

## Appendix E

### How to Read a Pesticide Label

This appendix is verbatim from The Nature Conservancy Weed Control Methods Handbook: Tools & Techniques for Use in Natural Areas (Tu, Mandy, et. al. 2001. Wild Invasives Species Team, The Nature Conservancy) (TNC 2001). The U.S. EPA and the California EPA require all herbicide formulations to have labels that present pertinent information about their use. All herbicide applicators are legally required to follow the instructions on these labels. This appendix gives a comprehensive overview on how to interpret the information presented on labels.

### **APPENDIX 3: HOW TO READ A PESTICIDE LABEL**

All pesticides registered for use in the U.S. must have a label that has been approved by the federal Environmental Protection Agency (EPA). The label contains information about the product, including its relative toxicity, potential hazard to humans and the environment, directions for use, storage and disposal, and first aid treatment in case of exposure. Product labels are legal documents whose language is determined and approved by the EPA during the pesticide registration process. Any use of a pesticide inconsistent with the label requirements is prohibited by law.

Labels contain very specific information in language that is tightly regulated by the US EPA. The word “must” is used for actions that are required by law, while the word “should” is used for actions that are recommended but not required. One of the “Signal words” (caution, warning, danger, and poison) used by the EPA to indicate relative toxicity to humans, must appear on each label (see below).

Material Safety Data Sheets (MSDSs) are similar to product labels but need not contain the same information. While product labels are regulated and required by the EPA, MSDSs are required by the U.S. Occupational Safety and Health Administration (OSHA) for the protection of employees using pesticides or other hazardous chemicals. All chemical manufacturers must provide a MSDS to employers purchasing the chemicals. The product label and MSDS should both be included with any product. Both documents contain important and reliable information that should be thoroughly reviewed before the product is used.

#### **Label Contents**

1. **Precautionary Statements** – Pesticide labels highlight three types of hazards associated with use of the product. The “hazards to people and domestic animals” section explains if and why a pesticide is hazardous, its potential adverse effects, and safety gear that applicators are required to wear. The “environmental hazards” section discusses potential environmental damage including impacts to non-target organisms, such as fish and wildlife, and provides measures that can minimize ecological impacts. The “physical and chemical hazards” section outlines potential hazards due to the chemical and physical nature of the product, such as flammability and explosiveness.
2. **Directions for Use** – The directions outline where, when, and how much of a pesticide may be used and any special restrictions. For herbicides, it lists all plants or types of plants that the formulation in question is registered to control. The law requires compliance with these directions. An herbicide may not be used to control a species or type of plant that is not listed on its label.

**Sample Product Label**

<p><b>1</b> PRECAUTIONARY STATEMENTS</p> <p>HAZARD TO HUMANS AND DOMESTIC ANIMALS (Signal Word) _____</p> <p>_____</p> <p>_____</p> <p>ENVIRONMENTAL HAZARDS</p> <p>_____</p> <p>_____</p> <p>PHYSICAL OR CHEMICAL HAZARDS</p> <p>_____</p> <p>_____</p> <p>DIRECTIONS FOR USE: It is a violation of Federal law to use this product in a manner inconsistent with its labeling.</p> <p><b>2</b></p> <p>RESTRICTED USE PESTICIDE</p> <p><b>3</b> RE-ENTRY STATEMENT (if applicable)</p> <p><b>4</b> STORAGE AND DISPOSAL</p> <p>STORAGE _____</p> <p>_____</p> <p>DISPOSAL _____</p> <p>_____</p>	<p><b>5</b> RESTRICTED USE PESTICIDE</p> <p>Due to: [insert reason]</p> <p>For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.</p> <p>PRODUCT NAME</p> <p><b>6</b> ACTIVE INGREDIENT(S): XX.00%</p> <p>INERT INGREDIENTS: XX.00%</p> <p>TOTAL: 100.00%</p> <p>This product contains ___ lbs of ___ per gallon.</p> <p>KEEP OUT OF REACH OF CHILDREN</p> <p><b>7</b> Signal Word [Poison]</p> <p>[Skull &amp; Crossbones]</p> <p>First Aid</p> <p><b>8</b> If Swallowed _____</p> <p>If Inhaled _____</p> <p>If on Skin _____</p> <p>If in Eyes _____</p> <p>SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS</p> <p>EPA Registration No. _____ [Registrant Name]</p> <p>EPA Establishment No. _____ [Address, City, State, zip code]</p> <p><b>9</b> Net Contents _____</p>	<p><b>2</b> Directions for Use (continued)</p> <p>CROP/SITE _____</p> <p>_____</p> <p><b>10</b> WARRANTY STATEMENT</p> <p>_____</p> <p>_____</p> <p>_____</p>
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3. Reentry Statement – This section identifies the period of time following treatment when re-entry to the treated area is prohibited. If no statement is given, re-entry should not be attempted until the spray dries or the dust settles. Check with the county agricultural commissioner for local restrictions.
4. Storage and Disposal Directions – This section outlines appropriate storage and disposal procedures for unused portions of the pesticide and of the pesticide container.
5. Statement of Use Classification – Each pesticide is designated and prominently labeled as “General Use” or “Restricted Use”. “Restricted use” pesticides are those that would pose a significant threat to the applicator or the environment without further regulatory restrictions. Only certified pesticide applicators may apply “restricted use” pesticides, and additional safety precautions may be required. The status of each pesticide can be found in the U.S. EPA’s Restricted Use Products list (<http://www.epa.gov/RestProd/ropoct00.htm>). Of the herbicides

listed in this handbook, only picloram is of “restricted use.” Be sure to check for additional state restrictions (for example, certain formulations of 2,4-D are of “restricted use” in California).

6. Brand Name, Chemical or Trade Name, Common Name, Formulation, Ingredients, & Contents – The *brand name* is the name chosen by the manufacturer for marketing purposes. Often the same herbicide formulation is marketed for different uses under different brand names. For example, triclopyr amine is sold as Garlon 3A<sup>®</sup> for commercial use, but a slightly different formulation is sold as Turflon Ester<sup>®</sup> for residential use. The *chemical name* describes the molecular formula of the active ingredient. Examples of chemical names include: 3,6-dichloro-pyridinecarboxylic acid for clopyralid, or N-(phosphonomethyl) glycine for glyphosate. The *common chemical name* is for the active ingredient itself - it is not specific to the formulation. Examples of common chemical names include glyphosate and triclopyr.

Pesticides are marketed in a variety of *formulations* including emulsifiable concentrates, wettable powders, and soluble powders. Often the brand name indicates the formulation type. For example, Garlon 3A<sup>®</sup> is the amine formulation of triclopyr.

The product *ingredients* are listed as the percentage of active and “inert” ingredients in the product. The active ingredient is the pesticidally active chemical. Unlike most commonly accepted definitions of “inert”, the inert ingredients in a pesticide product include all ingredients that are not pesticidally active. This does not necessarily imply that these ingredients are non-toxic, non-flammable, or otherwise non-reactive. The *contents* describe the total product weight or liquid volume in the package.

Study	Category I	Category II	Category III	Category IV
Acute Oral	≥ 50 mg/kg	>50-500 mg/kg	>500-5000 mg/kg	>5000 mg/kg
Acute Dermal	≥ 200 mg/kg	>200-2000 mg/kg	>2000-5000 mg/kg	>5000 mg/kg
Acute Inhalation	≥ 0.05 mg/liter	>200-2000 mg/liter	>2000-5000 mg/liter	>5000 mg/liter
Eye Irritation	Corrosive or corneal involvement or irritation persisting >20 days	Corneal involvement or irritation clearing in 8-20 days	Corneal involvement or irritation clearing in < 7 days	Minimal effects clearing < 24 hrs
Skin Irritation	Corrosive	Severe irritation > 72 hrs	Moderate irritation > 72 hrs	Mild or slight irritation
<b>Signal Word</b>	<b>DANGER</b>	<b>WARNING</b>	<b>CAUTION</b>	<b>CAUTION</b>

7. Signal Word – The signal word indicates how dangerous or toxic a product can be. The signal words “danger”, “warning”, or “caution” is determined by a combination of acute toxicity studies, and the toxicity of each of the product components. Each toxicity study is assigned a toxicity category, and the highest category determines the signal word that appears on the label. Additionally, “poison” and the skull-crossbones symbol are required for products in toxicity category I for acute oral, dermal, or inhalation exposure, or for products that contain certain “inerts”.
8. Statement of Practical Treatment – This section highlights important first aid information for treating people exposed to the product.
9. Manufacturer, Registration and Establishment Numbers – The name and address on the label should be used for contacting the product manufacturer. The Registration number is the EPA number that identifies the registered product. The Establishment number identifies where the product was produced.
10. Warranty – The warranty statement is not required but often is provided by the manufacturer.

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