Herbicides Sold at Home Depot and Lowe's: **A Toxicity Analysis**

Introduction

Many herbicides that are widely available at home and garden stores are associated with a range of toxic impacts on human health and the environment, including harm to bees and other pollinators. To meet growing consumer demand for safer and more environmentally friendly products, home and garden stores must commit to phase out the most toxic products from their shelves and to increase the number of organic and safer alternatives that they offer.

This analysis of herbicide products offered by the two largest U.S. home and garden retailers, Home Depot and Lowe's, is meant to educate consumers and to encourage the companies to take action to protect people and pollinators by rejecting toxic products and expanding safer options.

Summary of findings	We urge Home Depot and Lowe's to:
The main ingredient in Roundup — glyphosate — is associated with increased risk of cancer, reproductive harm, neurotoxicity, and endocrine disruption. It is also toxic to birds, bees, aquatic organisms, and contaminates water resources.	**End sales of all glyphosate-based herbicides.**
Half of all herbicide products offered by Home Depot (24 of 51) and Lowe's (23 of 40) contain ingredients classified as Highly Hazardous Pesticides.*	**Phase out herbicides containing highly hazardous ingredients.**
29% of all herbicide products offered by Home Depot (15 of 51) and 17% offered by Lowe's (7 of 40) qualify as organic or least-toxic.	**Expand organic and least-toxic options.**

* See Pesticide Action Network **List of Highly Hazardous Pesticides**

Understanding organic and least-toxic products

Organic systems nurture soil biology to support the natural cycling of nutrients, resulting in resilient turf systems and plants. Because the use of toxic materials undermines the organic system by harming soil life, identifying compatible products is an essential component of the system.

The term "organic" is backed by a robust set of criteria governed by federal law under the National Organic Program at the United States Department of Agriculture (USDA). The list of herbicides and other pesticide products allowed in organic production is highly restricted to include only least-toxic ingredients derived primarily from natural (non-synthetic) sources.

A least-toxic pesticide is one that has low human and environmental health hazards. Many least-toxic pesticides are botanicals, essential oils, or are derived from plant or natural mineral sources.

OMRI Approved

Consumers seeking safer alternatives at home and garden stores can look for the Organic Materials Review Institute (OMRI) label. OMRI is an independent agency that reviews products against the federal organic standards, so consumers can trust that "OMRI-approved" means that a product is compatible with the National Organic Standards and is a safer alternative. However, not all products approved for organic production are listed with OMRI since the institute is not affiliated with the USDA.

Consumers won't find the USDA Organic seal that's familiar from grocery shopping at home and garden stores. "Certified Organic" applies only to products grown organically, it does not apply to products used in organic production. In other words, a carrot, a bag of potato chips, or cotton may be certified organic, but the potting soil or biological pesticide used in growing these products is not certified organic.

25(b) Exempt Products

This resource identifies least-toxic products that are 25(b) Exempt. This classification was created by the U.S. Environmental Protection Agency (EPA) to identify products that the EPA considers to be 'minimal risk' to human health. To achieve this classification, both the active and inert ingredients of a product need to be clearly identified on the label and must all meet the criteria for minimal risk. Consumers can trust that 25(b) Exempt products are safer options.

The challenge of inert ingredients

Under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), pesticide manufacturers are only required to list the active ingredients in an herbicide or other pesticide product. Therefore, neither conventional nor organic pesticides are required to reveal their inert ingredients on the product label. This creates a major challenge for assessing the toxicity of any product since inert ingredients can be more toxic than the active ingredients. And in some cases, inert ingredients can amplify the toxicity of the active ingredients. For example, research has shown that the inert ingredients in Roundup amplify the toxic effects of glyphosate on human cells. Unless the EPA publicly identifies an inert ingredient as posing a public health threat, consumers and applicators remain unaware of the possible toxicities present in the inert ingredients of herbicides and other pesticide products. There is a need for more transparency and research on inert ingredients in order to protect consumer health.

Conventional Herbicides

By Product

Retailer			Product Name	Active Ingredients	Human Health Effects								Animal & Environmental Effects			
Lowe's	Home Depot	Ingredient(s) classifed as Highly Hazardous Pesticide(s)*			Birth/ Developmental effects	Cancer	Endocrine Disruption	Kidney/Liver Effects	Neurotoxicity	Reproductive/ Sexual Dysfunction	Skin, Eye, Mucosal Sensitizer/ Irritant	Other	Toxic to Birds	Toxic to Bees and Other Beneficial Organisms	Toxic to Fish/ Aquatic Organisms	Contamination (groundwater, drift, leaching)
X	X		**30 Seconds Spray and Walk Away Concentrate**	Alkyl dimethyl benzyl ammonium chloride (ADBAC)	Possible[57]	Not Likely	Suggestive[58c]	Not Likely[62]	Possible[59]	Likely[58]	Yes[29]	Possible Immunotoxicity[56]	Yes[29]	Not Likely	Yes[29]	Not Likely
X	X		**Bayer Advanced Brush Killer Plus**	Triclopyr Triethylamine Salt	Yes[1]	Not Likely	Suggestive[60]	Yes[3]	Not Likely	Yes[1]	Yes[2]		Low[2, 61]	Low[2]	Yes[2]	Yes[1,2]
X	X	X	**Bayer Advanced Lawn Weed Killer**	2,4-D, dimethylamine salt	Yes[4]	Yes[4]	Probable[5]	Yes[7]	Yes[7]	Yes[6]	Yes[4]		Yes[4]	Yes[4]	Yes[8]	Yes[4,7,63]
				Dicamba, dimethylamine salt	Yes[3]	Suggestive[9]	Potential[65]	Yes[10]	Yes[11]	Yes[11]	Possible[10]		Yes[12]	Low to Moderate[10,66]	Low to Moderate[10]	Yes[11,63,64]
				Quinclorac	Low[13b]	Insufficiently Studied	Insufficiently Studied	Possible [79]	Possible [79]	Low[13b]	Yes[13]		Low[79]	Low[79]	Yes[13a]	Yes[13a]
X	X	X	**Bayer Advanced Season Long Weed control for Lawns**	2,4-D, dimethylamine salt	Yes[4]	Yes[4]	Probable[5]	Yes[7]	Yes[7]	Yes[6]	Yes[4]		Yes[4]	Yes[4]	Yes[8]	Yes[4,7,63]
				Dicamba, potassium salt	Yes[3]	Suggestive[9]	Potential[65]	Yes[10]	Yes[11]	Yes[11]	Yes[10]		Yes[12]	Low to Moderate[10,66]	Yes[10]	Yes[11,63,64]
				Isoxaben	Possible[70]	Suggestive[14]	Insufficiently Studied	Yes[15]	Not Likely	Insufficiently Studied	Not Likely[70]	Yes[15] (cariovasular)	Yes[12a]	Low[70]	Moderate[70]	Yes[68]
				Mecoprop-p, potassium salt	Yes[16]	Yes[14]	Insufficiently Studied	Yes[16]	Yes[16]	Yes[17]	Yes[16]	Acute Toxicity[71]	Yes[12b]	Insufficiently Studied	Yes[18]	Yes[71]
	X		**Bonide Crabgrass and Weed Preventer**	Dithiopyr	Not Likely	Not Likely	Yes[30]	Probable[73]	Insufficiently Studied	Not Likely	Possible Mild Irritant[73]	Suggestive Mammalian Toxicity [73]	Not Likely[73]	Yes[31]	Yes[30]	Yes[72]
	X	X	**Compare-N-Save 2, 4-D Broadleaf Weed Control**	2,4-D, dimethylamine salt	Yes[4]	Yes[4]	Probable[5]	Yes[7]	Yes[7]	Yes[6]	Yes[4]		Yes[4]	Yes[4]	Yes[8]	Yes[4,7,63]
	X	X	**Compare-N-Save Weed Killer for Lawns**	2,4-D, dimethylamine salt	Yes[4]	Yes[4]	Probable[5]	Yes[7]	Yes[7]	Yes[6]	Yes[4]		Yes[4]	Yes[4]	Yes[8]	Yes[4,7,23]
				Dicamba, potassium salt	Yes[3]	Suggestive[9]	Potential[65]	Yes[10]	Yes[11]	Yes[11]	Yes[10]		Yes[12]	Low to Moderate[10,66]	Yes[10]	Yes[11,63,64]
				Mecoprop-p, potassium salt	Yes[16]	Yes[14]	Insufficiently Studied	Yes[16]	Yes[16]	Yes[17]	Yes[16]	Acute Toxicity[71]	Yes[12b]	Insufficiently Studied	Yes[18]	Yes[71]
	X	X	**GreenView Broadleaf Weed Control**	Dicamba, potassium salt	Yes3	Suggestive[9]	Potential[65]	Yes[10]	Yes[11]	Yes[11]	Yes[10]		Yes[12]	Low to Moderate[10,66]	Yes[10]	Yes[11,63,64]
				Mecoprop-p, potassium salt	Yes[16]	Yes[14]	Insufficiently Studied	Yes[16]	Yes[16]	Yes[17]	Yes[16]	Acute Toxicity[71]	Yes[12b]	Insufficiently Studied	Yes[18]	Yes[71]
				2,4-D, dimethylamine salt	Yes[4]	Yes[4]	Probable[5]	Yes[7]	Yes[7]	Yes[6]	Yes[4]		Yes[4]	Yes[4]	Yes[8]	Yes[4,7,63]
X	X		**GreenView Fairway Formula with Crabgrass Preventer**	Dithiopyr	Not Likely	Not Likely	Yes[30]	Probable[73]	Insufficiently Studied	Not Likely	Possible Mild Irritant[73]	Suggestive Mammalian Toxicity [73]	Not Likely[73]	Yes[31]	Yes[30]	Yes[72]

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X		X	**Ike's Lawn Weed Killer**	Dicamba, potassium salt	Yes[3]	Suggestive[9]	Potential[65]	Yes[10]	Yes[11]	Yes[11]	Yes[10]		Yes[12]	Low to Moderate[10,66]	Yes[10]	Yes[11,63,64]
				Mecoprop-p, potassium salt	Yes[16]	Yes[14]	Insufficiently Studied	Yes[16]	Yes[16]	Yes[17]	Yes[16]	Acute Toxicity[71]	Yes[12b]	Insufficiently Studied	Yes[18]	Yes[71]
				2,4-D, dimethylamine salt	Yes[4]	Yes[4]	Probable[5]	Yes[7]	Yes[7]	Yes[6]	Yes[4]		Yes[4]	Yes[4]	Yes[8]	
X		X	**Ike's Sandbur and Crabgrass Preventer**	Pendimethalin	Yes[97]	Possible[14]	Yes[51]	Yes[3]	Insufficiently Studied	Yes[52]	Yes[53]	Bioaccumulation in Tissue [97]	Moderate[97]	Moderate[97]	Yes[52,54]	Yes[52]
X	X		**IMAGE All-in-One Lawn Weed Killer**	Sulfentrazone	Yes[19]	Not Likely[76]	Insufficiently Studied	Possible[78]	Possible[76]	Yes[19]	Yes[19]	Possible Hematotoxicity[76]	Not Likely[78]	Moderate[78]	Yes[19]	Yes[78]
				Quinclorac	Low[13b]	Insufficiently Studied	Insufficiently Studied	Possible [79]	Possible [79]	Low[13b]	Yes[13]		Low[79]	Low[79]	Yes[13a]	Yes[13a]
X	X		**IMAGE Nutsedge Killer**	Ammonium salt of Imazaquin	Possible[80]	Suggestive[81]	Suggestive Thyroid Stimulting[20]	Not Likely	Possible[82]	Possible[80]	Possible Skin Sensetizer[80]		Low to Moderate[80]	Low to Moderate[80]	Low[80]	Not Likely
	X		**LESCO Dimension Crabgrass Preventer**	Dithiopyr	Not Likely	Not Likely	Yes[30]	Probable[73]	Insufficiently Studied	Not Likely	Possible Mild Irritant[73]	Suggestive Mammalian Toxicity [73]	Not Likely[73]	Yes[31]	Yes[30]	Yes[72]
X	X	X	**LESCO Weed and Feed Professional**	2,4-D, dimethylamine salt	Yes[4]	Yes[4]	Probable[5]	Yes[7]	Yes[7]	Yes[6]	Yes[4]		Yes[4]	Yes[4]	Yes[8]	
				Mecoprop-p, potassium salt	Yes[16]	Yes[14]	Insufficiently Studied	Yes[16]	Yes[16]	Yes[17]	Yes[16]	Acute Toxicity[71]	Yes[12b]	Insufficiently Studied	Yes[18]	Yes[71]
				Dichlorprop-p	Yes[3]	Suggestive[84]	Insufficiently Studied	Possible[83]	Not Likely	Yes[83]	Yes[40]	Suggestive Moderate Mammalian Toxicity[83] Possible Hematoxicity[83]	Moderate[40]	Low[83]	Low[83]	Moderate[83]
X	X		**Lilly Miller Moss Out! Lawn Granules**	Ferrous Sulfate Monohydrate	Possible[85,86]	Suggestive[85] Insufficiently Studied[86]	Insufficiently Studied	Possible[86]	Insufficiently Studied	Possible[85]	Eye Irritant[85,86]	Possible Mammalian Toxicity[112] Environmetal Persistant[112]	Low[87]	Insufficently Studied	Low to Moderate[87]	Not Likely
X	X	X	**Miracle Gro Garden Weed Preventer**	Trifluralin	Possible[89,90]	Likely[53]	Probable[5,46]	Insufficiently Studied	Yes[47]	Yes[48]	Yes[48]	Possible Hematotoxicity[89]	Low to Moderate[89]	Low (Bees)/ Moderate (Earthworms)[89]	Yes[48]	Yes[88]
	X	X	**Monterey Remuda Concentrated Herbicide**	Glyphosate, isopropylamine salt	Yes[21]	Yes[22]	Yes[23]	Yes[23]	Yes[24]	Yes[25]	Yes[25a]		Yes[27]	Yes[28]	Yes[26]	Yes[91]
X	X		**Natria Natural Weed and Grass Killer**	Ammoniated soap of fatty acids	Insufficiently Studied	Not Likely	Not Likely	Insufficiently Studied	Not Likely	Possible (at high doses) [55]	Mild[55]	Possible Mutagenicity (at high doses)[55]	Low[93]	Moderate[93]	Yes[55]	Not Likely
				Maleic Hydrazide	Not Likely	Insufficiently Studied	Insufficiently Studied	Potential[92]	Yes[92]	Not Likely	Not a Sensetizer[41] Skin, Eye, Respiratory Irritant[92]	Possible Mutagenicity (genetic mutation)[92]	Low[92]	Low[92]	Yes[42]	Not Likely

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X	X	X	**Ortho Weed B-Gon**	2,4-D Dimethylamine Salt	Yes[4]	Yes[4]	Probable[5]	Yes[7]	Yes[7]	Yes[6]	Yes[4]		Yes[4]	Yes[4]	Yes[8]	Yes[4,7,63]
				Dicamba Dimethylamine Salt	Yes[3]	Suggestive[9]	Potential[65]	Yes[10]	Yes[11]	Yes[11]	Yes[10]		Yes[12]	Low to Moderate[10,66]	Yes[10]	Yes[11,63,64]
				Quinclorac	Low[13b]	Insufficiently Studied	Insufficiently Studied	Possible [79]	Possible [79]	Low[13b]	Yes[13]		Low[79]	Low[79]	Yes[13a]	Yes[13a]
X	X	X	**Pennington UltraGreen Crabgrass Preventer**	2,4-D, dimethylamine salt	Yes[4]	Yes[4]	Probable[5]	Yes[7]	Yes[7]	Yes[6]	Yes[4]		Yes[4]	Yes[4]	Yes[8]	Yes[4,7,63]
				Dicamba, potassium salt	Yes[3]	Suggestive[9]	Potential[65]	Yes[10]	Yes[11]	Yes[11]	Possible[10]		Yes[12]	Low to Moderate[10,66]	Low to Moderate[10]	Yes[11,63,64]
				Mecoprop-p, potassium salt	Yes[16]	Yes[14]	Insufficiently Studied	Yes[16]	Yes[16]	Yes[17]	Yes[16]	Acute Toxicity[71]	Yes[12b]	Insufficiently Studied	Yes[18]	Yes[71]
X	X		**Pennington Weed and Feed Fertilizer**	Prodiamine	Yes[49]	Probable[43]	Suggestive[43, 50]	Possible[49]	Yes[43]	Possible[49]	Skin/Eye Irritant, Possible Respiratory Irritant [94]	Possible Thyroid Toxicity [94]	Low[94]	Low[94]	Moderate[94]	Not Likely
X	X	X	**Preen Extended Control**	Trifluralin	Possible[89,90]	Likely[53]	Probable[5,46]	Insufficiently Studied	Yes[47]	Yes[48]	Yes[48]	Possible Hematotoxicity[89]	Low to Moderate[89]	Low (Bees)/ Moderate (Earthworms)[89]	Yes[48]	Yes[88]
				Isoxaben	Possible[70]	Suggestive[14]	Insufficiently Studied	Yes[15]	Not Likely	Insufficiently Studied	Not Likely[70]	Yes[15] (cariovasular)	Yes[12a]	Low[70]	Moderate[70]	Yes[68]
X	X	X	**Preen Lawn Weed Control**	2,4-D, dimethylamine salt	Yes[4]	Yes[4]	Probable[5]	Yes[7]	Yes[7]	Yes[6]	Yes[4]		Yes[4]	Yes[4]	Yes[8]	Yes[4,7,63]
				Dicamba, potassium salt	Yes[3]	Suggestive[9]	Potential[65]	Yes[10]	Yes[11]	Yes[11]	Possible[10]		Yes[12]	Low to Moderate[10,66]	Low to Moderate[10]	Yes[11,63,64]
X	X	X	**Preen Weed Preventer**	Trifluralin	Possible[89,90]	Likely[53]	Probable[5,46]	Insufficiently Studied	Yes[47]	Yes[48]	Yes[48]	Possible Hematotoxicity[89]	Low to Moderate[89]	Low (Bees)/ Moderate (Earthworms)[89]	Yes[48]	Yes[88]
	X		**Pulverize Weed, Brush, and Vine Killer**	Ammoniated soap of fatty acids	Insufficiently Studied	Not Likely	Not Likely	Insufficiently Studied	Not Likely	Possible (at high doses) [55]	Mild[55]	Possible Mutagenicity (at high doses)[55]	Low[93]	Moderate[93]	Yes[55]	Not Likely
				Maleic Hydrazide	Not Likely	Insufficiently Studied	Insufficiently Studied	Potential[92]	Yes[92]	Not Likely	Not a Sensetizer[41] Skin, Eye, Respiratory Irritant[92]	Possible Mutagenicity (genetic mutation)[92]	Low[92]	Low[92]	Yes[42]	Not Likely for Parent (Very High Drift Potential for Breakdown Product) [42]
	X	X	**RM43 Total Vegetation Control, Weed Killer and Preventer**	Glyphosate, isopropylamine salt	Yes[21]	Yes[22]	Yes[23]	Yes[23]	Yes[24]	Yes[25]	Yes[25a]		Yes[27]	Yes[28]	Yes[26]	Yes[91]
				Imazapyr, isopropylamine salt	Not Likely	Suggestive[96]	Insufficiently Studied	Suggestive[96]	Not Likely	Insufficiently Studied	Yes[32]	Highly Toxic[95]	Low[95]	Yes[33]	Yes[33]	Possible[95]
X	X	X	**Roundup Weed and Grass Killer**	Glyphosate, isopropylamine salt	Yes[21]	Yes[22]	Yes[23]	Yes[23]	Yes[24]	Yes[25]	Yes[25a]		Yes[27]	Yes[28]	Yes[26]	Yes[91]
				Pelargonic acid	Possible[113]	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Skin and Eye Irritant[106]		Insufficiently Studied	Moderate[106]	Moderate to High[103]	Insufficiently Studied

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X	X	X	**Roundup Extended Control Weed and Grass Killer**	Glyphosate, isopropylamine salt	Yes[21]	Yes[22]	Yes[23]	Yes[23]	Yes[24]	Yes[25]	Yes[25a]		Yes[27]	Yes[28]	Yes[26]	Yes[91]
				Pelargonic acid	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Skin and Eye Irritant[106]		Insufficiently Studied	Moderate[106]	Moderate to High[103]	Insufficiently Studied
				Imazapic, ammonium salt	Possible[115]	Not Likely	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Possible[115]	Yes (Irritant)[114]	Possible Chronic Toxicity to Muscles[115]	Low[114]	Low[114]	Moderate[114]	Yes[114]
X	X		**Roundup for Lawns**	MCPA, dimethylamine salt	Possible[119]	Possible[116]	Insufficiently Studied	Yes[117]	Yes[118]	Yes[117]	Yes[118]	Highly Toxic[121] Possible Hypotension[121]	Moderate to High[118]	Moderate[12a]	Moderate[121]	Yes[117,120]
				Quinclorac	Low[13b]	Insufficiently Studied	Insufficiently Studied	Possible [79]	Possible [79]	Low[13b]	Yes[13a]		Low[79]	Low[79]	Yes[13a]	Yes[13a]
				Dicamba, dimethylamine salt	Yes[3]	Suggestive[9]	Potential[65]	Yes[10]	Yes[11]	Yes[11]	Yes[10]		Yes[12]	Low to Moderate[10,66]	Yes[10]	Yes[11,63,64]
				Sulfentrazone	Yes[19]	Not Likely[76]	Insufficiently Studied	Possible[78]	Possible[76]	Yes[19]	Yes[19]	Possible Hematotoxicity[76]	Not Likely[78]	Moderate[78]	Yes[19]	Yes[78]
X	X	X	**Roundup 365 Max Control**	Glyphosate, isopropylamine salt	Yes[21]	Yes[22]	Yes[23]	Yes[23]	Yes[24]	Yes[25]	Yes[25a]		Yes[27]	Yes[28]	Yes[26]	Yes[91]
				Imazapic, ammonium salt	Possible[115]	Not Likely	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Possible[115]	Yes (Irritant)[114]	Possible Chronic Toxicity to Muscles[115]	Low[114]	Low[114]	Moderate[114]	Yes[114]
				Diquat Dibromide	Possible[99]	Not Likely	Insufficiently Studied	Yes[34]	Not Likely	Yes[35]	Yes[36]	Stomach/ Intestine Toxicity[98] Fatal if Inhaled[98]	Yes[34]	Moderate[98]	Yes[36]	Insufficiently Studied
X	X	X	**Roundup Weed Preventer**	Pendimethalin	Yes[97]	Possible[14]	Yes[51]	Yes[3]	Insufficiently Studied	Yes[52]	Yes[53]	Bioaccumulation in Tissue [97]	Moderate[97]	Moderate[97]	Yes[52,54]	Yes[52]
X	X	X	**Scotts Halts Crabgrass and Grassy Weed Preventer**	Pendimethalin	Yes[97]	Possible[14]	Yes[51]	Yes[3]	Insufficiently Studied	Yes[52]	Yes[53]	Bioaccumulation in Tissue [97]	Moderate[97]	Moderate[97]	Yes[52,54]	Yes[52]
X	X	X	**Scotts Turf Builder Weed and Feed Lawn Fertilizer**	2,4-D, dimethylamine salt	Yes[4]	Yes[4]	Probable[5]	Yes[7]	Yes[7]	Yes[6]	Yes[4]		Yes[4]	Yes[4]	Yes[8]	Yes[4,7,63]
				Mecoprop-p, potassium salt	Yes[16]	Yes[14]	Insufficiently Studied	Yes[16]	Yes[16]	Yes[17]	Yes[16]	Acute Toxicity[71]	Yes[12b]	Insufficiently Studied	Yes[18]	Yes[71]
X		X	**Scotts WeedEx**	Pendimethalin	Yes[97]	Possible[14]	Yes[51]	Yes[3]	Insufficiently Studied	Yes[52]	Yes[53]	Bioaccumulation in Tissue [97]	Moderate[97]	Moderate[97]	Yes[52,54]	Yes[52]
X	X	X	**Spectracide Weed Stop for Lawns**	2,4-D, dimethylamine salt	Yes[4]	Yes[4]	Probable[5]	Yes[7]	Yes[7]	Yes[6]	Yes[4]		Yes[4]	Yes[4]	Yes[8]	Yes[4,7,63]
				Dicamba, dimethylamine salt	Yes[3]	Suggestive[9]	Potential[65]	Yes[10]	Yes[11]	Yes[11]	Yes[10]		Yes[12]	Low to Moderate[10,66]	Yes[10]	Yes[11,63,64]
				Sulfentrazone	Yes[19]	Not Likely	Insufficiently Studied	Possible[78]	Possible[76]	Yes[19]	Yes[19]	Possible Hematotoxicity[76]	Not Likely[78]	Moderate[78]	Yes[19]	Yes[78]
				Quinclorac	Low[13b]	Insufficiently Studied	Insufficiently Studied	Possible [79]	Possible [79]	Low[13b]	Yes[13]		Low[79]	Low[79]	Yes[13a]	Yes[13a]

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X	X	X	**Spectracide Weed and Grass Killer**	Dicamba, dimethylamine salt	Yes[3]	Suggestive[9]	Potential[65]	Yes[10]	Yes[11]	Yes[11]	Possible[10]		Yes[12]	Low to Moderate[10,66]	Low to Moderate[10]	Yes[11,63,64]
				Diquat Dibromide	Possible[99]	Not Likely	Insufficiently Studied	Yes[34]	Not Likely	Yes[35]	Yes[36]	Stomach/ Intestine Toxicity[98] Fatal if Inhaled[98]	Yes[34]	Moderate[98]	Yes[36]	Insufficiently Studied
				Fluazifop-p-butyl	Possible[37]	Insufficiently Studied	Insufficiently Studied	Yes[37]	Insufficiently Studied	Possible[37]	No[37]	Probable Spleen Toxicity[100] May Cause Possible Cateracts[100]	Moderate[100]	Low[100]	Yes[37]	Low[100]
X	X	X	**Spectracide Weed and Grass Killer - Extended Control**	Dicamba, dimethylamine salt	Yes[3]	Suggestive[9]	Potential[65]	Yes[10]	Yes[11]	Yes[11]	Yes[10]		Yes[12]	Low to Moderate[10,66]	Yes[10]	Yes[11,63,64]
				Diquat Dibromide	Possible[99]	Not Likely	Insufficiently Studied	Yes[34]	Not Likely	Yes[35]	Yes[36]	Stomach/ Intestine Toxicity[98] Fatal if Inhaled[98]	Yes[34]	Moderate[98]	Yes[36]	Insufficiently Studied
				Fluazifop-p-butyl	Possible[37]	Insufficiently Studied	Insufficiently Studied	Possible[37]	Insufficiently Studied	Yes[37]	No[37]	Probable Spleen Toxicity[100] May Cause Cateracts[100]	Moderate[100]	Low[100]	Yes[37]	Low[100]
				Oxyfluorfen	Yes[38]	Possible[39]	Insufficiently Studied	Yes[38]	Not Likely	Yes[38]	Yes[38]	Possible Spleen Toxicity[101]	Moderate[101]	Low[101]	Yes[38]	Insufficiently Studied
X		X	**Sta-Green Crab-Ex**	Trifluralin	Possible[89,90]	Likely[53]	Probable[5,46]	Insufficiently Studied	Yes[47]	Yes[48]	Yes[48]	Possible Hematotoxicity[89]	Low to Moderate[89]	Low (Bees)/ Moderate (Earthworms)[89]	Yes[48]	Yes[88]
X		X	**Sta-Green Weed and Feed**	2,4-D, dimethylamine salt	Yes[4]	Yes[4]	Probable[5]	Yes[7]	Yes[7]	Yes[6]	Yes[4]		Yes[4]	Yes[4]	Yes[8]	Yes[4,7,63]
				Mecoprop-p, potassium salt	Yes[16]	Yes[14]	Insufficiently Studied	Yes[16]	Yes[16]	Yes[17]	Yes[16]	Acute Toxicity[71]	Yes[12b]	Insufficiently Studied	Yes[18]	Yes[71]
				Dicamba	Yes[3]	Suggestive[9]	Potential[65]	Yes[10]	Yes[11]	Yes[11]	Possible[10]		Yes[12]	Low to Moderate[10,66]	Low to Moderate[10]	Yes[11,63,64]
X			**TurfGro Preemergent Crabgrass Control**	Dithiopyr	Not Likely	Not Likely	Yes[30]	Probable[73]	Insufficiently Studied	Not Likely	Possible Mild Irritant[73]	Suggestive Mammalian Toxicity [73]	Not Likely[73]	Yes[31]	Yes[30]	Yes[72]
	X	X	**Vigoro All Season Weed and Feed Lawn Fertilizer**	2,4-D, dimethylamine salt	Yes[4]	Yes4	Probable[5]	Yes[7]	Yes[7]	Yes[6]	Yes[4]		Yes[4]	Yes[4]	Yes[8]	Yes[4,7,63]
				Mecoprop-p, potassium salt	Yes[16]	Yes[14]	Insufficiently Studied	Yes[16]	Yes[16]	Yes[17]	Yes[16]	Acute Toxicity[71]	Yes[12b]	Insufficiently Studied	Yes[18]	Yes[71]

* See Pesticide Action Network List of Highly Hazardous Pesticides

Analysis by Akayla Bracey and Beyond Pesticides Gateway on Pesticide Hazards

Conventional Herbicides

By Active Ingredient

Active Ingredients		Human Health Effects								Animal & Environmental Effects			
	Classified as a Highly Hazardous Pesticide*	Birth/ Developmental Abnormailites	Cancer	Endocrine Disruption	Kidney/Liver Damage	Neurotoxicity	Reproductive/ Sexual Dysfunction	Skin, Eye, Mucosal Sensitizer/Irritant	Other	Toxic to Birds	Toxic to Bees and Other Beneficials	Toxic to Fish/ Aquatic Organisms	Contamination (groundwater, drift, leaching)
2,4-D, dimethylamine salt	X	Yes[4]	Yes[4]	Probable[5]	Yes[7]	Yes[7]	Yes[6]	Yes[4]		Yes[4]	Yes[4]	Yes[8]	Yes[4,7,63]
Alkyl dimethyl benzyl ammonium chloride (ADBAC)		Possible[57]	Not Likely	Suggestive[58c]	Not Likely[62]	Possible[59]	Likely[58]	Yes[29]	Possible Immunotoxicity[56]	Yes[29]	Not Likely	Yes[29]	Not Likely
Ammonium salt of imazaquin		Possible[80]	Suggestive[81]	Suggestive (Thyroid Stimulting) [20]	Not Likely	Possible[82]	Possible[80]	Possible Skin Sensetizer[80]		Low to Moderate[80]	Low to Moderate[80]	Low[80]	Not Likely
Dicamba, dimethylamine salt		Yes[3]	Suggestive[9]	Potential[65]	Yes[10]	Yes[11]	Yes[11]	Yes[10]		Yes[12]	Low to Moderate[10,66]	Yes[10]	Yes[11,63,64]
Dichlorprop-p	X	Yes[3]	Suggestive[84]	Insufficiently Studied	Possible[83]	Not Likely	Yes[83]	Yes[40]	Suggestive Moderate Mammalian Toxicity [83] Possible Hematoxicity[83]	Moderate[40]	Low[83]	Low[83]	Moderate[83]
Diquat Dibromide	X	Possible[99]	Not Likely	Insufficiently Studied	Yes[34]	Not Likely	Yes[35]	Yes[36]	Stomach/Intestine Toxicity[98] Fatal if Inhaled[98]	Yes[34]	Moderate[98]	Yes[36]	Insufficiently Studied
Dithiopyr		Not Likely	Not Likely	Yes[30]	Probable[73]	Insufficiently Studied	Not Likely	Possible Mild Irritant[73]	Suggestive Mammalian Toxicity [73]	Not Likely[73]	Yes[31]	Yes[30]	Yes[72]
Ferric (Iron) HEDTA		Low[74]	Insufficiently Studied	Not Likely[74]	Insufficiently Studied	Not Likely[74]	Possible[74]	Not a Sensitizer/ Severe Eye Irritant[74]	Low Mutagenic Potential[74]	Not Likely[74]	Moderate (worms)[74]	Yes (aquatic organisms)[44]	Insufficiently Studied
Ferrous Sulfate Monohydrate		Possible[85,86]	Suggestive[85] Insufficiently Studied[86]	Insufficiently Studied	Possible[86]	Insufficiently Studied	Possible[85]	Eye Irritant[85,86]		Low[87]	Insufficiently Studied	Low to Moderate[87]	Not Likely
Fluazifop-p-butyl	X	Possible[37]	Insufficiently Studied	Insufficiently Studied	Yes[37]	Insufficiently Studied	Possible[37]	No[37]	Probable Spleen Toxicity [100] Possible Caterats[100]	Moderate[100]	Low[100]	Yes[37]	Low[100]
Glyphosate in the form of its isopropylamine salt	X	Yes[21]	Yes[22]	Yes[23]	Yes[23]	Yes[24]	Yes[25]	Yes[25a]		Yes[27]	Yes[28]	Yes[26]	Yes[91]
Imazapic, ammonium salt		Possible[115]	Not Likely	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Yes (Irritant)[114]	Possible Chronic Toxicity to Muscles[115]		Low[114]	Low[114]	Moderate[114]	Yes[114]
Imazapyr, isopropylamine salt		Not Likely	Suggestive[96]	Insufficiently Studied	Suggestive[96]	Not Likely	Insufficiently Studied	Yes[32]	High Acute Toxicity[95]	Low[95]	Yes[33]	Yes[33]	Possible[95]
Isoxaben		Possible[70]	Suggestive[14]	Insufficiently Studied	Yes[15]	Not Likely	Insufficiently Studied	Not Likely[70]	Yes[15] (cariovasular)	Yes[12a]	Low[70]	Moderate[70]	Yes[68]
Maleic Hydrazide		Not Likely	Insufficiently Studied	Insufficiently Studied	Potential[92]	Yes[92]	Not Likely	Not a Sensetizer[41] Skin, Eye, Respiratory Irritant[92]	Possible Mutagenicity (genetic mutation)[92]	Low[92]	Low[92]	Yes[42]	Breakdown Product Drift Prone[42]
MCPA, dimethylamine salt		Possible[119]	Possible[116]	Insufficiently Studied	Yes[117]	Yes[118]	Yes[117]	Yes[118]	Highly Toxic[121] Possible Hypotension[121]	Moderate to High[118]	Moderate[12a]	Moderate[121]	Yes[117,120]

Analysis by Akayla Bracey and Beyond Pesticides Gateway on Pesticide Hazards

Mecoprop-p, potassium salt	X	Yes[16]	Yes[14]	Insufficiently Studied	Yes[16]	Yes[16]	Yes[17]	Yes[16]	Acute Toxicity[71]	Yes[12b]	Insufficiently Studied	Yes[18]	Yes[71]
Oxyfluorfen	X	Yes[38]	Possible[39]	Insufficiently Studied	Yes[38]	Not Likely	Yes[38]	Yes[38]	Possible Spleen Toxicity [101]	Moderate[101]	Low[101]	Yes[38]	Insufficiently Studied
Pendimethalin	X	Yes[97]	Possible[14]	Yes[51]	Yes[3]	Insufficiently Studied	Yes[52]	Yes[53]	Bioaccumulation in Tissue [97]	Moderate[97]	Moderate[97]	Yes[52,54]	Yes[52]
Prodiamine		Yes[49]	Probable[43]	Suggestive[43, 50]	Possible[94]	Yes[43]	Possible[49]	Skin/Eye Irritant[94] Possible Respiratory Irritant [94]	Possible Thyroid Toxicity [94]	Low[94]	Low[94]	Moderate[94]	Not Likely
Quinclorac		Low[13b]	Insufficiently Studied	Insufficiently Studied	Possible [79]	Possible [79]	Low[13b]	Yes[13a]		Low[79]	Low[79]	Yes[13a]	Yes[13a]
Sulfentrazone		Yes[19]	Not Likely[76]	Insufficiently Studied	Possible[78]	Possible[76]	Yes[19]	Yes[19]	Possible Hematotoxicity[76]	Not Likely[78]	Moderate[78]	Yes[19]	Yes[78]
Triclopyr Triethylamine Salt		Yes[1]	Not Likely	Suggestive[60]	Yes[3]	Not Likely	Yes[1]	Yes[2]		Low[2,61]	Low[2]	Yes[2]	Yes[1,2]
Trifluralin	X	Possible[89,90]	Likely[53]	Probable[5,46]	Insufficiently Studied	Yes[47]	Yes[48]	Yes[48]	Possible Hematotoxicity[89]	Low to Moderate[89]	Low (Bees)/ Moderate (Earthworms)[89]	Yes[48]	Yes[88]

* See Pesticide Action Network List of Highly Hazardous Pesticides

Analysis by Akayla Bracey and Beyond Pesticides Gateway on Pesticide Hazards

Organic and Least-Toxic Herbicides

By Product

Retailer		OMRI Approved or EPA 25(b) Exempt**	Product Name	Active Ingredients	Human Health Effects								Animal & Environmental Effects			
Lowe's	Home Depot				Birth/ Developmental Abnormailites	Cancer	Endocrine Disruption	Kidney/Liver Damage	Neurotoxicity	Reproductive/ Sexual Dysfunction	Skin, Eye, Mucosal Sensitizer/Irritant	Other	Toxic to Birds	Toxic to Bees and Other Beneficials	Toxic to Fish/ Aquatic Organisms	Contamination (groundwater, drift, leaching)
X	X	OMRI	Avengers Weed Killer	d-Limonene	Possible[104]	Not Likely	Not Likely	Insufficiently Studied	Insufficiently Studied	Possible[104]	Yes[104]		Insufficiently Studied	Low (Bees)[104] Moderate (Eartthworms)[104]	Moderate[104]	Not Likely
X	X	OMRI	Bonide BurnOut Weed and Grass Killer	Caprylic Acid	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied		Non-Toxic	Non-Toxic	Non-Toxic	Insufficiently Studied
				Capric Acid	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied		Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied
	X	OMRI	Bonide Deadweed Brew	Caprylic Acid	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied		Non-Toxic	Non-Toxic	Non-Toxic	Insufficiently Studied
				Capric Acid	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied		Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied
	X		Bonide LawnWeed Brew	Ferric (Iron) HEDTA	Low[74]	Insufficiently Studied	Not Likely[74]	Insufficiently Studied	Not Likely[74]	Possible[74]	Severe Eye Irritant/ Not a Sensitizer[74]	Low Mutagenic Potential[74]	Not Likely[74]	Moderate (worms)[74]	Yes (aquatic organisms)[44]	Insufficiently Studied
	X		Bonide Weed Beater FE	Ferric (Iron) HEDTA	Low[74]	Insufficiently Studied	Not Likely[74]	Insufficiently Studied	Not Likely[74]	Possible[74]	Severe Eye Irritant/ Not a Sensitizer[74]	Low Mutagenic Potential[74]	Not Likely[74]	Moderate (worms)[74]	Yes (aquatic organisms)[44]	Insufficiently Studied
	X	EPA 25(b)	Concern All Natural Weed Prevention Plus	Corn Gluten Meal	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely		Non-Toxic	Non-Toxic	Non-Toxic	Insufficiently Studied
	X	EPA 25(b)	Dr. Earth's Final Stop Weed and Grass Killer	Rosemary Oil	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Possible Irritant[107]	May cause headaches and nausea[107]	Low[107]	Low[107]	Low[107]	Insufficiently Studied
				Cinnamon Oil	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Yes[109]	Mutagenic Potential (Genotoxic)[109] Toxic in Large Doses[109] Possible Gastrointestinal Inflammation[109]	Low[109]	Low[109]	Low[109]	Low[109]
				Clove Oil	Insufficiently Studied	Not Likely	Insufficiently Studied	Insufficiently Studied	Potential[123]	Yes[123]	Yes[123]	At high doses: Cytotoxic, Acute Respiratory Distress, Central Nervous System Depression[123]	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Yes(drift) [124]
				Sesame Oil	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied		Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied
				Thyme Oil	Possible[122]	Not Likely	Not Likely	Possible[122]	Insufficiently Studied	Suggestive[122]	Yes[122]	Moderate Mammal Acute Toxicity[122] Possible Gastrointestinal Toxicity[122] Possible Genotoxicity[122]	Low[122]	Low to Moderate[122]	Moderate[122]	Low[122]

Analysis by Akayla Bracey and Beyond Pesticides Gateway on Pesticide Hazards

X	X	EPA 25(b)	Earth's Ally Weed and Grass Killer	Acetic Acid	Possible[105]	Not Likely	Insufficiently Studied	Not Likely	Insufficiently Studied	Possible[105]	Yes[102]	Ingestion may cause severe corrosion of the mouth and gastrointestinal tract[105]	Insufficiently Studied	Insufficiently Studied	Moderate[105]	Possible[105]
X		EPA 25(b)	Ecologic Weed and Grass Killer	Rosemary Oil	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Possible Irritant[107]	May cause headaches and nausea[107]	Low[107]	Low[107]	Low[107]	Insufficiently Studied
X				Cinnamon Oil	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Yes[109]	Mutagenic Potential (Genotoxic)[109] Toxic in Large Doses[109] Possible Gastrointestinal Inflammation[109]	Low[109]	Low[109]	Low[109]	Low[109]
X		EPA 25(b)	Ecosmart Weed and Grass Killer	Rosemary Oil	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Possible Irritant[107]	May cause headaches and nausea[107]	Low[107]	Low[107]	Low[107]	Insufficiently Studied
				Sodium Lauryl Sulfate	Insufficiently Studied	Not Likely	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Likely[108]		Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied
	X	OMRI	Green Gobbler 20% Vinegar Ready-to-Use Weed and Grass Killer	Acetic Acid (Vinegar)	Possible[105]	Not Likely	Insufficiently Studied	Not Likely	Insufficiently Studied	Possible[105]	Yes[102]	Ingestion may cause severe corrosion of the mouth and gastrointestinal tract[105]	Insufficiently Studied	Insufficiently Studied	Moderate[105]	Possible[105]
X	X	OMRI	Green It Corn Gluten Weed Preventer	Corn Gluten Meal	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely		Non-Toxic	Non-Toxic	Non-Toxic	Insufficiently Studied
	X	OMRI	Harris 20% Vinegar Weed Killer	Acetic Acid (Vinegar)	Possible[105]	Not Likely	Insufficiently Studied	Not Likely	Insufficiently Studied	Possible[105]	Yes[102]	Ingestion may cause severe corrosion of the mouth and gastrointestinal tract[105]	Insufficiently Studied	Insufficiently Studied	Moderate[105]	Possible[105]
	X	EPA 25(b)	Natural Armour Weed and Grass Killer	Clove Oil	Insufficiently Studied	Not Likely	Insufficiently Studied	Insufficiently Studied	Potential[123]	Yes[123]	Yes[123]	At high doses: Cytotoxic, Acute Respiratory Distress, Central Nervous System Depression[123]	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Yes(drift) [124]
X	X	OMRI	Ortho GroundClear Weed & Grass Killer	Ammonium Nonanoate	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Yes (Eye/ Skin Irritant), Not a Sensitizer[110]	Possible Genotoxicity (at high doses)[110]	Low[111]	Low[111]	Yes[111]	Not Likely
	X		Pulverize Non-Selective Weed and Grass Killer	Ammoniated Soap of Fatty Acis	Insufficiently Studied	Not Likely	Not Likely	Insufficiently Studied	Not Likely	Possible (at high doses)[55]	Mild[55]	Possible Mutagenicity (at high doses)[55]	Low[93]	Moderate[93]	Yes[55]	Not Likely
	X	EPA 25(b)	Safer Brand Weed Prevention Plus Pre-Emergent Herbicide Control	Corn Gluten Meal	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely		Non-Toxic	Insufficiently Studied	Non-Toxic	Insufficiently Studied

**Approved by the Organic Materials Review Institute for use in organic farming and gardening or classified by the EPA as 25(b) Exempt, ie.e. minimal risk to human health

Analysis by Akayla Bracey and Beyond Pesticides Gateway on Pesticide Hazards

Organic and Least-Toxic Herbicides

By Active Ingredient

Active Ingredients	Human Health Effects								Animal & Environmental Effects			
	Birth/ Developmental Abnormailites	Cancer	Endocrine Disruption	Kidney/Liver Damage	Neurotoxicity	Reproductive/ Sexual Dysfunction	Skin, Eye, Mucosal Sensitizer/ Irritant	Other	Toxic to Birds	Toxic to Bees and Other Beneficials	Toxic to Fish/ Aquatic Organisms	Contamination (groundwater, drift, leaching)
Acetic Acid (Vinegar)	Possible[105]	Not Likely	Insufficiently Studied	Not Likely	Insufficiently Studied	Possible[105]	Yes[102]	Ingestion may cause severe corrosion of the mouth and gastrointestinal tract[105]	Insufficiently Studied	Insufficiently Studied	Moderate[105]	Possible[105]
Ammoniated soap of fatty acids	Insufficiently Studied	Not Likely	Not Likely	Insufficiently Studied	Not Likely	Possible (at high doses)[55]	Mild[55]	Possible Mutagenicity (at high doses)[55]	Low[93]	Moderate[93]	Yes[55]	Not Likely
Ammonium Nonanoate	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Yes (Eye/ Skin Irritant), Not a Sensitizer[110]	Possible Genotoxicity (at high doses)[110]	Low[111]	Low[111]	Yes[111]	Not Likely
Capric Acid	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied		Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied
Caprylic acid	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied		Non-Toxic	Non-Toxic	Non-Toxic	Insufficiently Studied
Cinnamon Oil	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Yes[109]	Mutagenic Potential (Genotoxic)[109] Toxic in Large Doses[109] Possible Gastrointestinal Inflammation[109]	Low[109]	Low[109]	Low[109]	Low[109]
Clove Oil	Insufficiently Studied	Not Likely	Insufficiently Studied	Insufficiently Studied	Potential[123]	Yes[123]	Yes[123]	At high doses: Cytotoxic, Acute Respiratory Distress, Central Nervous System Depression[123]	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Yes(drift) [124]
Corn glueton Meal	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely		Non-Toxic	Insufficiently Studied	Non-Toxic	Insufficiently Studied
d-Limonene	Possible[104]	Not Likely	Not Likely	Insufficiently Studied	Insufficiently Studied	Possible[104]	Yes[104]			Low (Bees)[104] Moderate (Eartthworms)[104]	Moderate[104]	Not Likely
Pelargonic Acid	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Skin and Eye Irritant[106]		Insufficiently Studied	Moderate[106]	Moderate to High[103]	Insufficiently Studied
Rosemary Oil	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Possible Irritant[107]	May cause headaches and nausea[107]	Low[107]	Low[107]	Low[107]	Insufficiently Studied
Sesame Oil	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied		Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied
Sodium Lauryl Sulfate	Insufficiently Studied	Not Likely	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Likely[108]		Insufficiently Studied	Insufficiently Studied	Insufficiently Studied	Insufficiently Studied
Thyme Oil	Possible[122]	Not Likely	Not Likely	Possible[122]	Insufficiently Studied	Suggestive[122]	Yes[122]	Moderate Mammal Acute Toxicity[122] Possible Gastrointestinal Toxicity[122] Possible Genotoxicity[122]	Low[122]	Low to Moderate[122]	Moderate[122]	Low[122]

Analysis by Akayla Bracey and Beyond Pesticides Gateway on Pesticide Hazards

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Methods

Friends of the Earth identified products sold by each store by searching their online catalogues, searching for products online, and by visiting local stores in San Francisco and Los Angeles. We also gave each company a chance to review the lists and make corrections. Beyond Pesticides provided the toxicity analysis for each product and active ingredient based on the available science.

BEYOND PESTICIDES

About Beyond Pesticides

Beyond Pesticides is a national, grassroots, membership organization, which works with allies in protecting public health and the environment to lead the transition to a world free of toxic pesticides. The founders, who established Beyond Pesticides as a nonprofit membership organization in 1981, felt that without the existence of such an organized, national network, local, state, and national pesticide policy would become, under chemical industry pressure, increasingly unresponsive to public health and environmental concerns. Beyond Pesticides believes that people must have a voice in decisions that affect them directly, and decisions should not be made for us by chemical companies or by decisionmakers who either do not have all of the facts or refuse to consider them.

Friends of the Earth

About Friends of the Earth

Friends of the Earth United States, founded by David Brower in 1969, is the U.S. voice of the world's largest federation of grassroots environmental groups, with a presence in 75 countries. Friends of the Earth works to defend the environment and champion a more healthy and just world. We have provided crucial leadership in campaigns resulting in landmark environmental laws, precedent-setting legal victories and groundbreaking reforms of domestic and international regulatory, corporate and financial institution policies.
Visit www.foe.org to learn more.

Any errors or omissions in this brief are the responsibility of Beyond Pesticides and Friends of the Earth U.S.

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