Herbicide Poisoning

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
Acetochlor	2,148–2,950 mg/kg	Dog, 1 year 12 mg/kg/day	Rabbit 4,166 mg/kg	LC_{50} 5 day Bobwhite quail and Mallard duck 5,620 mg/kg	LC_{50} 96 hours Rainbow trout 0.45 mg/L	Skin–mild Eye–mild
Acifluorfen	1,300 mg/kg (F)	Rat, 2 years 180 ppm	Rabbit >2,000 mg/kg	LC_{50} 8 day Mallard duck >10,000 mg/kg	LC_{50} 96 hours Rainbow trout 31 mg/L	Skin–moderate Eye–severe
Acrolein	29 mg/kg	Rat, 13 weeks 150 mg/L in drinking water	Rabbit 231 mg/kg	LD_{50} (oral) Bobwhite quail 19 mg/kg Mallard duck 9.1 mg/kg	LC_{50} 24 hours Bluegill and Rainbow trout 0.024 mg/L	Skin–severe Eye–severe
Alachlor	930–1,200 mg/kg	Dog, 90 days < 200 mg/kg/day	Rabbit 13,300 mg/kg			Skin–mild
Ametryn	1,009–1,405 mg/kg	Rat reproduction, 50 ppm	Rabbit 2,020 mg/kg	LD_{50} (oral) Birds >2,250 mg/kg LC_{50} 5 day Birds >5,620 ppm		Skin–irritation Guinea pig–dermal sensitization Eye–mild
alpha-Metolachlor	2,675–2,952 mg/kg	Dog, 90 days 0.0125 mg/kg/day	Rat 2,020 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard	LC_{50} 96 hours Bluegill and	Skin–slight Eye–mild

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
				duck >10,000 ppm	Rainbow trout 3.9–10 ppm	
Atrazine	2,000–3,080 mg/kg	Dog, 1 year 150 ppm Rat, 2 years 10 ppm	Rabbit 7,500 mg/kg	LC_{50} 8 day Mallard duck >10,000 ppm in diet	LC_{50} 96 hours Rainbow trout 8.8 mg/L	Skin–slight
Amitrole	4,080 mg/kg (M)	Rat, 13 weeks 2 mg/kg/day	Rat >5,000 mg/kg	LD_{50} Mallard duck 2,000 mg/kg		Skin–mild Eye–mild
Ammonium sulfamate	3,900 mg/kg	Rat, 105 days 10,000 mg/kg/day		LD_{50} Bobwhite quail 3,000 mg/kg	LC_{50} 48 hours Crucian carp 1,000–2,000 mg/L	Skin–none
Bensulfron methyl	>5,000 mg/kg	Rat, dog, 2 years 750 ppm in diet	Rat >2,000 mg/kg		LC_{50} 96 hours Bluegill and Rainbow trout >150 ppm	Skin–none Eye–serious
Bensulide[c]	271–770 mg/kg	Dog, 90 days 12.5 mg/kg/day	Rabbit 3,950 mg/kg	LD_{50} Bobwhite quail 3 weeks 50 mg/kg, poor hatchability	LC_{50} 96 hours Bluegill 1.4 mg/L Rainbow trout 0.7 mg/L	Eye–none

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
Bentazon	1,100 mg/kg (cat 500 mg/kg)	Rat, 90 days 3.5 mg/kg/day Dog, 90 days 7.5 mg/kg/day	Rat >2,500 mg/kg	LD_{50} Japanese quail 720 mg/kg Mallard duck 2,000 mg/kg	LC_{50} 96 hours Bluegill 616 mg/L Rainbow trout 1,060 mg/L	Slight irritant
Bispyribac sodium		Rat, 2 years 1.1 mg/kg/day (M) 1.4 mg/kg/day (F)		LC_{50} Bobwhite quail and Mallard duck >5,620 ppm	LC_{50} 96 hours Bluegill and Rainbow trout >100 ppm	Skin–minor Eye–minor
Borax	2,000–6,000 mg/kg					
Bromacil	5,200 mg/kg	Rat, dog, 2 years 250 mg/kg/day	Rabbit >5,000 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard duck >10,000 mg/kg	LC_{50} 48 hours Bluegill 71 mg/L Rainbow trout 56 mg/L	Skin–irritating Eye–irritating
Bromoxynil	190–779 mg/kg	Rat, 90 days 50 mg/kg/day	Rabbit >2,000 mg/kg	Acute LD_{50} Bobwhite quail 100 mg/kg Mallard duck 200 mg/kg	LC_{50} 96 hours Rainbow trout 0.05 mg/L	Skin–none Eye–none
Butachlor[c]	2,000–3,300 mg/kg	Rabbits maternal and fetal	Rat >13.3 g/kg			Skin–none Eye–moderate

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
		effects, 50 mg/kg/day				Guinea pig–dermal sensitization
Butylate[c]	>5,431 mg/kg (M) 4,659 mg/kg (F)	Rat, 2 years 20 mg/kg/day Dog, 1 year 25 mg/kg/day	Rabbit >4,640 mg/kg	LC_{50} 8 day Bobwhite quail 40,000 mg/kg Mallard duck 46,400 ppm in diet	LC_{50} 96 hours Bluegill 6.9 mg/L Rainbow trout 4.2 mg/L	Skin–moderate Eye–mild
Carfentrazone ethyl	>5,000 mg/kg	Rat, 2 years 9 mg/kg/day (M) 3 mg/kg/day (F)	Rat >5,000 mg/kg	LC_{50} Bobwhite quail and Mallard duck >5,620 ppm	LC_{50} 96 hours Bluegill 2 ppm Rainbow trout 16 ppm	Skin–none to slight Eye–minimum
Chloramben	5,620 mg/kg		Rabbit >3,160 mg/kg	LC_{50} 8 day Mallard duck >4,640 mg/kg	Not toxic to fish	Skin–mild Eye–mild
Chlorotoluron	>10,000 mg/kg				LC_{50} 96 hours Rainbow trout >100 mg/L	
Chlorpropham	4,100–7,000 mg/kg	Rat, dog, 2 years 100–		LD_{50} 8 day Mallard duck	LC_{50} 48 hours	Skin–moderate

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
		350 mg/kg/day		>2,000 mg/kg	Bluegill 6.3–6.8 mg/L Rainbow trout 3–6 mg/L	Eye–moderate
Chlorsulfuron	5,545 mg/kg (M) 6,293 mg/kg (F)	Rat, 2 years 100 ppm in diet	Rabbit >3,400 mg/kg	LC_{50} 8 day Mallard duck >5,000 mg/kg	LC_{50} 96 hours Rainbow trout >250 mg/L	Skin–none Eye–mild
Chlorthal dimethyl	3,000–12,000 mg/kg	Rat, 2 years < 50 mg/kg/day	Rabbit >2,000 mg/kg	LD_{50} young Bobwhite quail 5,500 mg/kg	Not toxic to fish	Skin–none Eye–mild
Clethodim	1,630 mg/kg (M) 1,360 mg/kg (F)	Dog, 1 year >1 mg/kg/day	Rabbit >5,000 mg/kg	LC_{50} 8 day Bobwhite quail 4,270 ppm Mallard duck 3,978 ppm in diet	LC_{50} Bluegill 13 ppm Rainbow trout 18 ppm	Skin–none Eye–moderate
Clodinafop propargyl	1,392 mg/kg (M) 2,271 mg/kg (F)	Dog, 90 days 0.346 mg/kg/day (M) 1.89 mg/kg/day (F)	Rabbit >2,000 mg/kg	LC_{50} Birds >5,000 ppm	LC_{50} Freshwater fish 0.3 ppm	Skin–none Eye–slight to severe
Clomazone	2,077 mg/kg (M) 1,369 mg/kg (F)	Dog, 1 year < 2.5 mg/kg/day	Rabbit >2,000 mg/kg	LD_{50} 8 day Bobwhite quail and Mallard	LC_{50} 96 hours Bluegill 34 mg/L	Skin–mild Eye–moderate

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
				duck 5,620 ppm in diet	Rainbow trout 19 mg/L	
Clopyralid	>4,300 mg/kg	Rat, 2 years 50 mg/kg/day	Rabbit >2,000 mg/kg	LC_{50} Bobwhite quail and Mallard duck >4,640 ppm in diet	LC_{50} 96 hours Bluegill 125 mg/L Rainbow trout 103.5 mg/L	Skin–mild Eye–severe
Cloransulam-methyl	>5,000 mg/kg	Dog, 1 year 10 mg/kg/day	Rabbit >2,000 mg/kg	LC_{50} 5 day Bobwhite quail and Mallard duck >5,620 ppm	LC_{50} 96 hours Bluegill >154 ppm Rainbow trout >86 ppm	Skin–none Eye–slight
Copper chelate	498 mg/kg		Rabbit >2,000 mg/kg	LC_{50} 8 day Mallard duck >1,000 ppm in diet	LC_{50} 96 hours Bluegill 1.2–7.5 mg/L Rainbow trout < 0.2–4 mg/L	Skin–slight Eye–moderate
Copper sulfate	470 mg/kg		Rabbit >8,000 mg/kg	LD_{50} (oral) Pheasant 1,000 ppm in diet (estimated)	LC_{50} 96 hours Bluegill 4.4–7.3 mg/L Rainbow trout 0.135 mg/L	Skin–moderate Eye–severe

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
Cyanazined	182–334 mg/kg	Dog, 2 years < 225 mg/kg/day	Rabbit >2,000 mg/kg	LD_{50} Bobwhite quail 400 mg/kg Mallard duck >2,000 mg/kg	LC_{50} 96 hours Bluegill 23 mg/L Rainbow trout 9 mg/L	Skin–none Eye–mild
Cycloate	2,000–3,190 mg/kg	Dog, 240 mg/kg/day	Rabbit >4,640 mg/kg	LC_{50} 7 day Bobwhite quail >56,000 mg/kg	LC_{50} 96 hours Rainbow trout 5.6 mg/L	Skin–none Eye–none
Cyhalofop butyl	>5,000 mg/kg	Dog, 46.7 mg/kg/day (M) 45.9 mg/kg/day (F)	Rat >5,000 mg/kg		LC_{50} 96 hours Bluegill >99.2 mg/L Rainbow trout >1.65 mg/L	Skin–none Eye–minimal
Dalapon	6,600–9,330 mg/kg				LC_{50} 96 hours Fish 210–340 mg/L	
Di-allate[d]	340–460 mg/kg				LC_{50} 96 hours Fish 8.2 mg/L	
2,4-D	370–700 mg/kg	Rat, 2 years 50 mg/kg/day	Rabbit >2,000 mg/kg	LC_{50} 8 day Mallard duck >4,640 mg/kg	LC_{50} 96 hours Bluegill >300 mg/L Rainbow trout 800 mg/L	Skin–none Eye–moderate

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
2,4-D dimethyl-amine	949–4,650 mg/kg	Dog, 1 year 1 mg/kg/day	Rabbit >2,000 mg/kg	LC_{50} 8 day Mallard duck >5,600 ppm	LC_{50} 96 hours Bluegill 524 mg/L Rainbow trout 250 mg/L	Skin–minimal Eye–severe
2,4-D isooctyl ester	500–700 mg/kg	Dog, 1 year 1 mg/kg/day	Rabbit >2,000 mg/kg	As for 2,4-D (above) –––		Skin–none Eye–severe
Dazomet	551–646 mg/kg (M) 335–562 mg/kg (F)	Rat, 2 years 1.6 mg/kg/day	Rabbit >2,000 mg/kg	LD_{50} Bobwhite quail 415 ppm in diet	LC_{50} Rainbow trout 2.4–16.2 mg/L	Skin–mild Eye–severe
Dicamba	1,707 mg/kg	Rat, 2 years 125 mg/kg/day Dog, 2 years 50 mg/kg day	Rabbit >2,000 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard duck >4,600 mg/kg	LC_{50} 96 hours Bluegill and Rainbow trout >1,000 mg/L	Skin–moderate Eye–extreme
Dichlobenil	>3,160 mg/kg	Rat, 2 years >20 ppm in diet Pig, 6 months >50 ppm in diet	Rabbit >1,350 mg/kg	LC_{50} 8 day Mallard duck >5,200 ppm in diet	LC_{50} 96 hours Bluegill and Rainbow trout 7 mg/L	Skin–none Eye–mild to moderate
Dichlorprop or 2,4-DP	700 mg/kg (M) 500 mg/kg (F)	Rat, 4 mg/kg	Mouse 1,400 mg/kg	LC_{50} Upland birds, waterfowl	LC_{50} Bluegill 1.1 mg/L	Skin–none Eye–none

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
				>10,000 ppm in diet	Rainbow trout 100–200 mg/L	
Diclosulam	>5,000 mg/kg	Rat, 0.05 mg/kg	Rabbit >2,000 mg/kg		LC_{50} Most sensitive aquatic species 10–100 mg/L	Skin–moderate Eye–moderate
Difenzoquat (methylsulfate)	617 mg/kg (M) 373 mg/kg (F)	Dog, 1 year 20 mg/kg/day	Rabbit >2,000 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard duck 4,640 ppm in diet	LC_{50} 96 hours Bluegill 696 mg/L Rainbow trout 711 mg/L	Skin–mild Eye–mild
Diflufenzopyr	1,600 to >5,000 mg/kg	Dog, 1 year 28 mg/kg/day (M) 26 mg/kg/day (F)	Rabbit >5,000 mg/kg	LC_{50} Mallard duck >5,620 ppm	LC_{50} Bluegill 135 ppm Rainbow trout 106 ppm	Skin–very slight Eye–mild to slight
Dimethenamid	429–1,293 mg/kg	Dog, 1 year 50–250 ppm in diet	Rabbit >2,000 mg/kg	LC_{50} Bobwhite quail and Mallard duck >5,620 ppm in diet	LC_{50} Bluegill 6.4 mg/L Rainbow trout 2.6 mg/L	Skin–mild Eye–moderate
Dinoterb	25 mg/kg			LC_{50} Partridges 3–5 ppm in	Toxic to fish	

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
				diet		
Diquat	231–440 mg/kg	Rat reproduction, 1 mg/kg/day	Rabbit >400 mg/kg	LC_{50} Partridges 270–300 ppm in diet	LC_{50} Fish 80–210 mg/L	Skin–none Eye–mild
Dithiopyr	>5,000 mg/kg	Dog, 1 year < 0.5 mg/kg/day	Rabbit >5,000 mg/kg	LC_{50} Bobwhite quail and Mallard duck >5,260 ppm in diet	LC_{50} Bluegill 0.7 mg/L Rainbow trout 0.5 mg/L	Skin–slight Eye–moderate
Diuron	3,400 mg/kg	Dog, 2 years 25 mg/kg	Rat >2,000 mg/kg	LC_{50} Bobwhite quail 1,730 ppm Mallard duck >5,000 ppm in diet	LC_{50} Bluegill 7.4 mg/L Rainbow trout 4.3 mg/L	Skin–none Eye–mild
DNOC	25–85 mg/kg	Rat, 2 years 0.59 mg/kg/day	Rat 600–2,000 mg/kg Rabbit 1,000 mg/kg	LD_{50} Japanese quail 10–25 mg/kg	LC_{50} Fish 0.2–13 mg/L	Skin–erythema and edema Eyes–corrosive Guinea pig–dermal sensitization
EPTC (s-ethyldipro	1,630 mg/kg	Dog, 90 days 20 mg/kg	Rabbit 2,750–	LC_{50} 7 day Bobwhite quail	LC_{50} Bluegill 27 mg/L	Skin–mild Eye–severe

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
pylthiocarbamate)			5,000 mg/kg	20,000 ppm in diet	Rainbow trout 19 mg/L	
Ethalfluralin	Rat >5,000 mg/kg (dog, cat >200 mg/kg)	Rat, mouse, 90 days 68 mg/kg	Rabbit >2,000 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard duck >5,000 ppm	LC_{50} Bluegill 0.03–0.1 mg/L Rainbow trout 0.037–0.136 mg/L	Skin–slight to moderate Eye–slight
Ethephon	1,600–4,229 mg/kg	Rat, 2 years 375 mg/kg/day Mouse, 78 weeks 4.5 mg/kg/day	Rabbit >5,000 mg/kg	LC_{50} 8 day Mallard duck >10,000 ppm	LC_{50} 96 hours Bluegill 222–300 mg/L Rainbow trout 254–350 mg/L	Skin–corrosive Eye–corrosive
Fenoxaprop[d]	2,357 mg/kg (M) 2,500 mg/kg (F)	Dog, 2 years 0.375 mg/kg/day	Rabbit >1,000 mg/kg	LD_{50} Japanese quail >5,000 mg/kg	LC_{50} Bluegill 3.3 mg/L Rainbow trout 3.4 mg/L	Skin–slight Eye–serious nonreversible corneal opacity
Fenoxaprop-ethyl[d]	4,430 mg/kg	Dog, 2 years 0.9 mg/kg/day	Rat >5,000 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard duck 5,620 ppm	LC_{50} Bluegill 0.31 mg/L Rainbow trout 0.46 mg/L	Skin–slight Eye–moderate
Flamprop-methyl	1,210 mg/kg	Dog, 2 years 10 mg/kg/day	Rat >294 mg/kg	LD_{50} Bobwhite quail 4,640 mg/kg	LC_{50} 96 hours Rainbow trout 4.7	Skin–none Eye–none

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				Mallard duck >1,000 mg/kg	mg/L	
Florasulam	>6,000 mg/kg	Dog, 1 year 5 mg/kg/day	Rabbit >2,000 mg/kg	LD_{50} 14 day Japanese quail 175 mg/kg	LC_{50} 96 hours Rainbow trout >100 mg/L	Skin–none Eye–none
Fluazifop-p-butyl	3,680–4,096 mg/kg (M) 2,451–2,721 mg/kg (F)[e]	Rat, 90 days >10 mg/kg/day	Rabbit >2,400 mg/kg	LD_{50} 5 day Bobwhite quail >4,659 ppm Mallard duck >4,321 ppm	LC_{50} 96 hours Bluegill 0.5 mg/L Rainbow trout 1.4 mg/L	Skin–slight Eye–mild
Flucarbazone-sodium	>5,000 mg/kg	Dog, 1 year 35.9 mg/kg/day	Rat >5,000 mg/kg	NOAEC (reproduction) Mallard duck 233 mg/kg/day	NOAEL (chronic) Rainbow trout 2.75 mg/L	Skin–none Eye–minimal
Flufenacet	1,617 mg/kg (M) 589 mg/kg (F)	Dog, 1 year 1.29 mg/kg/day	Rat >2,000 mg/kg	LC_{50} 5 day Bobwhite quail >5,317 ppm Mallard duck >4,970 ppm	LC_{50} Bluegill 2.26–2.4 ppm Rainbow trout 3.49–5.84 ppm	Skin–none Eye–minimal
Flumetsulam	>5,000 mg/kg		Rat >2,000 mg/kg	LC_{50}	LC_{50}	Skin–none Eye–slight

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				Mallard duck >5,620 ppm	Bluegill >300 ppm Rainbow trout >293 ppm	
Flumiclorac	3,200 to >5,000 mg/kg	Dog, 1 year 100 mg/kg/day	Rat >2,000 mg/kg	LC_{50} Mallard duck >5,620 ppm	LC_{50} 96 hours Bluegill 17.4 mg/L Rainbow trout 1.1 mg/L	Skin–severe Eye–moderate
Fluometuron	>8,000 mg/kg	Rat, 103 weeks 125 mg/kg/day	Rat >2 g/kg Rabbit 10 g/kg		LC_{50} 96 hours Bluegill 96 mg/L Rainbow trout 47 mg/L Crucian carp 17 mg/L	
Fluroxypyr	>5,000 mg/kg	Dog, 1 year 150 mg/kg/day	Rat >2,000 mg/kg	LC_{50} 5 day Mallard duck >5,000 ppm	LC_{50} 96 hours Bluegill 14.3 mg/L Rainbow trout 13.4–100 mg/L	Skin–none Eye–slight
Fluthiacet	>5,000 mg/kg	Dog, 1 year 57.6 mg/kg/day (M) 30.3 mg/kg/day (F)	Rat >2,000 mg/kg	LC_{50} 5 day Bobwhite quail and Mallard duck >5,620 ppm	LC_{50}96 hours Bluegill 140 mcg/L Rainbow trout 43 mcg/L	Skin–none Eye–minimal

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
Foramsulfuron	>3,881 mg/kg	Rat, 2 years 849 mg/kg/day (M) 1,135 mg/kg/day (F)	Rat >5,000 mg/kg	LC_{50} Bobwhite quail and Mallard duck >5,000 ppm		Skin–moderate Eye–mild
Fosamine ammonium	24,000 mg/kg	Rat, 90 days 1,000 mg/kg	Rabbit >1,683 mg/kg	LD_{50} Mallard duck >10,000 ppm in diet	LC_{50} Bluegill 670 mg/L Rainbow trout 1,000 mg/L	Skin–none Eye–moderate to severe
Glufosinate (ammonium salt)	1,510–2,030 mg/kg	Dog, 1 year 5 mg/kg/day	Rat >1,390 mg/kg	LC_{50} 5 day Japanese quail >5,000 mg/kg	LC_{50} 96 hours Bluegill 56–75 mg/L Rainbow trout >26.7 mg/L	Skin–slight Eye–moderate to severe
Glyphosate	4,230–5,600 mg/kg	Dog, 2 years >500 mg/kg/day	Rabbit >5,000 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard duck 4,500 ppm in diet	LC_{50} 96 hours Bluegill 120 mg/L Rainbow trout 86 mg/L	Skin–none Eye–slight to moderate
Halosulfuron	1,287 mg/kg	Dog, 13 weeks 10 mg/kg/day	Rat >5,000 mg/kg	LC_{50} 5 day Bobwhite quail and Mallard duck >5,620 ppm	LC_{50} 96 hours Bluegill >118 mg/L Rainbow trout >131 mg/L	Skin–slight Eye–slight

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Hexazinone	1,690 mg/kg	Rat, 2 years 250 mg/kg in diet	Rabbit >5,278 mg/kg	LC_{50} 5–8 day Bobwhite quail and Mallard duck >10,000 ppm in diet	LC_{50} 96 hours Bluegill 370–420 mg/L Rainbow trout 320–420 mg/L	Skin–none Eye–severe but reversible
Imazamethabenzmethyl	>5,000 mg/kg	Dog, 1 year 1,000 ppm	Rabbit >2,000 mg/kg			Skin–none Eye–slight
Imazaquin	>5,000 mg/kg	Dog, 1 year 1,000 ppm	Rabbit >2,000 mg/kg			Skin–slight
Imazamox	>5,000 mg/kg	Dog, 1 year 40,000 ppm	Rat >4,000 mg/kg	LC_{50} Mallard duck >5,672 ppm	LC_{50} 96 hours Bluegill >119 ppm Rainbow trout >122 ppm	Skin–none Eye–none
Imazapic	>5,000 mg/kg	Dog, 1 year 5,000 ppm	Rabbit >2,000 mg/kg			Skin–slight Eye–moderate
Imazapyr	>5,000 mg/kg	Dog, 1 year feeding 1,000 ppm Rat 300 mg/kg/day (teratology)	Rabbit >2,000 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard duck >5,000 ppm in diet	LC_{50} 96 hours Bluegill and Rainbow trout >100 mg/L	Skin–mild Eye–more severe

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Imazethapyr	>5,000 mg/kg	Dog, 1 year 25 mg/kg/day	Rabbit >2,000 mg/kg	LD_{50} Bobwhite quail and Mallard duck >2,150 ppm in diet	LC_{50} 96 hours Bluegill 420 mg/L Rainbow trout 340 mg/L	Skin–mild Eye–irritation reversible
Isoproturon	1,800–2,400 mg/kg	Dog, 90 days Rat, 2 years 3 mg/kg/day	Rat >3.2 g/kg		LC_{50} 96 hours Crucian carp 193 mg/L Rainbow trout 240 mg/L	Skin–none Eye–none
Isoxaflutole	>5,000 mg/kg	Dog, 1 year 1,200 ppm	Rat >2,000 mg/kg	LC_{50} 5 day Bobwhite quail and Mallard duck >4,255 ppm	LC_{50} 96 hours Bluegill >4.5 mg/L Rainbow trout >1.7 mg/L	Skin–minimal Eye–minimal
Linuron	1,200–4,000 mg/kg	Dog, 2 years 6.25 mg/kg/day (observed anemia)	Rabbit >5,000 mg/kg	LC_{50} 5–8 day Japanese quail >5,000 ppm Mallard duck 3,083 ppm in diet	LC_{50} 96 hours Bluegill and Rainbow trout 16 mg/L	Skin–mild Eye–moderate

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Maleic hydrazide	>5,000 mg/kg (acid) >6,950 mg/kg (Na^+ salt) >3,900 mg/kg (K^+ salt)	Dog, 1 year 25 mg/kg	Rabbit >20,000 mg/kg	LD_{50} Bobwhite quail and Mallard duck >10,000 mg/kg	LC_{50} 96 hours Bluegill 1,608 mg/L Rainbow trout 1,435 mg/L	Skin–slight Eye–severe
MCPA	700–1,160 mg/kg	Rat, 7 months 100 mg/kg/day (lowers wt gain)	Rabbit 3,400–4,800 mg/kg	LD_{50} Bobwhite quail 377 mg/kg	LC_{50} 96 hours Bluegill and Rainbow trout 90 mg/L	Skin–slight Eye–moderate
MCPB	4,700 mg/kg	Rat, 6 months 1.6 mg/kg/day	Rat >2,000 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard duck >5,000 ppm in diet	LC_{50} 96 hours Bluegill 14 mg/L Rainbow trout 4.3 mg/L	Skin–moderate Eye–moderate
Mecoprop	930–1,210 mg/kg	Rat, 90 days 3.8 mg/kg/day Dog, 90 days 15 mg/kg/day	Rabbit 900 mg/kg	LC_{50} Bobwhite quail and Mallard duck 5,000–5,500 ppm in diet	LC_{50} 96 hours Bluegill >100 mg/L Rainbow trout 124 mg/L	Skin–slight Eye–intense
Mesotrione	>5,050 mg/kg		Rat >5,050 mg/kg	LD_{50} Bobwhite quail	LC_{50} 96 hours Bluegill and	Skin–slight Eye–moderate

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
				>2,000 mg/kg Mallard duck >5,200 mg/kg	Rainbow trout >120 mg/L	
Metam (sodium and isothiocyanate)	1,800 mg/kg (M) 1,700 mg/kg (F) 97 mg/kg (isothiocyanate)	Rat, 65 days (inhalation, in inspired air) 6 hours/day for 5 days/week at 0.045 mg/L	Rabbit 10,000 mg/kg	LC_{50} Bobwhite quail >10,000 Mallard duck >5,000 ppm in diet	LC_{50} 96 hours Bluegill 0.047 mg/L Rainbow trout 0.029 mg/L	Skin–corrosive Eye–corrosive
Methyl bromide	Acute LC_{50} (inhalation) 4.5 mg/L air	Safe threshold for people 0.065 mg/L air			Acute toxicity Bluegill 11 mg/L	Skin–severe Eye–severe
Methyl isothiocyanate	82 mg/kg (M)	Dog, 2 years 10 mg/L in drinking water	Rabbit 202 mg/kg (F) 145 mg/kg (M)	LC_{50} 5 day Mallard duck 10,936 mg/kg	LC_{50} 96 hours Bluegill 0.13 mg/L Rainbow trout 0.37 mg/L	Skin–corrosive Eye–severe
Metobromuron	2,450–2,500 mg/kg	Rat, 2 years 250 mg/kg/day Dog, 100 mg/kg/day	Rabbit >2,000 mg/kg	LC_{50} 8 day Bobwhite quail >20,000 ppm Mallard duck >4,640	LC_{50} 96 hours Bluegill 4 mg/L Rainbow trout 3 mg/L	Skin–moderate Eye–moderate

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
				ppm in diet		
Metolachlor[c]	800–2,780 mg/kg	Rat, 90 days 1,000 mg/kg Dog, 90 days 500 mg/kg	Rabbit >5,000 mg/kg Rat >10 g/kg	LC_{50} 5 day Bobwhite quail and Mallard duck >10,000 ppm in diet	LC_{50} 96 hours Bluegill 15 mg/L Rainbow trout 3 mg/L	Skin–none Eye–none
Metosulam	>5,000 mg/kg	Dog, 1 year 10 mg/kg/day	Rabbit >2,000 mg/kg			Skin–none Eye–slight
Metribuzin	1,090–2,300 mg/kg	Rat, 2 years 5 mg/kg Dog, 2 years 2.5 mg/kg	Rat, rabbit >20,000 mg/kg	LC_{50} Bobwhite quail and Mallard duck >4,000 ppm in diet	LC_{50} 96 hours Bluegill 80 mg/L Rainbow trout 64–76 mg/L	Skin–none Eye–none
Napropamide	>5,000 mg/kg	Dog, 13 weeks < 100 mg/kg	Rabbit >4,640 mg/kg	LC_{50} 5 day Bobwhite quail >5,600 ppm Mallard duck 7,200 ppm in diet	LC_{50} 96 hours Bluegill 20–30 mg/L Rainbow trout 9–16 mg/L	Skin–none Eye–none
Naptalam	>5,000 mg/kg 1,770 mg/kg (Na^+ salt)	Rat, dog, 90 days 1,000 mg/kg (Na^+ salt)	Rabbit >20,000 mg/kg	LC_{50} 8 day Bobwhite quail 5,600 ppm	LC_{50} 96 hours Bluegill 354 mg/L	Skin–mild Eye–moderate

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
				Mallard duck >10,000 ppm in diet	Rainbow trout 76 mg/L	
Nicosulfuron	Mouse >5,000 mg/kg	Dog, 1 year >5,000 ppm in diet (M)	Rat, rabbit >2,000 mg/kg	LC_{50} Bobwhite quail and Mallard duck >5,620 ppm in diet	LC_{50} 96 hours Bluegill and Rainbow trout >1,000 mg/L	Skin–none Eye–moderate
Oxadiazon	>5,000 mg/kg	Rat, dog, 2 years 100 mg/kg	Rabbit >2,000 mg/kg	LC_{50} Bobwhite quail and Mallard duck >5,620 ppm in diet	LC_{50} 96 hours Bluegill 12.5 mg/L Rainbow trout 2 mg/L	Skin–moderate Eye–mild
Oxyfluorfen	Rat, dog >5,000 mg/kg	Rat, 2 years 2 mg/kg Dog, 2.5 mg/kg	Rabbit >5,000 mg/kg	LC_{50} Bobwhite quail >5,000 Mallard duck >4,000 ppm in diet	LC_{50} 96 hours Bluegill 0.2 mg/L Rainbow trout 0.41 mg/L	Skin–none Eye–moderate
Paraquat (dichloride)	150–283 mg/kg	Rat, 2 years 1.25 mg/kg Dog, 1 year 0.45 mg/kg	Rat >2,000 mg/kg (finished product)	LC_{50} 5 day Bobwhite quail 981 ppm Mallard duck 4,048	LC_{50} 96 hours Rainbow trout 26 mg/L	Skin–slight Eye–moderate

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
				ppm in diet		
Pebulate	1,120 mg/kg	Rat, 2 years 15 ppm in diet (eye lesions)	Rabbit 4,640 mg/kg	LC_{50} Bobwhite quail and Mallard duck >2,400 ppm in diet	LC_{50} 96 hours Bluegill and Rainbow trout 7.4 mg/L	Skin–slight Eye–mild
Pendimethalin	1,050 to >5,000 mg/kg	Dog, 2 years 12.5 mg/kg/day	Rabbit >5,000 mg/kg	LC_{50} 8 day Bobwhite quail 3,149 ppm Mallard duck 10,900 ppm in diet	LC_{50} 96 hours Bluegill 0.199 mg/L Rainbow trout 0.138 mg/L	Skin–none Eye–mild
Phenmedipham	8,000 mg/kg	Dog, 2 years >1,000 ppm in diet	Rat >2,000 mg/kg Rabbit >10,000 mg/kg	LC_{50} 4 day Bobwhite quail >2,480 ppm in diet	LC_{50} 96 hours Bluegill 760 mg/L LC_{50} 21 day Rainbow trout >210 mg/L	Skin–moderate Eye–severe
Picloram	5,000–8,200 mg/kg	Rat, 2 years 150 mg/kg/day	Rabbit >4,000 mg/kg	LD_{50} 8 day Bobwhite quail >2,500 Mallard duck >5,000 mg/kg	LC_{50} 96 hours Bluegill 14.5 mg/L Rainbow trout 19.3 mg/L	Skin–mild Eye–moderate

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
Prometryn	3,750–5,235 mg/kg	Dog, 90 days < 200 ppm in diet	Rabbit >2,000 mg/kg	LC_{50} 5–7 day Bobwhite quail and Mallard duck >10,000 ppm in diet	LC_{50} 96 hours Bluegill 10 mg/kg Rainbow trout 2.5–2.9 mg/L	Skin–none Eye–slight
Propanil	1,080 to >2,500 mg/kg	Dog, 2 years < 85 ppm in diet	Rabbit >5,000 mg/kg	LC_{50} 8 day Bobwhite quail 2,861 ppm Mallard duck 5,627 ppm in diet	LC_{50} 96 hours Bluegill 2.3 mg/L Rainbow trout 4.6 mg/L	Skin–moderate Eye–serious
Propoxycarbazone	>5,000 mg/kg	Dog, 1 year 258 mg/kg (M) 55.7 mg/kg (F)	Rat >5,000 mg/kg			Skin–slight Eye–minimal
Propyzamide	5,620–8,350 mg/kg	Dog, 2 years >7.5 ppm in diet	Rabbit 3,160 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard duck >10,000 ppm in diet	LC_{50} 96 hours Bluegill 100 mg/L Rainbow trout 72 mg/L	Skin–slight Eye–moderate
Pyrazon	3,030–3,600 mg/kg	Dog, 2 years 1,500 ppm in diet	Rat >2,000 mg/kg		LC_{50} Bluegill 40 mg/L	Skin–slight Eye–slight

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
Pyridate	1,285–1,412 mg/kg	Dog, 1 year 30 mg/kg/day	Rabbit >2,000 mg/kg	LC_{50} 8 day Bobwhite quail >5,000 ppm in diet	LC_{50} 96 hours Rainbow trout >1.2 mg/L	Skin–none Eye–slight
Pyrithiobac-sodium	4,000 mg/kg	Rat (longterm), 59 mg/kg	Rat >2,000 mg/kg	LC_{50} Bobwhite quail and Mallard duck >6,300 ppm	LC_{50} 96 hours Bluegill 5.8 mg/L Rainbow trout 8.2 mg/L	Skin–mild Eye–moderate
Quinclorac	3,060 mg/kg (M) 2,190 mg/kg (F)	Dog, 1 year 142 mg/kg/day (M) 140 mg/kg/day (F)	Rat >2,000 mg/kg	LD_{50} Bobwhite quail and Mallard duck >5,000 mg/kg	LC_{50} 96 hours Bluegill and Rainbow trout >100 mg/L	Skin–irritating Eye–moderate
Quizalofop-p-ethyl	1,210–1,670 mg/kg (M) 1,182–1,480 mg/kg (F)	Dog, 1 year < 10 mg/kg/day	Rat, mouse, rabbit >10,000 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard duck >5,000 ppm in diet	LC_{50} 96 hours Bluegill 0.46–2.8 mg/L Rainbow trout 10.7 mg/L	Skin–none Eye–slight
Rimsulfuron	>5,000 mg/kg	Dog, 1 year 50 ppm in diet	Rabbit >2,000 mg/kg	LC_{50} 8 day Bobwhite quail >5,620 ppm Mallard duck	LC_{50} 96 hours Bluegill 100 mg/L Rainbow trout 32 mg/L	Skin–mild Eye–mild

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
				>2,510 ppm in diet		
Sethoxydim	3,200 mg/kg (M) 2,676 mg/kg (F)	Dog, 1 year >8.86 mg/kg (M) >9.41 mg/kg (F)	Rat, mouse >5,000 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard duck >5,600 ppm in diet	LC_{50} 96 hours Bluegill and Rainbow trout >1,000 mg/L	Skin–none Eye–moderate
Siduron	>7,500 mg/kg	Rat, 2 years 500 ppm in diet	Rabbit >5,500 mg/kg	LC_{50} Bobwhite quail and Mallard duck >10,000 mg/kg	LC_{50} 48 hours Crucian carp 18 mg/L	Skin–slight Eye–slight
Simazine	>5,000 mg/kg	Rat, 2 years >5 mg/kg/day	Rabbit >10,200 mg/kg	LC_{50} 8 day Bobwhite quail >5,260 ppm Mallard duck 10,000 ppm in diet	LC_{50} 96 hours Bluegill and Rainbow trout >100 mg/L	Skin–none Eye–none
Sodium chlorate	1,200–7,000 mg/kg		Rabbit 500 mg/kg		LC_{50} 48 hours Fish 10,000 mg/L	Skin–moderate Eye–moderate
Sulfentrazone	2,416–3,297 mg/kg	Rat, 10 mg/kg/day (oral developme	Rat >5,000 mg/kg	LD_{50} Bobwhite quail and	LC_{50} 96 hours	Skin–mild Eye–moderate

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
		ntal studies)		Mallard duck >5,620 ppm	Bluegill 93.8 mg/L Rainbow trout >130 mg/L	
Sulfosulfuron	>5,000 mg/kg	Mouse, 90 days 7,000 mg/kg of diet	Rat >5,000 mg/kg	LD_{50} Bobwhite quail and Mallard duck 5,620 ppm	LC_{50} 96 hours Rainbow trout >97 mg/L	Skin–slight Eye–slight
Tebuthiuron	644 mg/kg	Dog, 1 year >25 mg/kg/day	Rabbit >200 mg/kg	LD_{50} Bobwhite quail and Mallard duck >2,500 mg/kg	LC_{50} 96 hours Bluegill 112 mg/L Rainbow trout 144 mg/L	Skin–slight Eye–slight
Thiazopyr	>5,000 mg/kg	Dog, 1 year 0.8 mg/kg/day	Rat >5,000 mg/kg	LD_{50} Bobwhite quail and Mallard duck 5,328 mg/kg	LC_{50} Bluegill and Rainbow trout 3.5 mg/L	Skin–slight Eye–slight
Thifensulfuron-methyl	>5,000 mg/kg	Rat, 2 years 25 ppm in diet	Rabbit >2,000 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard duck >5,620 mg/kg	LC_{50} 96 hours Bluegill and Rainbow trout 100 mg/L	Skin–none Eye–moderate
Tralkoxydim	1,258 mg/kg (M) 934 mg/kg (F)	Rat (teratogen), 30 mg/kg	Rat >2,000 mg/kg	LD_{50} Mallard duck	LC_{50} 96 hours Bluegill >6.1 mg/L	Skin–mild Eye–mild

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
				>3,020 mg/kg	Rainbow trout >7.2 mg/L	
Triallate	800–2,165 mg/kg	Dog, 2 years 15 mg/kg/day (highest tested)	Rabbit 8,200 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard duck >5,000 mg/kg	LC_{50} 96 hours Bluegill 1.3 mg/L Rainbow trout 1.2 mg/L	Skin–moderate Eye–slight
Triasulfuron	>5,000 mg/kg	Dog, 1 year 129 mg/kg/day	Rat >2,000 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard duck >5,000 ppm	LC_{50} 96 hours Bluegill and Rainbow trout >100 ppm	Skin–none Eye–none
Tribenuron-methyl	>5,000 mg/kg	Dog, 1 year 875 ppm in diet	Rabbit >2,000 mg/kg	LC_{50} Bobwhite quail and Mallard duck >5,620 ppm	LC_{50} 96 hours Bluegill 760 mg/L Rainbow trout 730 mg/L	Skin–none Eye–mild to moderate
Trichloracetic acid	3,200–5,000 mg/kg		Rat >2,000 mg/kg	LD_{50} Chicken 4,280 mg/kg	Not toxic to fish	Skin–severe Eye–severe
Triclopyr	630–729 mg/kg	Rat, 2 years 3 mg/kg/day	Rabbit >2,000 mg/kg	LC_{50} 8 day Bobwhite quail 2,935 ppm Mallard duck >5,401	LC_{50} 96 hours Bluegill 148 mg/L Rainbow trout 117 mg/L	Skin–none Eye–slight

Compound	Acute Oral LD_{50}—Rat	NOAEL[a] (oral)	Acute Dermal LD_{50}	Avian Toxicity/ NOAEC[b]	Toxicity to Fish in Water	Skin and Eye Irritation
				ppm in diet		
Trifluralin	>5,000 mg/kg	Dog, 2 years 18.75 mg/kg/day	Rabbit >2,000 mg/kg	LC_{50} 8 day Bobwhite quail and Mallard duck >5,000 ppm in diet	LC_{50} 96 hours Bluegill 0.05–0.07 mg/L Rainbow trout 0.02–0.06 mg/L	Skin–none Eye–moderate
Vernolate	1,200–1,900 mg/kg	Dog, 90 days >38 mg/kg/day	Rabbit >1,955 mg/kg	LC_{50} 7 day Bobwhite quail 12,000 ppm in diet	LC_{50} 96 hours Bluegill 8.4 mg/L Rainbow trout 9.6 mg/L	Skin–none Eye–none

[a] NOAEL = No observable adverse effect level, daily dosage or ppm concentration in the diet

[b] NOAEC = No observable adverse effect concentration

[c] Liquid

[d] Obsolete or no active registration

[e] Technical grade chemical

In these topics

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