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# HOW TO READ AND UNDERSTAND A PESTICIDE LABEL

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Every gardener and homeowner is concerned for the safety of themselves and their family, particularly their children and pets. Using pesticides responsibly will help protect our families and ensure our gardens are family safe zones. This is particularly important as more people are growing their own fruit and vegetables.

“Pesticides are substances or mixtures of substances intended for preventing, destroying, repelling, or mitigating any pest” as defined by the Environmental Protection Agency or EPA. All pesticides, both synthetic and organic compounds, are registered by the EPA. In addition, the pesticide products are approved and labeled by state agencies. In California, the Department of Pesticide Regulation or DPR approves all products used in CA.

Examples of Pesticides:

1. Fungicides/Bactericides for disease control.
2. Insecticides for insect control.
3. Herbicides for weed control.
4. Miticides for mite control.
5. Rodenticides for rodent control.
6. Plant Growth Regulators, chemicals that regulate the growth and development of plants.

Prior to making the decision to utilize a pesticide, it is important to understand and identify the pest species. In addition, look at alternative control measures and practice Integrated Pest Management or IPM. IPM was covered in detail in the summer edition of *The Curious Gardener*; for more information on IPM, refer to that publication.

All pesticides are required to have a label attached to the container that contains **Use And Safety Information**. It is very important that the homeowner read and understand the label restrictions and use instructions prior to using a pesticide. The disclaimer “Please read and follow all label instructions” is something every gardener should practice. It is also a good practice to keep the label attached to the pesticide container when not in use. In fact, this practice is actually the law. Keeping the label attached prevents accidents or misuse of the product. Please note that many pesticide labels are in a booklet format attached to the container. They can be easily read if you peel back the edge and open the booklet. The EPA has mandated that all pesticide labels contain consistent language. This is helpful to consumers and in many cases prevents misuse of pesticides.



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Pesticide labels will all have a **Trade Name** or **Brand Name**. The **Active Ingredient** will also be listed on the front page of the label. The active ingredient is the actual substance that controls the pest. An example would be a copper-based fungicide. Copper is the active ingredient. The active ingredient will be listed as a percentage. Many different formulations and percentages are marketed for home use. Right below the active ingredient, they will list other ingredients with little detail. These are “carriers” such as emulsifiers, oil, or water. Copper is one of the first pesticides and has been documented to be used as a fungicide/bactericide for over 150 years. Copper, like many pesticides, is available in many different forms.

**Signal Words** help identify the toxicity of the product.

1. Caution = mildly toxic
2. Warning = moderately toxic
3. Danger = highly toxic

**Directions for use** are printed in great detail on a pesticide label. Basically, instructions are outlined on how and where to use the product. The label will state which plants a product can be used on, which pests the product controls, what rate, and also timing of the application. These directions prevent environmental damage, protect the environment, and protect beneficial insects such as bees. These directions are also designed to keep your family safe. Please note: not following product label instructions is dangerous and illegal.

**Personal Protective Equipment**, or PPE, is listed. In most cases, it is recommended that you wear shoes, long sleeved shirt, pants, and eye protection. In some cases, additional equipment may be necessary, such as the use of a respirator. This applies to synthetic chemicals and organic pesticide products. Following these procedures will prevent or lessen the chance of exposure to the pesticide. Pesticide exposure can be in the form of oral (ingested), dermal (on skin) or inhalation (breathed into lungs).

**Mixing instructions** are given. Many pesticides are actually concentrated materials that require dilution. It is important to understand that the majority of pesticide exposure occurs during mixing of a concentrated pesticide. Don't be fooled into thinking that organic pesticides have little or no potential to harm your family. Many organic herbicides marketed today cause skin irritation and if inhaled cause lung damage. Ready to Use (RTU) products come in a form that does not require mixing and these can lessen the chance of exposure since they do not need to be mixed. Most are labeled with the acronym RTU.

**Storage and Disposal** instructions are listed and it's important the homeowner understands the recommendations. Please ensure that all pesticides are stored in a secure place that children cannot access. When disposing of the empty container read the label to make sure you are following procedure.

**Precautionary Statements** will be outlined on the label. This gives any specific hazards to avoid when using the material. An example would be, do not spray in windy conditions to prevent spray drift. Understanding this information will give you the proper understanding for using the pesticide safely.

**First Aid** instructions outline what to do if the product comes in contact with your skin, eyes, or mouth, or is inhaled into your lungs. All labels have the contact number for the National Pesticide Information Center (NPIC). For emergencies, the Poison Control Center contact number is listed. This is a 24/7 number. Each pesticide will have a specific EPA Registration number on the front page of the container. In an emergency giving this EPA Registration number to poison control will enable them to quickly give treatment advice.

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UC Master Gardeners of Placer County are University of California Cooperative Extension (UCCE) ambassadors to the Placer County home gardening community. Master Gardeners promote environmental awareness and sustainable landscape practices, and extend research-based gardening and composting information to the public through educational outreach. UCCE is part of the Division of Agriculture and Natural Resources (ANR) of the University of California.

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If you would like further information regarding this topic please refer to the resources listed below. In addition remember the golden rule to always read and follow pesticide label instructions.

The National Pesticide Information Center is a valuable resource: <http://www.npic.orst.edu/>

The University of California has a Pest Note referencing garden chemicals available: <https://ipm.ucanr.edu/QT/gardenchemicalscard.html>

## References

- Flint, Mary Louise. *IPM in Practice Principles and Methods of Integrated Pest Management*. UCANR Publication 3418. 2012. <https://anrcatalog.ucanr.edu/Details.aspx?itemNo=3418>
- *Reading Pesticide Labels*. National Pesticide Information Center. January 20, 2021. <http://npic.orst.edu/health/readlabel.html>
- *Garden Chemicals: Safe Use & Disposal*. University of California Agriculture and Natural Resources UC IPM. September 2018. [https://ipm.ucanr.edu/legacy\\_assets/pdf/qt/qtgardenchemicals.pdf](https://ipm.ucanr.edu/legacy_assets/pdf/qt/qtgardenchemicals.pdf)

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