Methyl 1-(butylcarbamoyl)-2-benzimidazolecarbamate (e.g., <i>Wilson's Benomyl 50</i> , <i>Benlate Toss-N-Go</i>)	fungus control on golf courses, bowling greens	<ul style="list-style-type: none"> Listed by the U.S. EPA as a developmental toxin and possible carcinogen.²⁰ Voluntary cancellation by industry in US; numerous products still registered in Canada Suspected endocrine disruptor.²⁴ Exposure may cause sterility or decreased fertility, impaired development, birth defects of the reproductive tract, and metabolic disorders;²⁵ 	✓ Use compost formulations to combat fungus
Quintozene Pentachloronitrobenzene (sold as <i>Quintozene 75% Wettable Powder Fungicide</i> or as technical active ingredient)	fungus control and fertilization on golf courses and bowling greens	<ul style="list-style-type: none"> Exposure may cause sterility or decreased fertility, impaired development, birth defects of the reproductive tract, and metabolic disorders;²⁵ Listed as a possible carcinogen by the U.S. EPA.²⁵ Can contain traces of hexachlorobenzene (a suspected teratogen, mutagen and endocrine disruptor);²⁹ Extremely persistent -- half-life of 117 to 1,059 days;³⁰ 	✓ Same as above
Bendiocarb 2,2-dimethyl-1,3-benzodioxol-4-yl methylcarbamate (a.k.a. <i>Ficam</i> , a fungicide and in <i>Raid Ant Terminals</i>)	fungus control on golf courses, bowling greens	<ul style="list-style-type: none"> Endocrine disruptor;³¹ Exposure may cause sterility or decreased fertility, impaired development, birth defects of the reproductive tract, and metabolic disorders.²⁵ Listed by the U.S. EPA as a reproductive toxin.²⁰ Toxic to unborn children and infants under 6 months children, highly toxic to humans, especially those with asthma, diabetes and cardiovascular problems;³¹ Toxic to fish and bees;³¹ 	✓ Same as above

Endnotes

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