



## RESTRICTED-USE PESTICIDES

In 1972, amendments to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) provided the legal mechanism for restricting the use of certain pesticides. The U.S. Environmental Protection Agency (US EPA), confronted with the enormous task of reviewing all registered pesticides, proposed to classify pesticides by their active ingredients, subdividing each active ingredient into its various formulations or uses. This classification system provided the US EPA with more flexibility to restrict some, but not all, products containing the same active ingredient. The process was called classification by regulation. When pesticides are restricted in this manner, the manufacturer is given 270 days to amend the label on all the affected products. This timetable has been of particular interest to pesticide dealers because once the restricted use label is applied to the container, it can be sold only to a certified applicator.

In addition to reviewing existing products, the US EPA is required to register products not previously marketed. Some of these new products have been classified for restricted use. This process is called classification by registration.

Pesticides classified for restricted use by registration and regulation are listed in Table 1.

### RECORD KEEPING REQUIREMENTS

All certified applicators are required to keep records of applications of federally restricted-use pesticides (RUP). These records are required under the Food, Agriculture, Conservation, and Trade Act of 1990, also known as the 1990 Farm Bill. Record keeping has been

required of commercial applicators in Illinois since 1988 under the Illinois Pesticide Act. There is no required form for either regulation. Any form is acceptable as long as the required data are included.

### PRIVATE APPLICATORS

The federal regulations require all certified private applicators (those who apply pesticides to their own land) to maintain records of RUP applications. Records must be recorded within 30 days of the RUP application and maintained for 2 years. Federal regulations require that records for restricted-use pesticide applications must include the following information:

- brand or product name and the EPA registration number
- total amount applied
- location of the application (four options available; see sample form)
- size of the area treated
- crop, commodity, stored product, or site to which a RUP was applied
- month, day, and year of the application
- name and certification number of the certified applicator who applied or who supervised the application of the RUP

Spot applications, where a RUP is applied to an area less than one-tenth of an acre, require less stringent records. Only the product name and registration number, amount applied, location, and date must be recorded. Greenhouses and nurseries are excluded from using spot applications in their records.

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*The information in this chapter is provided for educational purposes only. Product trade names have been used for clarity, but reference to trade names does not imply endorsement by the University of Illinois; discrimination is not intended against any product. The reader is urged to exercise caution in making purchases or evaluating product information.*

*Label registrations can change at any time. Thus the recommendations in this chapter may become invalid. The user must read carefully the entire, most recent label and follow all directions and restrictions. Purchase only enough pesticide for the current growing season.*

**COMMERCIAL APPLICATORS**

All commercial applicators must continue to maintain the records they currently keep under Illinois regulations. In addition, the federal regulations require all commercial applicators to furnish a copy of either the state or federally required records to the customer within 30 days of the RUP application. Records must be maintained for 2 years from the date of application.

Requirements for records of RUP applications under the Illinois Pesticide Act include the following:

- brand or product name, and the EPA registration number
- amount applied

- use site
- month, day, and year of the application

For more information, contact the Illinois Department of Agriculture at (217)785-2427 or your local Extension office.

**AUTHOR**

**P. Nixon**

*Department of Natural Resources  
and Environmental Sciences  
and the Illinois Natural History Survey*

**Table 1. Restricted-use pesticides (September 1999)**

Active ingredient	Trade name	Type	Formulations restricted	Criteria for restricted use
abamectin	Agri-Mek, Zephyr	Insecticide	Emulsifiable concentrates	Toxic to mammals and aquatic organisms
acetochlor	DoublePlay, Har- ness, Surpass, TopNotch	Herbicide	Emulsifiable concentrates	— <sup>a</sup>
acrolein	Aqualin, Mag- nacide H & B	Herbicide	When it is the only active ingredient	Human inhalation haz- ard, avian and aquatic toxicity
alachlor	Lasso, others	Herbicide	All	Oncogenicity
aldicarb	Temik	Insecticide– nematicide	All	Accident history
aluminum phosphide	Detia, Phostoxin, many others	Fumigant	All, when it is the only active ingredient	Human inhalation hazard
amitraz	Mitac, Taktic	Insecticides	All	Oncogenicity
amitrole	Amizol	Herbicide	All except homeowners'	Possible oncogenicity
arsenic acid	CCA Desiccant	Herbicide, wood pre- servative	All except brush-on	Fetotoxicity; oncogenicity
arsenic pentoxide	many	Wood preserva- tive	All	Oncogenicity; mutagenic- ity; reproductive and fetotoxic effects
atrazine	many	Herbicide	All except homeowners'	Groundwater contamina- tion; worker exposure

**Table 1. Restricted-use pesticides (September 1999) (cont.)**

Active ingredient	Trade name	Type	Formulations restricted	Criteria for restricted use
avitrol	Avitrol	Avicide	All	Hazard to fish and non-target birds
azinphosmethyl	Guthion, many others	Insecticide	All liquids with concentrations > 13.5%	Human inhalation toxicity; acute toxicity hazard to birds and aquatic and mammalian species
bendiocarb	Turcam	Insecticide	Granular formulations and wettable powders	Aquatic and bird toxicity
bifenthrin	Brigade, Capture, Talstar	Insecticide	Emulsifiable concentrates	Toxicity to aquatic organisms
bis (tributyltin) oxide	many	Biocide	Ready-to-use, solutions	Toxicity to aquatic organisms
carbofuran	Furadan	Insecticide-nematicide	Concentrate suspensions and wettable powders; all granular formulations	Acute inhalation toxicity; bird toxicity
carbon dioxide	Makr carbon dioxide	Fumigant	Pressurized gas	— <sup>a</sup>
chlorthoxyfos	Fortress	Insecticide	Granular	Human, bird, and aquatic invertebrate toxicity
chlorophacinone	Rozol Tracking Powder	Rodenticide	All	Human hazard; potential for food contamination
chloropicrin	many	Fumigant	All	Acute inhalation toxicity; hazard to nontarget organisms
chlorothalonil	Dacobre DG	Fungicide	Water-dispersible granules	Human hazard
chlorpyrifos	Lorsban	Insecticide	Lorsban 4E-SG	Avian and aquatic toxicity
chromic acid	CCA (Chromated Copper Arsenate), others	Wood preservative	All except brush-on	Oncogenicity; mutagenicity; teratogenicity; fetotoxic effects
clofentezine	Apollo	Miticide	Suspension concentrate	Allowance of new uses
copper oxychloride	Dacobre DF	Fungicide-bactericide	Flowable	— <sup>a</sup>
coumaphos	CO-RAL	Insecticide	Flowable concentrate	Acute oral toxicity

**Table 1. Restricted-use pesticides (September 1999) (cont.)**

Active ingredient	Trade name	Type	Formulations restricted	Criteria for restricted use
creosote oil, coal tar creosote, coal tar	many	Wood preservative	All	Possible oncogenicity and mutagenicity
cuprous oxide	Osmos ACC, Hempel's Combic	Fungicide	Ready-to-use	— <sup>a</sup>
cyanazine	Bladex, Cycle, Extrazine II	Herbicide	All	Teratogenicity; fetotoxicity
cyfluthrin	Aztec, Baythroid, Tempo	Insecticide	25% emulsifiable concentrate, agricultural uses	Toxicity to applicator; toxicity to fish and other aquatic organisms
cypermethrin	Ammo, Cynoff	Insecticide	All	Hazard to nontarget organisms; oncogenicity
deltamethrin	Decis, Deltagard, Striker	Insecticide	Emulsifiable concentrate	Toxicity to aquatic organisms
diazinon	Diazinon, D-Z-N, others	Insecticide	Granulars, wettable powders, emulsifiable concentrates	Toxicity to birds and aquatic organisms
dichlofenil	Sewerout II	Herbicide	All	Conditional
dichloropropene	Telone, others	Fumigant	94% liquid concentrate	Possible oncogenicity; acute toxicity
diclofop methyl	Hoelon	Herbicide	All	Oncogenicity
dicrotophos	Bidrin, others	Insecticide	All liquids 8% and greater	Acute dermal toxicity; residue effects on birds
diflubenzuron	Dimilin	Insecticide	Wettable powders	Hazard to wildlife
dioxathion	Delnav	Insecticide	Formulations >30%	Acute dermal toxicity
diphacinone	Promar	Rodenticide	Dust	— <sup>a</sup>
disulfoton	Di-Syston	Insecticide	Some emulsifiable concentrates	Acute dermal and inhalation toxicity
endrin	Endrin	Insecticide	All	Acute dermal toxicity; hazard to nontarget organisms
EPTC	DoublePlay	Herbicide	Emulsifiable concentrate	— <sup>a</sup>

**Table 1. Restricted-use pesticides (September 1999) (cont.)**

Active ingredient	Trade name	Type	Formulations restricted	Criteria for restricted use
esfenvalerate	Asana	Insecticide	All	Adverse effects on aquatic organisms
ethion	Ethion	Insecticide–miticide	8EC	Acute toxicity
ethoprop	Mocap	Insecticide	All	Acute toxicity; bird toxicity
ethyl parathion	Parathion, many	Insecticide	All	Acute dermal and inhalation toxicity; effects on birds, fish, and mammals
fenamiphos	Nemacur	Nematicide	Emulsifiable concentrates $\geq 35\%$	Acute toxicity; bird toxicity
fenbutatin-oxide	Vendex	Insecticide	Wettable powder for grapes	Toxicity to aquatic organisms
fenitrothion	Sumithion	Insecticide, acaricide	Emulsifiable concentrate; 93% soluble concentrate/liquid for forestry	Potential hazard to birds and aquatic organisms
fenoxaprop-p-ethyl	Option II	Herbicide	Emulsifiable concentrate	— <sup>a</sup>
fenpropathrin	Danitol, Tame	Insecticide	2.4EC	Toxicity to aquatic organisms
fenthion	many	Insecticide	Emulsifiable concentrates	Acute toxicity to birds and aquatic organisms
fipronal	Regent	Insecticide–miticide	5G	Conditional
hydrogen cyanamide	Dormex	Herbicide	50% active ingredient	Corrosive to skin and eyes
isazofos	Triumph	Insecticide	All	Toxicity to birds and aquatic organisms
lambda-cyhalothrin	Demand, Karate, Scimitar, Warrior	Insecticide	All	Toxicity to fish and aquatic invertebrates
lindane	many	Insecticide	All	Possible oncogenicity
magnesium phosphide	Fumi-Cel, Phostoxin	Fumigant	All	Inhalation hazard

**Table 1. Restrictive-use pesticides (September 1999) (cont.)**

Active ingredient	Trade name	Type	Formulations restricted	Criteria for restricted use
methamidophos	Monitor	Insecticide	Liquid formulations $\geq 40\%$ ; dust formulations $\geq 2.5\%$	Acute dermal toxicity; residue effects on birds
methidathion	Supracide	Insecticide	All	Residue effects on birds
methiocarb	Mesuroil	Molluscicide	All	Possible hazard to birds and aquatic organisms
methomyl	Lannate	Insecticide	All concentrated solutions, many 90% wettable powders, many baits	Residue effects on mammals; accident history
methyl bromide	many	Fumigant	All	Accident history; acute toxicity
methyl isothiocyanate	methyl isothiocyanate	Wood preservative	Ready-to-use, solution	Exceeds classification criteria
methyl parathion	Penncap-M, many	Insecticide	All	Acute dermal toxicity; residue effects on birds, bees, and mammals
mevinphos	Duraphos, Phosdrin	Insecticide	Emulsifiable and liquid concentrates; 2% dust	Acute dermal toxicity; residue effects on birds and mammals
niclosamide	Baylascid	Molluscicide	Wettable powders $\geq 70\%$	Toxicity to aquatic organisms; inhalation toxicity
nicotine (alkaloid)	Nicotine	Insecticide	Cranberry formulations, liquid and dry formulations $\geq 14\%$ for greenhouses	Acute inhalation toxicity; effects on aquatic organisms
nitrogen, liquid	Liquid Nitrogen	Insecticide	Ready-to-use, solution	Corrosive to skin and eyes
oxamyl	Vydate	Insecticide, nematicide	All	Acute oral and inhalation toxicity; bird toxicity
oxydemeton-methyl	Metasystox-R	Insecticide	All	Reproductive effects
paraquat	Cyclone, Gramoxone, Paraquat, Prelude, Surefire	Herbicide	All except for some mixtures	Use and accident history; human toxicity

**Table 1. Restricted-use pesticides (September 1999) (cont.)**

Active ingredient	Trade name	Type	Formulations restricted	Criteria for restricted use
pentachloro-phenol	Penta wood preservative, many others	Wood preservative	All	Possible oncogenicity; teratogenicity; and fetotoxicity
permethrin	Ambush, Pounce	Insecticide	All except some ready-to-use	Toxicity to aquatic organisms; oncogenicity
phorate	Phorate, Thimet	Insecticide	All liquid formulations $\geq 65\%$ , granular formulations	Acute toxicity; effects on birds, mammals, and aquatic organisms
picloram	Grazon, Tordon	Herbicide	All except Tordon 101R	Hazard to nontarget organisms
piperonyl butoxide	Oblique, Scourge, Vex	Insecticide	Emulsifiable concentrate	— <sup>a</sup>
profenofos	Curacron	Insecticide, acaricide	Emulsifiable concentrates	Corrosive to eyes
pronamide	Kerb	Herbicide	All 50% wettable powders	Special review
propetamphos	RF-270	Insecticide	50% emulsifiable concentrates	Voluntary restriction
resmethrin	many	Insecticide	All except ready-to-use	Fish toxicity
rotenone	Cube, Rotenone, others	Fish control	2.5 and 5.0 emulsifiable concentrates; 5.0% and 20.0% wettable powders	Chronic eye and inhalation effects
simazine	Printrex, Simazat	Herbicide	Emulsifiable concentrate	— <sup>a</sup>
sodium cyanide	Cyanide	Fumigant	All capsules and ball formulations	Human inhalation toxicity; hazard to nontarget species
sodium dichromate	SD compound	Wood preservative	All except brush-on	Oncogenicity, mutagenicity, teratogenicity, fetotoxicity
sodium fluoroacetate	1080	Predatorcide	All solutions and dry baits	Acute oral toxicity; use and accident history; hazard to nontarget organisms
sodium hydroxide sodium	Angus Hot Rod	Herbicide	Ready-to-use	Acute toxicity; inhalation, eye, and skin hazard

**Table 1. Restricted-use pesticides (September 1999) (cont.)**

Active ingredient	Trade name	Type	Formulations restricted	Criteria for restricted use
methyldithio-carbamate	Metam Sodium, Vapam	Fumigant	32.7% anhydrous	Toxicity; teratogenicity
starlicide	Gull-Toxicant	Bird repellent	98% concentrate	Hazard to nontarget organisms
strychnine	many	Rodenticide	All	Acute oral toxicity; effects on nontarget organisms; accident history
sulfotep	Dithio Smoke	Fumigant	All sprays and smokes	Acute inhalation toxicity
sulfuric acid	Sulfuric Acid Desiccant	Herbicide	Ready-to-use, solution	Extremely corrosive; acute human toxicity
sulfuryl fluoride	Vikane	Fumigant	All	Acute inhalation hazard; acute human toxicity
sulprofos	Bolstar	Insecticide	All	Wildlife hazard
tebupirimfos	Aztec	Insecticide	Granular	— <sup>a</sup>
tefluthrin	Force	Insecticide	Granular	Environmental concerns
terbufos	Counter	Insecticide	All	Acute toxicity; bird toxicity
TFM	Sea Lamprey Larvacide, TFM Bar	Biocide	Impregnated material	Adequacy of label; special-use needs
tralomethrin	Scout, Striker	Insecticide	All	Toxicity to aquatic organisms
tributyltin fluoride	many	Biocide	Ready-to-use, solution	Toxicity to aquatic organisms
tributyltin methacrylate	many	Biocide	Ready-to-use, solution	Toxicity to aquatic organisms
triisopropranolamine	Toram	Herbicide	All	Hazard to nontarget organisms
triphenyltin hydroxide (TPTH)	Supertin, others	Fungicide	All	Possible mutagenic effects
zinc phosphide	many	Rodenticide	All dry formulations $\geq 10\%$ ; all bait formulations	Acute oral and inhalation toxicity; hazard to nontarget organisms

<sup>a</sup>Information not available.