



FEDERAL RESTRICTED USE PESTICIDES – JUNE 2004*

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RESTRICTED USE PESTICIDE:
FOR RETAIL SALE TO AND APPLICATION ONLY BY CERTIFIED APPLICATORS
OR PERSONS UNDER THEIR DIRECT SUPERVISION.

*Current copies of this list are found at the EPA Restricted Use Pesticide Website: <http://www.epa.gov/opprd001/rup>
This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated and current copies are not available from the EPA.

Chemical	Trade Names (not all listed)	Criteria
Acetamide	Guardsman Herbicide	Ground water
Acetamiprid	Assail	Potential to contaminate groundwater and surface water
Acetic Acid	Shotgun herbicide	Emulsifiable concentrate
Acetochlor	Harness, Surpass, Doubleplay Topnotch, others	Ground water
Acrolein	Magnacide H&B Aqualin	Human inhalation hazard, avian & aquatic residue effects
Alachlor	Intrro	Oncogenic
Aluminum Phosphide	Gastoxin, Quik-Fume, Detia	Acute inhalation toxicity
Amitraz	Mitac, Taktic (insecticide, miticide)	Possible oncogenicity
Amitrole	Amizol	Possible oncogenicity
Arsenic Acid	Dessicant L-10, Hy-Yield H-10, others	Oncogenic, mutagenic, fetotoxic & reproductive effects
Arsenic Pentoxide	Osrose K-33, CCA Wolmanac, others	Possible oncogenic, mutagenic, fetotoxic & reproductive effects
Atrazine	Aatrex 4L, Atrazine, Bicep, Surpass, others (Mixtures with other herbicides)	Ground water, worker exposure
Avermectin	Zephyr, Agri-Mek	Toxic fish, mammals, aquatic organisms
Avitrol	Avitrol	Hazard to fish & non-target birds
Azinphosmethyl	Guthion, Ketokil No. 52, Azinphos-Methyl, others	Acute inhalation toxicity, hazard to avian, aquatic & mammalian species

Chemical	Trade Names (not all listed)	Criteria
Bendiocarb	Turcam, Turcam plus	Aquatic & avian toxicity
Bifenthrin	Capture, Brigade, Talstar	Aquatic & avian toxicity
Bis (tributyltin) oxide	Interlux Micron, Interswift Navicote 2000, BKA007, others	Aquatic toxicity
Carbofuran (N,I)	Furadan	Acute inhalation and avian toxicity of granular formulations
Chlorophacinone	Rozol Tracking Powder,	Inhalation hazard, food contamination potential
Chloropicrin	Timberfume, DowFume MC-33, Terr-0-Gas, Metabrom, others	Acute inhalation hazard, hazard to non-target organisms
Chlorothoxyfos	Fortress	Acute human, avian & aquatic invertebrate toxicity
Chlorpyrifos	Lorsban	Avian & aquatic toxicity
Chromic Acid	Osmose K-33, Chromic acid, others	Mutagenic, teratogenic, oncogenic & fetotoxic effects
Clofentezine	Apollo SC	All uses
Clothianidin	Belay/Clutch	Toxic to aquatic organisms and bees
Coal tar	60/40 Creosote coal tar	Oncogenic & mutagenic effects
Coaltar creosote	Creosote oil, creosote solution, others	Oncogenic & mutagenic effects
Coumaphos	Co-Ral	Acute oral toxicity
Creosote Oil	Original Carbolineum, Osmoplastic SD	Possible oncogenic & mutagenic effects
Cube resins	NUSYN, Noxfish, Cube Powder & others	Chronic eye effects, inhalation hazard
Cuprous Oxide	Osmos ACC 50%, Red Seamate, others	Possible toxicity
Cyfluthrin	Baythroid2, Aztec, Tempo 2, Legend, Renounce	Acute human toxicity, toxic to fish & other aquatic organisms
Cyhalothrin	Karate C50	Toxic to fish & other aquatic organisms
Cypermethrin	Ammo, Cynoff	Oncogenic, hazard to non-target organisms
Deltamethrin	Delta Guard, Striker, Decis	Highly toxic to aquatic organisms
Diazinon	Diazinon, Knox Out NL, others	Toxic to avian & aquatic organisms
Dichloenil	Sewer out II, Sanaform Vaporooter	Conditional
Dicloropropene	Brom 70/30, Telone C-35, & others	Probable human carcinogen, acutely toxic by oral and inhalation routes
Diclofop Methyl	Hoelon 3 EC, Brestan H47	Oncogenic
Dicrotophos	Chiles' Go-Better, Mauget Inject A-Cide B	Acute dermal toxicity, residue effects on avian species
Diiflubenzuron	Dimilin, Micromite	Hazard to wildlife

Chemical	Trade Names (not all listed)	Criteria
Dinotefuran	Venom	
Dioxathion	Cooper Del-Tox Delnav	All EC concentrations greater than 30%, all solutions 3% & greater, acute dermal toxicity
Disulfoton	Di-syston	All emulsifiable concentrates 65% and greater, all emulsifiable concentrates and concentrate solutions 21% and greater with fensulfothion 43% and greater, all emulsifiable concentrates 32% and greater in combination with 32% fensulfothion and greater, acute dermal and inhalation toxicity
Emamectin Benzoate	Proclaim	Toxic to fish
Endrin	Velsicol Endrin	Acute dermal toxicity, non-target organism
Ethion	Ethion 8	Acute toxicity
Ethoprop	Mocap, Holdem	All EC 40% and greater & all granular formulations, all fertilizer formulations, acute dermal toxicity
Fenamiphos	Nemacur	All formulations 35% or greater, acute dermal toxicity, inhalation toxicity, avian acute oral toxicity
Fenbutatin-oxide	Vendex 50	Highly toxic to aquatic organisms
Fenitrothion	Sumiton 8E	Forestry uses, potential adverse effects on aquatic & avian species
Fenpropathrin	Danitrol, Tame	Toxic to fish & other aquatic organisms
Fenthion	Baytex, Mosquitocide 700	Acute toxicity to birds, fish and aquatic invertebrates
Fenvalerate	Asana XL, Fury 1.5	Possible adverse effects on aquatic organisms
Fipronil	Regent, Icon	Conditional registration
Hydrogen cyanamide	Dormex	Corrosive to skin & eyes
Imidacloprid	Admire, Provado	Toxic to bees; potential for groundwater contamination
Lambda-Cyhalothrin	Karate, Scimitar, Demand, Warrior	Toxicity to fish & aquatic invertebrates
Lindane	Lindane, Or-Cal Metam-S.A.U., others	(RPAR decision) Possible oncogenic
Magnesium Phosphide	Phostoxin, Magnaphos, Fami-Cel Plate	Inhalation hazard
Methamidophos	Monitor 4	Acute dermal toxicity, residue effects on avian species
Methidathion	Supracide	Residue effects on avian species
Methiocarb	Mesurol 75WP	Possible hazard to avian, fish and other aquatic organisms

Chemical	Trade Names (not all listed)	Criteria
Methomyl	Lannate, Lannabait	As sole active ingredient in 1% to 2.5% bait (except 1% fly bait), all concentrated solution formulations, 90% wettable powder (not in water soluble bag), accident history, residual effects on mammalian species
Methyl Bromide	Dowfume MC-33, Terr-O-Gas, Pic-Brom, others	All formulations, accident history, acute toxicity
Methyl Isothiocyanate	Degussa Methyl isothiocyanate, Mite-Fume	Ready to use wood preservative
Metolachlor	Drexel Trizmiet 11	Emulsifiable concentrate
Mevinphos	Phosdrin, Duraphos	All emulsifiable and liquid concentrates, 2% dusts, acute dermal toxicity and residue effects on mammalian and avian species
Niclosamide	Bayluscide	Acute inhalation toxicity, effects on aquatic organisms
Nicotine	4-tin, Fulex	Liquid and dry formulations 14% active & greater, acute inhalation toxicity and effects on aquatic organisms
Nitrogen, Liquid	Liquid Nitrogen (termiticide)	Highly corrosive to skin & eyes
Oxamyl	Vydate	Avian toxicity, acute oral and inhalation toxicity
Oxydemeton Methyl	Metasystox-R, Harpoon,	Reproductive effects
Paraquat	Surefire, HerbiQuat, Cyclone, Gamoxone	All formulations and concentrations except pressurized spray formulations containing 0.44% paraquat bis (methyl sulfate) and 15% petroleum distillates as active ingredients, liquid fertilizer containing 0.25% paraquat dichloride and 0.03% atrazine, accident history, human toxicological data
Pentachlorophenol & PentaSodium Salt	Penta, Permatox, Mitrol G-ST, Pentacon	Possible oncogenic, mutagenic, reproductive and fetotoxic effects.
Permethrin	Pounce, Ambush, others	Highly toxic to aquatic organisms, oncogenicity
Phorate	Thimet, Milo bait, Holdem, Rampart, others	All granular formulations, acute oral & dermal toxicity, residue effects on mammals
Phosterbupirim	Aztec	Granular formulations
Picloram	Tordon 22 K, Grazon P+D, others	Hazard to non-target organisms
Piperonyl Butoxide	Vex, NUSYN, Scourge, others	Mixed with other restricted chemicals
Profenphos	Curacron 6E/8E	Corrosive to eyes
Pronamide	Kerb	All 50% wettable powders
Propanoic Acid	Silverado	Emulsifiable concentrate
Propetamphos	Zoecon	Emulsifiable concentrate, indoor use

Chemical	Trade Names (not all listed)	Criteria
Pyrethrins	SunGro Buggone II	Chronic eye effects
Resmethrin	SBP-1382, Scourge, Oblique, others	Acute fish toxicity
S-Fenvalerate	Asana XL Insecticide	Adverse effects to aquatic organisms
Simazine	Simazine, Printrex, Simazat	Some products, ground water concern
Sodium cyanide	M-44 cyanide, DRC-1339	Inhalation hazard, hazard to non-target species
Sodium dichromomate	Osmoplastic SD, CSI 70%	Mutagenic, teratogenic, oncogenic, fetotoxic
Sodium fluoroacetate	Compound 1080 Livestock protection collar	Acute oral toxicity, hazard to non-target species, accident history
Sodium hydroxide	Angus Hot Rod	Acute toxicity hazard - inhalation, eyes, dermal
Sodium methyl-dithiocarbamat	Vapam, Meltham, Vaporooter, Sodcure	Dermal toxicity and teratogenicity
Starlicide	Compound DRC-1339, Gull Toxicant	Hazard to non-target species
Strychnine	Gopher Getter, Cooke Quick, others	All dry bait, pellet and powder formulations, acute oral toxicity, hazard to non-target species
Sulfotepp	Dithio Insecticidal Smoke	Sprays and smoke generator, inhalation hazard
Sulfuric Acid	Sulfuric Acid, others	Extremely corrosive, acute toxicity
Sulfuryl Fluoride	Termafume, Vikane	Acute inhalation hazard
Sulprofos	Bolstar 6	Wildlife hazard
Tefluthrin	Force	Environmental concern
Terbufos	Counter	All formulations with active ingredient 15% or greater, acute oral and dermal toxicity, avian residue effects
TFM	TFM Bar, Sea lamprey larvacide	Requires specialized training, equipment and clothing
Thiamethoxam	Actara/Platinum	Toxic to wildlife and highly toxic to aquatic invertebrates and bees; surface water and groundwater contamination potential
Tralomethrin	Scout, Striker	Toxic to aquatic organisms
Tributyltin Fluoride	Polyflo Anti-Fouling Paint, others	Acute toxicity to aquatic organisms, including shellfish
Tributyltin Methacrylate	AmerCoat 698, Interswift, others	Acute toxicity to aquatic organisms, including shellfish
Trisopropranolamine	Toram 101	Hazard to non-target plants

Chemical	Trade Names (not all listed)	Criteria
Triphenyltin Hydroxide	Duter, Supertin 4L, Pro-TeX & others	Possible mutagenic effects
Zinc Phosphide	Bonide, Orchard Mouse Bait, Mouse-Con, others	All bait formulations, hazard to non-target species, acute oral and inhalation hazard

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ALABAMA RESTRICTED USE LIST

All pesticides classified as restricted by the United States Environmental Protection Agency under requirements of the Federal Insecticide, Fungicide, and Rodenticide Act are also designated as Restricted Use pesticides under the Alabama Pesticides Act of 1971. These restricted pesticides, in addition to the ones on the federal list, are listed below:

Methyl Bromide	All formulations
Phosphorus	White or yellow
Tordon.	All formulations

ALABAMA 24(C) LABELS IN EFFECT THROUGH DECEMBER 2010

A 24(C) registration is a federal registration that has been granted to the state of Alabama for a special local need.
This registration is valid only in the state of Alabama.

Alabama Registration Number	Product Name	Use	Company Name
AL 800022	Agrisolutions 912	Use in pine plantations	Agriliance LLC
AL 870002	Dimilin 25W	Use on pines to control insects	Chemtura Corp.
AL 880003	Furadan 4F	Controls chinch bugs on grain sorghum	FMC Corp.
AL 930004	Dimilin 25W	Controls mosquitoes and midges	Chemtura Corp.
AL 940002	Furadan 4F	Use on cucurbits	FMC Corp.
AL 980004	Envoy	Use on centipede sod to control bermudagrass	Valent USA Corp.
AL 030003	Reflex	Use in pine seedling nurseries	Syngenta Crop Protection
AL 040001	Curfew	Use on turf for nematode control	Dow AgroScience
AL 060002	Arctic 3.2EC	Controls regeneration weevils in conifer nurseries	Agriliance LLC
AL 060006	Permethrin	Controls regeneration weevils in conifer nurseries	Loveland Products
AL 070001	Reward LA	Controls hydrilla	Syngenta Crop Protection
AL 070005	Zoro Miticide	Controls spider mites in cotton	Cheminova
AL 080001	Brigade EC	Use in conifer seed orchards	FMC Corp.
AL 090001	Reflex	Use early preplant on cotton	Syngenta Crop Protection
AL 100001	Arsenal Powerline	Cogongrass control on grazed and hayed sites	BASF
AL 100002	Valor SX	For burndown preplant cotton to control Palmer amaranth	Valent USA Corp
AL 100003	Dual Magnum	Weed control in sesame	Syngenta Crop Protection
AL 110001	Gramoxone Inteon	Use in rope wick or carpet roller in peanuts for Palmer amaranth control	Syngenta Crop Protection

MAINTAINING WATER QUALITY

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Clean water is of great concern for all Americans. Almost all potable water supplies come from surface or ground water. Surface water is derived from above-ground sources such as lakes, streams, ponds, or other impounded bodies. Ground water is found in zones beneath the earth's surface, which are called aquifers. Aquifers are formations of rock, sand, or gravel in which all pore spaces are filled with water. Aquifers serve as the source of fresh water for wells and springs. Water originates as rain or melted snow, which either accumulates on the soil surface or percolates through the soil to the water table and into ground water.

Many of man's activities can have a detrimental effect on water quality. Contamination from industrial wastes, petroleum products, fertilizers, manures, and municipal sewage and septic tanks all affect the quality of our surface and ground water. Actions have been taken on a national scale to eliminate or to minimize the effects of these sources of possible contamination.

Agricultural pesticides may also contaminate aquifers or surface water sources. Pesticides enter surface and ground water because of the actions of the landowner. Pesticides can enter water directly through accidental spills, back siphoning, intentional excessive pesticide application, improper application, improper disposal of rinsates, improper container disposal, and through poorly constructed or maintained wells. These situations are all avoidable and can be prevented with greater attention to proper management practices and through upgrading application equipment.

Pesticides can enter water indirectly through normal leaching in the soil after application or through surface runoff (or surface-loss). Contamination due to surface-loss from agricultural fields can be reduced in part by modifying farming practices. Contour farming, no-till farming, and strip farming can reduce the movement and flow of water, thereby minimizing any soil erosion from sloped fields. In some cases, selecting the appropriate pesticide can reduce the potential for leaching and for surface-loss as well.

Each agricultural chemical or pesticide used today has different water solubility and other chemical characteristics

that affect its behavior in and on soils. The solubility and behavior of a pesticide in the soil is dependent in part on the soil texture, soil type (morphology), and organic-matter content. These factors all affect the degree of soil absorption of a pesticide.

Soils with a high organic-matter content or with considerable amounts of clay in their structure tend to strongly adsorb pesticides, thus reducing leaching. However, coarse-textured sandy soils low in organic matter have low adsorption, which tends to permit downward leaching of pesticides. A knowledge of your particular soil type and soil texture will help in selecting pesticides which have limited potential for surface-loss or leaching.

In places where soils are very sandy or gravelly with little organic matter, a producer should select a pesticide that has only small or medium leaching potential. Use of a chemical with a large leaching potential in this situation could lead to contamination of ground water. In situations where fields have considerable slope or in areas where soil is permanently saturated with water, it is advisable to use a pesticide that has a small to medium potential for surface-loss.

In areas where ground water is quite shallow, there is a good possibility that pesticides can enter the ground water through leaching. In areas of limestone composition, it is possible that pesticides can enter ground water through developing sinkholes. In these situations, selection of pesticides used in agricultural production is critical to prevent possible contamination of surface and ground waters.

In the following tables, water quality information is listed for insecticides and acaricides and for fungicides and nematicides, respectively. The pesticides are listed alphabetically by common name. The surface-loss potential indicates the tendency of the pesticide to move with sediment in run-off. The leaching potential indicates the tendency of the pesticide to move in solution with water and to leach below the root zone into deep percolation. Water quality information for herbicides is listed with the weed control recommendations in each section.

Properties of Pesticides That May Affect Water Quality			
Common Name	Trade Names (not all listed)	Surface-Loss Potential	Leaching Potential
Insecticides and Acaricides			
Abamectin	Affirm, Avid	NA	NA
Acephate	Orthene	Small	Small
Azinphosmethyl	Guthion	Large	Small
Bacillus thuringiensis	Dipel	***	***
Bendiocarb	Dycarb, Turcam	NA	NA
Bifenthrin	Capture, Talstar	NA	NA
Carbaryl	Ortho, Sevimol, Sevin	Medium	Small
Carbofuran	Furadan	Small	Large
Chinomethionate	Morestan	NA	NA
Chlorpyrifos	Dursban, Lorsban	Medium	Small
Cyfluthrin	Baythroid, Tempo	NA	NA
Cyhalothrin	Karate	NA	NA
Cypermethrin	Ammo, Cymbush, Demon	Large	Small
Demeton-S-Methyl	Metasystox	Medium	Large
Diazinon	Diazinon	Medium	Large
Dicofol	Kelthane	Large	Small
Dicrotophos	Bidrin	Small	Medium
Dienochlor	Pentac	NA	NA
Diethatyl-Ethyl	Andor	Medium	Small
Diflubenzuron	Dimilin	Large	***
Dimethoate	Cygon, Defend	Small	Medium
Disulfoton	Di-Syston	Medium	Small
Endosulfan	Thiodan	Large	Small
Esfenvalerate	Asana	Large	Small
Ethion	Ethion	Large	Small
Ethoprop (Ethoprophos)	Mocap	Medium	Large
Fenbutatin Oxide	Vendex	Large	Small
Fenitrothion	Sumithion	NA	NA
Fenoxycarb	Logic	Small	Small
Fensulfothion	Dasanit	NA	NA
Fenvalerate	Pydrin	Large	Small
Flucythrinate	Pay-Off	Large	Small
Fluvalinate	Mavrik	Large	Small
Fonofos	Dyfonate	Large	Medium
Formetanate Hydrochloride	Carzol	Large	Small
Hydramethylnon	Amdro, Combat	Large	***
Isazophos	Triumph	NA	NA
Isofenphos	Oftanol	NA	NA
Lindane	Isotox, Lindane	Large	Medium
Malathion	Cythion, Malathion	Small	Small
Metaldehyde	Metaldehyde	Large	Small
Methamidophos	Monitor	Medium	Small

Common Name	Trade Names (not all listed)	Surface-Loss Potential	Leaching Potential
Insecticides and Acaricides (cont.)			
Methidathion	Supracide	Medium	Small
Methiocarb	Mesurool	Medium	Medium
Methomyl	Lannate, Nudrin	Small	Medium
Methoxychlor	Marlate, Methoxychlor	NA	NA
Mevinphos	Phosdrin	Small	Medium
Oxydemeton-Methyl	Metasystox-R	Small	Large
Parathion	Parathion	Medium	Small
Permethrin	Ambush, Pounce, Pramex	Large	Small
Petroleum Oil	Volck Oils	Small	Medium
Phorate	Thimet	Large	Medium
Phosalone	Zolone	Small	Medium
Phosmet	Imidan	Medium	Small
Profenofos	Curacron	Large	Small
Propargite	Comite, Omite	Large	Small
Prosphamidon	Swat	Small	Large
Resmethrin	SBP-1382	NA	NA
Sulprofos	Bolstar	Medium	Small
Terbufos	Counter	Medium	Small
Thiodicarb	Larvin	Medium	Small
Tralomethrin	Scout	NA	NA
Trichlorfon	Dipterex, Dylox, Proxol	Small	Large
Trichloroethane	MC-96	NA	NA
Trimethacarb	Broot	Medium	Small
Fungicides and Nematicides			
Anilazine	Dyrene	Small	Small
Benomyl	Benlate, Tersan	Medium	Small
Captan	Captec, Orthocide	NA	NA
Carbofuran	Furadan	Small	Large
Carboxin	Vitavax, Enhance	Small	Small
Chloropicrin	Telone	Small	Small
Chlorothalonil	Bravo, Daconil	Medium	Small
DCNA	Botran	Large	Small
Dichloropropene	Telone, Vorlex	Small	Medium
Dinocap	Karathane, Crotothane	Small	Small
Dodine Acetate	Cyprex	Large	Small
Ethoprop	Mocap	Medium	Large
Etridiazole	Terrazole, Truban	Large	Small
Fenamiphos	Nemacur	Medium	Medium
Fenarimol	Rubigan	Medium	Small
Ferbam	Carbamate	Medium	Medium
Fonofos	Dyfonate	Large	Medium

Common Name	Trade Names (not all listed)	Surface-Loss Potential	Leaching Potential
Fungicides and Nematicides (cont.)			
Iprodion	Rovraol	Medium	Small
Mancozeb	Dithane, Manzate	Medium	Small
Maneb	Manex	Medium	Small
Metalaxyl	Apron, Ridomil, Subdue	Small	Medium
Metam Sodium Salt	Vapam	Small	Medium
Methyl Isothiocyanate	Vorlex	Small	Medium
Metiram	Polyram	Medium	Small
Oxamyl	Vydate	Small	Large
Oxycarboxin	Plantvax	Small	Large
PCNB	Terraclor, Turfcide	Large	Small
Phosethyl-Al	Aliette	Medium	Small
Piperalin	Pipron	Medium	Small
Propiconazole	Tilt, Orbit	Medium	Medium
Terbufos	Counter	Medium	Small
Thiabendazole	Mertect 340F	NA	NA
Thiophanate-Methyl	Topsin, Fungo, Cleary's 3336	Small	Medium
Thiram	Thiram, Pro-Treat	Medium	Medium
Triadimefon	Bayleton	Medium	Medium
Triadimenol	Baytan	NA	NA
Triforine	Funginex, Ortho Triforine	Medium	Small
Vinclozolin	Ronilan, Vorlan	Medium	Medium
Ziram	Ziram	Medium	Small

NOTE: NA = Information not available.

*** = Pesticide should not leach with percolating water.

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For more information, contact your county Extension office. Visit <http://www.aces.edu/counties> or look in your telephone directory under your county's name to find contact information.

Use pesticides **only** according to the directions on the label. Follow all directions, precautions, and restrictions that are listed. Do not use pesticides on plants that are not listed on the label.

The pesticide rates in this publication are recommended **only** if they are registered with the Environmental Protection Agency or the Alabama Department of Agriculture and Industries. If a registration is changed or canceled, the rate listed here is no longer recommended. Before you apply **any** pesticide, check with your county Extension agent for the latest information.

Trade names are used **only** to give specific information. The Alabama Cooperative Extension System does not endorse or guarantee any product and does not recommend one product instead of another that might be similar.

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