



Turfgrass Series

General information on usage of pesticides

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Turf pests are living organisms that interfere in some way with turf qualities we consider important. Pests may include insects and diseases that damage turf leaves or roots or weeds that are unsightly or significantly disrupt uniformity of the lawn surface. Overall, the presence of pests in the environment is widespread and natural. When the degree of their infestation is small, they are usually ignored, but when their number or activity exceeds a certain tolerance level, they are ordinarily restrained or controlled in some manner. In turfgrass situations, the presence of pests exceeds the level of tolerance when their number or activity disrupts desired quality or uniformity of the turf.

Pests are usually separated into major groups that include weeds, diseases, and insects. When they cannot be managed by cultural practices and other natural means, the usage of pesticides/herbicides may be the only practical solution to reduce their presence.

What are pesticides?

Pesticides are chemicals used to control pests. They are usually organic compounds that interfere in some way with one or more physiological processes in the pest organism. Effective pesticides are those that reduce pest populations or their activity to a tolerable level, not necessarily to eliminate the pest completely. Complete control means killing every individual pest is usually unnecessary, costly, and harmful to the natural environment.

Pesticide labels

Just like medicines in pharmacies, all pesticides must be sold with a document called a **pesticide label** attached (Figure 1). This label provides basic information about the pesticide in the container, explains

how to use it correctly, and warns of any environmental or health hazards associated with it.



Specialty Insecticide

To be applied only by or under the direct supervision of commercial applicators responsible for insect control programs. Sale to or use by persons owning or occupying a dwelling is strictly prohibited.

Active ingredient:
chlorpyrifos: O,O-diethyl O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate44.9%
Inert ingredients:55.1%
Contains 4 pounds of chlorpyrifos per gallon.

EPA Reg. No. 62719-35 EPA Est. 464-MI-1

Precautionary Statements

Hazards to Humans and Domestic Animals

Keep Out of Reach of Children

WARNING AVISO:

Precaucion al usuario: Si usted no lee inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

May Be Fatal If Swallowed • Absorption Through Skin May Be Fatal • Causes Substantial But Temporary Eye Injury • Causes Skin Irritation

Do not get in eyes, on skin or clothing. Wear eye protection. Avoid breathing vapors and spray mist. Handle concentrate in a ventilated area. When handling concentrate, wear protective clothing such as long-sleeved shirt, long-legged pants, hat, rubber gloves and footwear resistant to aromatic solvents, i.e. neoprene or nitrile butadiene rubber. Wash thoroughly with soap

and water after handling and before eating or smoking. Remove contaminated clothing and wash before reuse. Keep away from food, feed-stuffs and water supplies.

First Aid

If swallowed: Call a physician or Poison Control Center immediately. Do not induce vomiting. Contains an aromatic petroleum solvent. Do not give anything by mouth to an unconscious person.

If on skin: Immediately wash with plenty of soap and water. Get medical attention.

If in eyes: Flush with plenty of water for 15 minutes. Get medical attention.

If inhaled: Remove to fresh air if symptoms of cholinesterase inhibition appear and get medical attention immediately.

Note to physician: Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline data are useful). Atropine, only by injection, is the preferable antidote. Oximes, such as 2-PAM/protopam, may be therapeutic if used early; however, use only in conjunction with atropine. In case of severe acute poisoning, use antidote immediately after establishing an open airway and respiration.

Environmental Hazards

This pesticide is toxic to birds and wildlife, and extremely toxic to fish and aquatic organisms. Do not apply directly to water. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. Cover or incorporate spills. Do not contaminate water by cleaning of equipment or disposal of waste. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

Physical or Chemical Hazards

Combustible - Do not use or store near heat or open flame.

Notice: Read the entire label. Use only according to label directions. Before buying or using this product, read "Warranty Disclaimer" and "Limitation of Remedies" elsewhere on this label.

In case of an emergency endangering health or the environment involving this product, call collect 517-636-4400.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before using.

Figure 1. A pesticide label provides basic information about the pesticide in the container.

All pesticide labels include directions for use that provide information on proper use and safety to achieve the best results. The directions for use state which pests the given product would control, the form in which the product should be applied, lists and describes required application equipment, pro-

vides mixing instructions, recommends a frequency of application, and so on.

Applying pesticides

Most pesticides used in turfgrass management are applied in the form of liquid sprays or solid dry granules. Because methods of pesticide application can affect human health as well as the environment, laws regulate pesticide application procedures. Some pesticides that are especially harmful to humans and the natural environment can be applied only by trained and licensed pesticide applicators and cannot be purchased by the general public in places like K-mart or Home Depot.

For the effective control of turf-grass pests, pesticides should be applied uniformly and at the proper rates. Liquid formulations are applied in water by sprayers, which must be calibrated to deliver the appropriate volume per unit area. Granular products are usually applied with specially calibrated spreaders for larger turf areas or by small hand-operated spreaders for small areas such as home lawns. Sometimes, for so called spot treatments, they can be applied directly from the container.

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