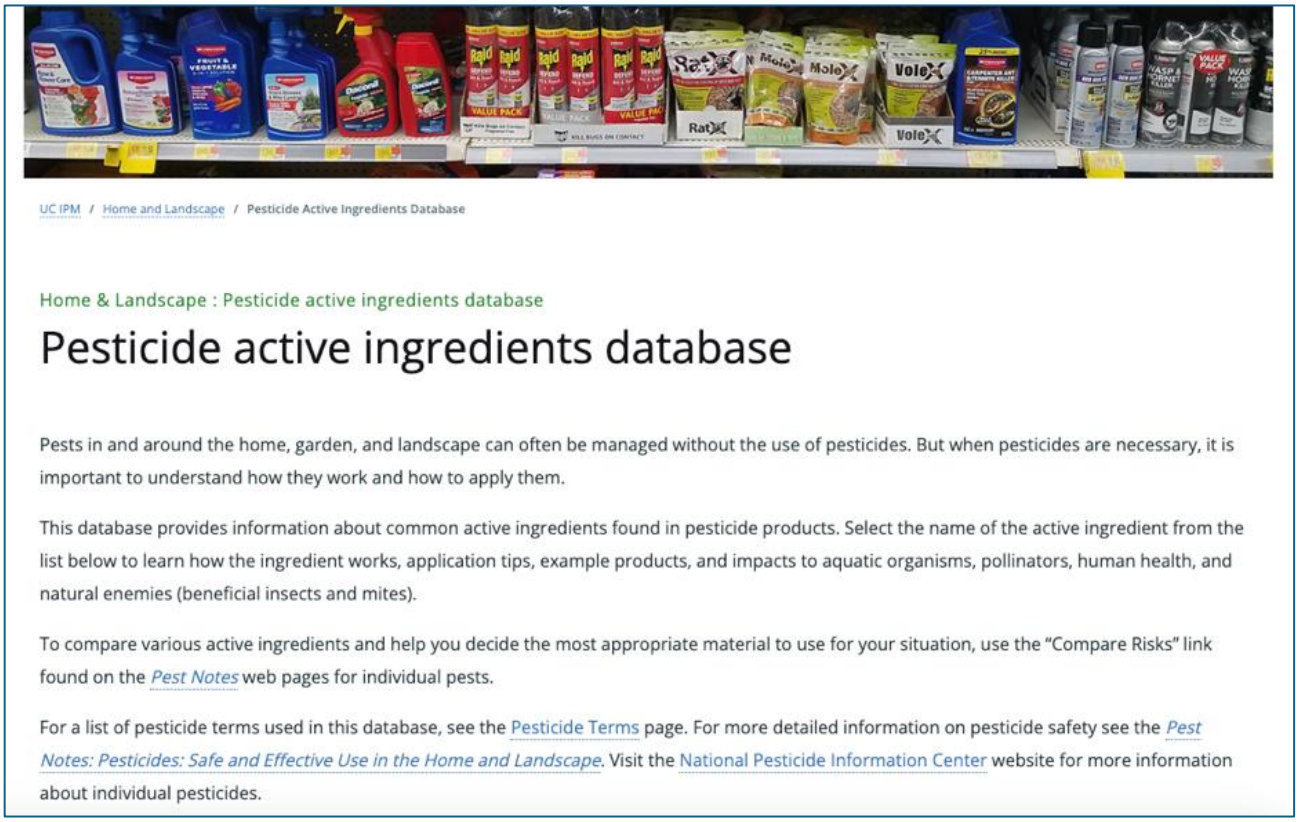
How To Use the Pesticide Active Ingredient Database

The ***Pesticide Active Ingredient Database*** was designed by UC IPM for nonagricultural audiences applying or considering the application of pesticides around homes, gardens, structures, buildings, landscapes, and lawns. Users of this database include the general public, Master Gardeners, retail nursery and garden center staff, pest management professionals, landscapers, school site staff, public agencies, and more.

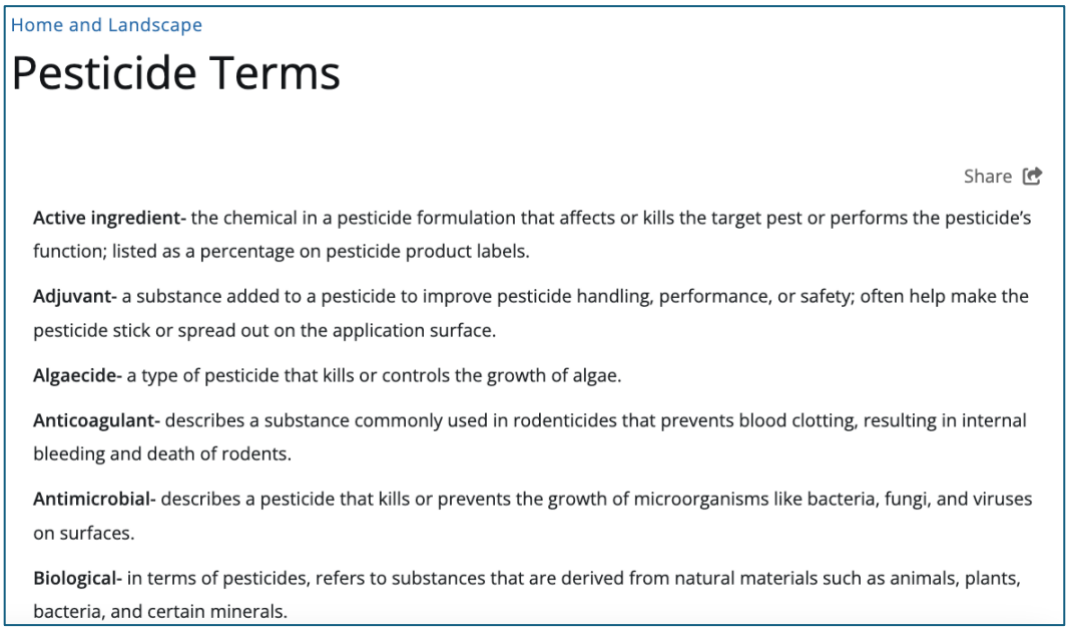
The purpose of the database is to provide users with easy-to-understand information about commonly available pesticides, how they work, what pests they may control, and their toxicity to people, water quality, or pollinators.

This guide explains how to use the database and its various features.

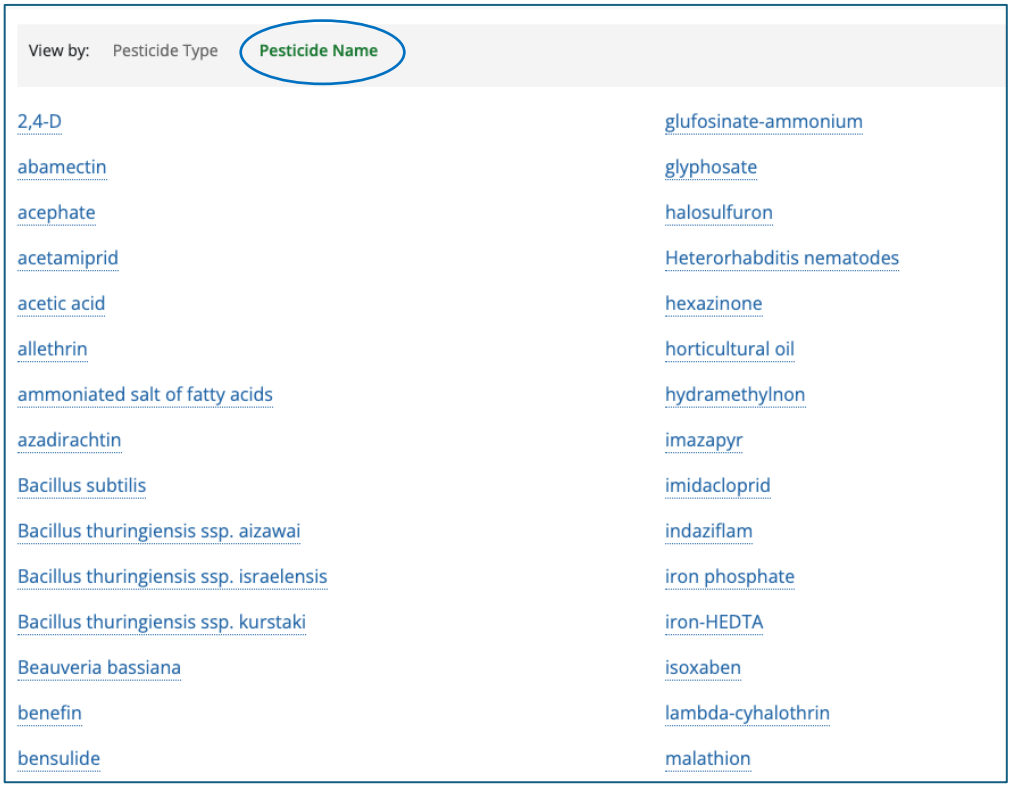
1. This is the landing page for the database. The introduction briefly explains how to use the database and includes links to additional resources.

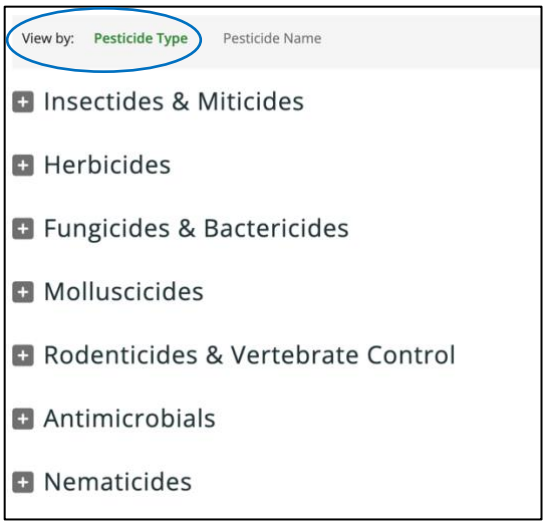


2. One of these resources is the **Pesticide Terms** page. This page will help you understand pesticide terminology used in the database.



3. On the landing page, there is an option to **view by pesticide name** or **pesticide type**. The default view shows the active ingredients grouped and listed by pesticide type (insecticides & miticides, herbicides, etc.). To see all active ingredients sorted alphabetically from A to Z, not in groups, select "View by: Pesticide Name".





4. Selecting an active ingredient from the landing page will take users to an **active ingredient page**. Each of these pages contain the information listed below. On the left side of the page, most of these are listed under "On this page" which will allow users to jump down to various sections.
    A. **Common name** of the active ingredient usually seen on the label
    B. Any **synonyms** or other names it may go by
    C. **Pesticide type** (herbicide, fungicide, insecticide, etc.)
    D. **How does this active ingredient work**? which briefly explains how the active ingredient affects the pest(s) it is designed to control. Some active ingredient pages may also include links to additional resources, such as this one which refers readers to the National Pesticide Information Center (NPIC) website
    E. **Potential hazards** this active ingredient poses to the environment, honey bees, and people or other mammals. Below the table is a legend that defines what the letters or symbols in the table represent
    F. Some pages include a **Notes on Use** section where any restrictions or special instructions about the active ingredient will be stated
    G. **Safety Precautions** which provide some general advice for using pesticides safely. Always read the pesticide product label for specific safety and personal protective equipment (PPE) requirements
    H. **Pest Notes and Example Products** allows users to see the UC IPM *Pest Notes* fact sheets that mention the active ingredient for control of a specific pest. For example, this active ingredient is mentioned in the *Pest Notes: Catchweed Bedstraw* as a management option. Next on the page are various example products that contain this active ingredient, separated by their availability to consumers versus licensed professionals

I. Several of the sections listed above contain footnote references to sources of information, explanations or disclaimers

Home and Landscape: Pesticide Active Ingredients Database

A. 2,4-D

B. *Synonyms: 2,4-DP, 2,4-D amine, 2,4-D ester*

On This Page

Pesticide Type **C.**

Herbicide

See the Pesticide Terms page for definitions of terms used in this database.

How Does This Active Ingredient Work? **D.**

This active ingredient is a systemic, selective, preemergence or early postemergence herbicide and plant growth regulator (PGR) that is used mostly for broadleaf weeds and shrubs. 2,4-D mimics a plant growth hormone. It interferes with plant cell formation that results in abnormal growth. To learn more, see the NPIC fact sheet for this active ingredient.

E.

Potential Hazards[1]

Environment			People or other mammals	
Water quality[2] (aquatic wildlife)	Natural enemies[3] (beneficials)	Honey bees[4]	Acute[5]	Chronic[6]
L	—	II	M	

Hazards Ratings: VL=Very low, L=Low, LM=Low to Moderate, M=Moderate, LH=Low to High, MH=Moderate to High, H=High, VH=Very High, N/A=Not Applicable, N=None, NKR=No Known Risk, — = No data

Honey Bee Ratings:

I Do not apply or allow to drift to plants that are flowering including weeds. Do not allow pesticide to contaminate water accessible to bees including puddles.

II Do not apply or allow to drift to plants that are flowering including weeds, except when the application is made between sunset and midnight if allowed by the pesticide label and regulations. Do not allow pesticide to contaminate water accessible to bees including puddles.

III No bee precaution, except when required by the pesticide label or regulations.

F.

Notes on Use

IMPORTANT NOTICE (August 5, 2024): The United States Environmental Protection Agency (US EPA) has issued an emergency order suspending the registrations of all pesticide products that contain the use of DCPA (dimethyl tetrachloroterephthalate), also known as Dacthal. This order will prohibit the use of existing stocks of DCPA for any purpose, effective immediately. This decision has been made in response to its identified health risks, recent health assessments, and safety evaluations that highlight the potential dangers associated with DCPA.

Read the Emergency Order on the US EPA website at https://www.federalregister.gov/documents/2024/08/07/2024-17431/pesticides-emergency-order-suspending-the-registrations-of-all-pesticide-products-containing.

G.

Safety Precautions

Read the product label for specific information on personal protective equipment (PPE) and safety requirements. Note that many consumer pesticide products do not include information about PPE on the label. You should still wear basic PPE to protect yourself from exposure, such as chemical resistant gloves, long sleeves, and goggles. Learn about safe use and disposal of pesticides.

Warning on the use of pesticides.

H.

Pest Notes and Example Products

This active ingredient is mentioned in the following *Pest Notes*:

Catchweed Bedstraw, Clovers, Common Knotweed, Common Purslane, Creeping Woodsorrel and Bermuda Buttercup, Dandelion, Dyer's Woad, Field Bindweed, Mallows, Perennial Pepperweed, Plantains, Poison Hemlock, Poison Oak, Puncturevine, Weed Management in Lawns, Yellow Starthistle

Example home, garden or landscape use products[7]:

Ortho Weed B-Gon Lawn Weed Killer, Turf Builder Weed & Feed, Vigoro Weed & Feed

Example professional use products:

Surge Broadleaf Herbicide for Turf, 2, 4-D Amine 4 Herbicide, Trimec Classic Broadleaf Herbicide, Escalade

I.

1 Potential hazard ratings may vary depending on the species, environmental conditions, application rate and type (i.e., bait vs spray), application location (i.e., indoors vs outdoors), and pesticide formulation (i.e., rodenticides are not applied in ways that would pose risks to water quality or honey bees). Ratings may not be available for all active ingredients due to these factors. Toxicity ratings may be averages of reported effects and should only be used as a general guide. Missing ratings will be added when data is available.

2 Water quality ratings are from the National Pesticide Information Center; U.S. Environmental Protection Agency; and USDA Natural Resources Conservation Services (NRCS) WIN-PST WaterTox database.

3 Impact on natural enemies ratings are from the UC IPM Pest Management Guidelines for Agriculture database and the USU Pollinator and Beneficials Toxicity Table.

4 Honey bee ratings are from the UC IPM Bee Precaution Pesticide Ratings.

5 Acute (short-term) oral toxicity ratings for people and other mammals are based on LD50 and US EPA Acute Toxicity Ratings system: H = Highly Toxic (LD50 < 50 mg/kg), M = Moderately Toxic (LD50: 50-500 mg/kg), L = Slightly Toxic (LD50: 500-5000 mg/kg), VL = Not Acutely Toxic (LD50 > 5000 mg/kg).

6 Chronic (long-term) toxicity information for people and other mammals is from the California Prop 65 list of chemicals known to cause cancer, birth defects, or other reproductive harm; and the U.S. Environmental Protection Agency list of chemicals evaluated for carcinogenic potential. If an active ingredient is listed on either list as a likely or confirmed carcinogen, it will be noted in the Potential Hazards table. If nothing shows in the Chronic column, it means the active ingredient is not found on either list, is listed as an unlikely carcinogen, or has been determined to be noncarcinogenic.

7 Example consumer and professional products are derived from the California Department of Pesticide Regulation database and annual retail shelf survey by the UC Office of Pesticide Information and Coordination. Some of this