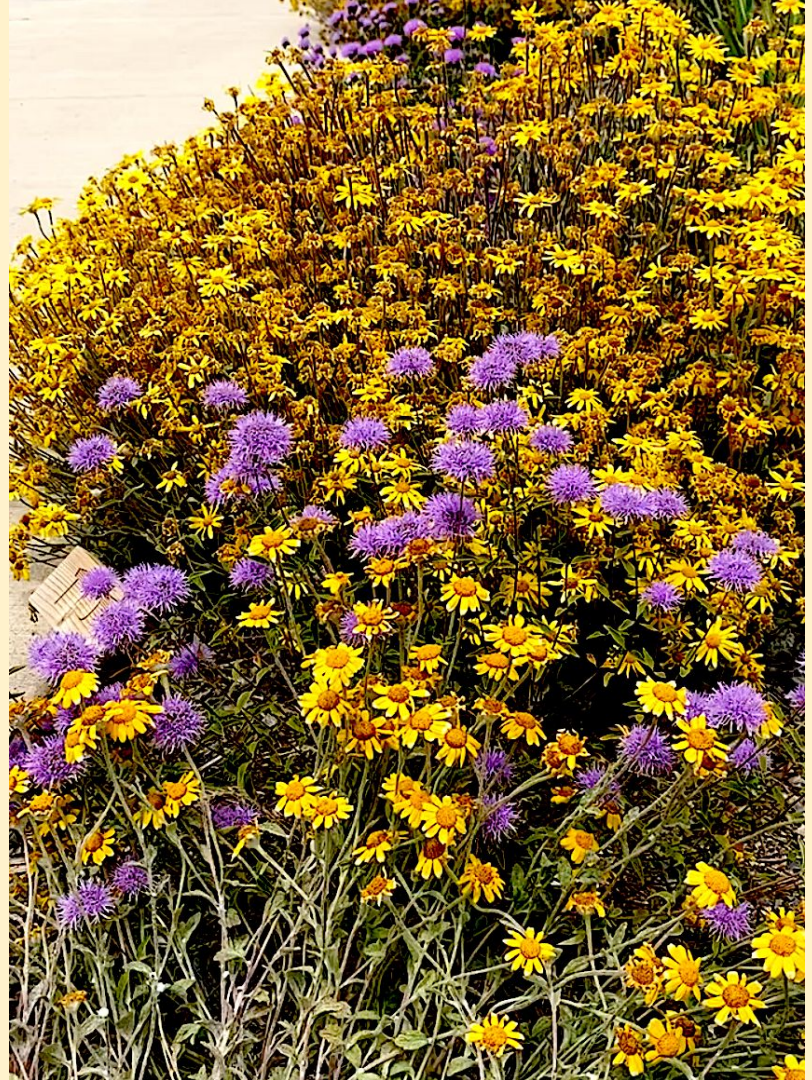


*Organic & Native:
What
Why
& How*

Kristina Lefever





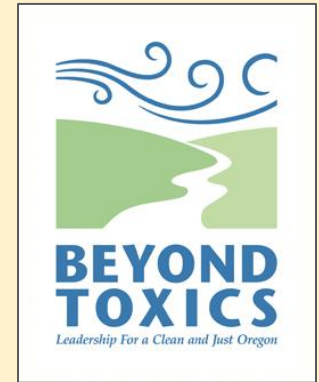
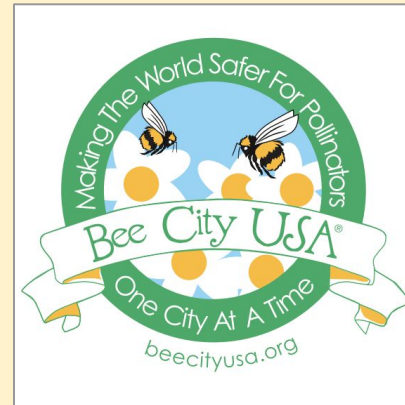
**Gardener: Heirloom Garden
at North Mountain Park**

Resources:

- <https://ashlandorgardenclub.org/category/pollinator-gardening/>
- <https://ashlandorgardenclub.org/category/wildflowers-native-plants/>



312 N. Main, Phoenix



Disclaimer: Not an 'ist'

Today's Topics:

- ❖ What does “organic” mean?
- ❖ What does “native” mean?
- ❖ Why grow organic & native gardens?
- ❖ How can we make a difference?
- ❖ **Learn More:** Resources (links) & Presentation Pdf
- ❖ Conversation



Kristina Lefever

Sweat Bee on Bolander's Sunflower

Organic: What Does It Mean?

Per Oxford Languages

Or·gan·ic /ôr'ganik/

adjective

1. relating to or derived from **living matter**.
"organic soils"
2. (of **food** or farming methods) produced or involving production without the use of chemical fertilizers, **pesticides**, or other artificial agents.
"organic farming" "**organic gardening**"



Why Organic?

- To eliminate “synthetic” pesticides that can harm people, pets, pollinators, birds, aquatic creatures, and more

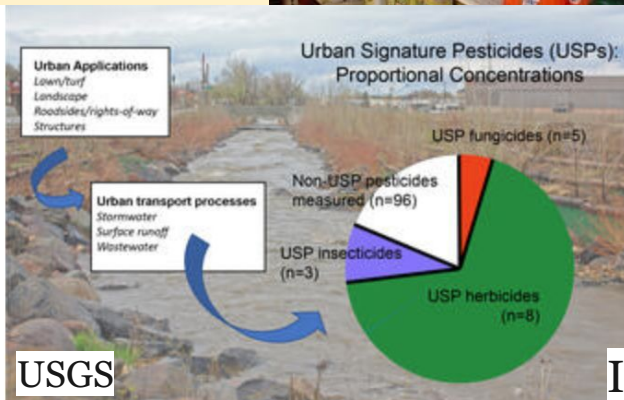


Health Effects of 40 Commonly Used Lawn Pesticides

	Health Effects						
	Cancer	Endocrine Disruption	Reproductive Effects	Neurotoxicity	Kidney/Liver Damage	Sensitizer/Irritant	Birth Defects
Herbicides							
2,4-D*	X ⁴	X ¹⁰	X ⁷	X ⁶	X ⁹	X ¹	X ¹¹
Atrazine †	X ⁹	X ⁶	X ⁸	X ¹¹	X ¹¹	X ¹¹	X ⁸
Benfluralin	X ¹	X ¹			X ¹	X ¹	
Bensulfide				X ²	X ¹	X ¹	
Clopyralid			X ¹			X ¹	X ¹
Dicamba*	Possible ¹⁵		X ¹	X ²	X ²	X ¹	X ¹
Diquat Dibromide			X ¹²		X ¹¹	X ¹	
Dithiopyr						X ¹	
Fluazipop-p-butyl			X ¹		X ¹		X ¹
Glyphosate*	X ¹²	X ⁸	X ¹		X ³	X ¹	X ⁷
Imazapyr	Suggestive ^{1,8}				X ¹	X ¹	
Isoxaben	X ¹				X ²		Possible ¹¹
MCPA	Possible ¹⁹	X ⁶	X ²	X ¹	X ¹¹	X ¹	
Mecoprop (MCPP)*	Possible ¹	X ⁶	X ¹		X ³	X ¹	X ¹
Oxadiazon	X ³	X ¹	X ¹	Possible ¹²	X ¹		X ¹
Oxyfluorfen	X ¹		X ¹¹		X ¹¹	X ¹¹	X ¹¹
Pendimethalin*	Possible ¹		X ¹		X ³	X ¹	X ¹
Proflaminate	X ¹	Suggestive ¹	Possible ¹⁴	X ¹			Possible ¹⁶
Sulfentrazone			X ¹³	Possible ¹³		X ¹³	X ¹³
Triclopyr			X ¹		X ³	X ¹	X ¹
Trifluralin	Possible ¹	X ⁸	X ¹	X ¹²	X ¹	X ¹	
Insecticides							
Abamectin/ Avermectin B1			X ¹¹	X ¹¹			X ⁹
Acephate*	Possible ¹	X ¹	X ¹¹	X ⁶		X ¹	
Bifenthrin **	Possible ¹	Suspected ^{6,11}		X ⁶		X ¹	X ³
Carbaryl	X ¹	X ¹⁰	X ⁸	X ¹	X ¹¹	X ¹¹	X ¹
Cyfluthrin*		Possible ¹⁷	X ⁹	X ⁹	X ⁹		
Deltamethrin*		X ¹⁰		X ⁸		X ⁹	
Fipronil	Possible ¹	X ⁶	X ⁸	X ⁶	X ⁸	X ⁸	
Imidacloprid †		X ⁶	X ¹	Possible ¹⁴	X ²		X ¹
Malathion*	Probable ¹²	X ¹⁰	X ¹¹	X ²	X ²	X ²	X ²
Permethrin **	X ¹	Suspected ^{6,11}	X ¹²	X ^{1,9}	X ³	X ¹	
Trichlorfon	X ¹	X ⁶	X ¹¹	X ²	X ³	X ¹¹	X ³
Fungicides							
Azoxystrobin					X ²	X ¹	
Chlorothalonil	X ¹		X ¹	X ¹⁴	X ⁹	X ¹	
Metaxyl	Possible ¹⁰	Possible ¹⁰			X ⁹	X ¹	
Myclobutanil		Probable ⁶	X ¹		X ²		
Propiconazole	Possible ¹	X ⁶	X ²		X ¹	X ¹	
Sulfur β						X ¹	
Thiophanate methyl	X ¹	X ¹	X ¹	Suspected ¹	X ¹	X ¹	X ¹
Ziram	Suggestive ¹	Suspected ⁶		X ²	X ²	X ¹	
Totals:	26	24	29	24	32	33	21

Why Organic?

- To reduce use of petroleum (ingredient, plastic / bottles, drilling, transporting, processing)
- To improve aesthetics
- To protect water quality



Sources/Usage: Public Domain.

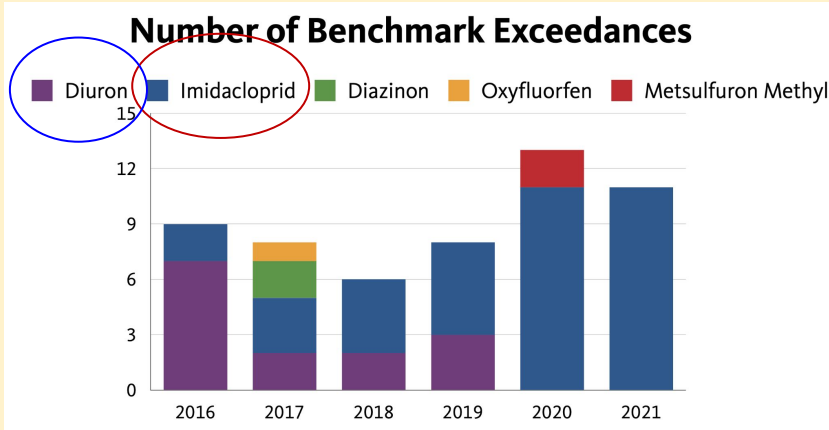
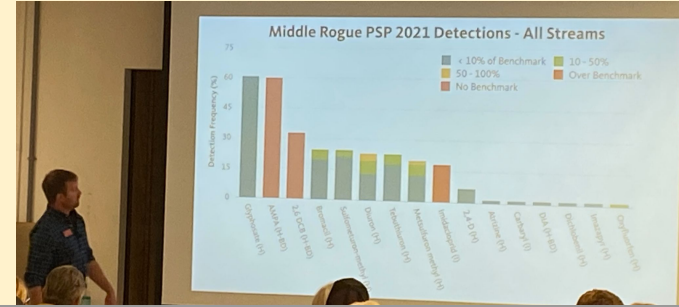
Imidacloprid and diuron

Of 108 pesticides analyzed, 16 urban signature pesticides (USPs) were consistently detected in small urban streams. [“link”](#)

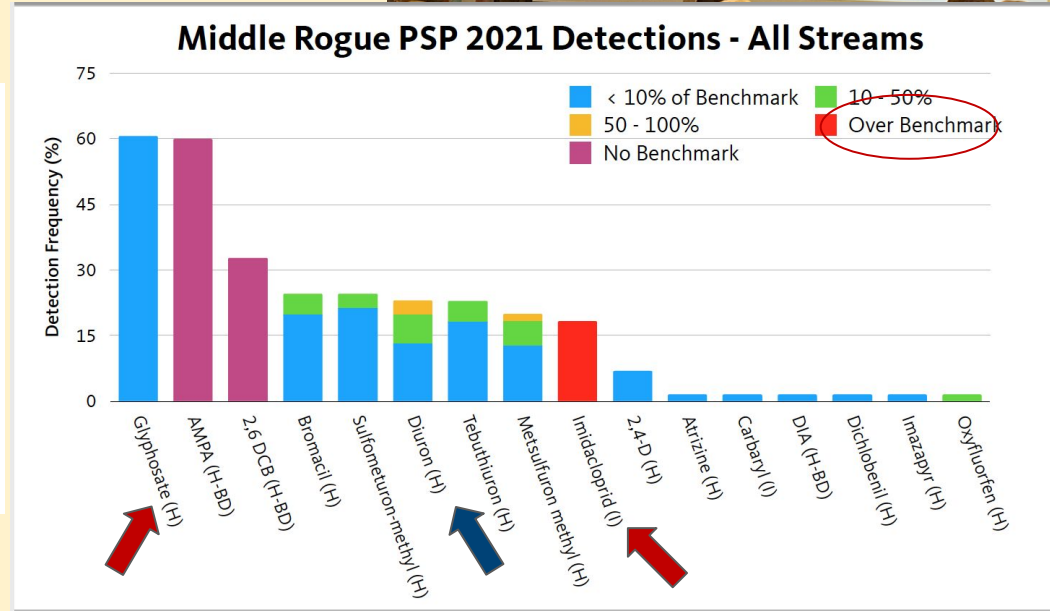


And Here Too!

Middle Rogue Pesticide Stewardship Partnership (MRPSP) presentation - November 2022



Diuron decreasing, Imidacloprid increasing



What is a Pesticide?

A substance used for destroying insects or other organisms **harmful*** to cultivated plants or to animals. (** as defined by humans*)

- Dictionary

A substance meant to control pests (including weeds). The term includes all of the following: **herbicide**, **insecticide**, nematicide, molluscicide, piscicide, avicide, rodenticide, bactericide, insect repellent, animal repellent, antimicrobial, **fungicide**, disinfectant (antimicrobial), and sanitizer.

- Wikipedia

What is a Pesticide?

A substance used for destroying insects or to cultivated plants or to animals. (** as defined*)

- Dictionary

A substance meant to control pests (including weeds). It includes all of the following: **herbicide**, **insecticide**, nematocide, molluscicide, piscicide, avicide, rodenticide, bactericide, insect animal repellent, **antimicrobial**, **fungicide**, **disinfectant** (anti) and **sanitizer**.

- Wikipedia



Common Pesticides To Kill

- ❑ Weeds
 - Preen Weed Control
 - Roundup
 - Weed and Feed

- ❑ Insects
 - “Neonicotinoids”

- ❑ Fungus
 - All in One Rose and Flower Care



"The Label is the Law"

Unlike most other types of product labels, **pesticide labels are legally enforceable**, and all of them carry the statement: "It is a violation of Federal law to use this product in a manner inconsistent with its labeling."

FRUIT Ash, Shamel, White Birch, European white, Paper, River Birch, Norway Spruce, Bottle tree, Carrot wood	FRUIT Silver Dollar Magnolia Ficus, Mini Star Jasmine White Pinkish tree Gingko-Maidenhair tree Hawthorn, Green	FRUIT Vincetoxicum Magnolia, Chinen Star Jasmine, Pine Red, Scarlet, Willow Tree Flour, Queen Pine, Asian, Beach	FRUIT Sourwood, dwarf Sourwood Red Colorado, Dwarf Alberta, Dwarf globe Elm, Ginkgo, Norway Spruce, Hoop, Hoop
FRUIT AND VEGETABLES Asparagus Broccoli Black-Eyed Peas Brussels Sprouts Cabbage Cantaloupes Carrots	FRUIT AND VEGETABLES Cauliflower Cucurbit Eggplant Fiddleheads Figs Green Peas Kale	FRUIT AND VEGETABLES Lentils Lima Beans Mustard Greens Olives Onions Peppers Pistachios Radishes	FRUIT AND VEGETABLES Southern Peas (Cow Peas) Snap Beans Tomatoes Turnip Greens Watermelon
NON-BEARING FRUIT AND NOT TREES AND PLANTS* Almond Apple Apricot Arundo Banana Blackberry Blueberry Cane Cherry, Sweet, Sour Chestnut, Chinese Chestnut, Japanese *Non-bearing fruit and trees and plants are listed as plants that will not bear fruit at or after one year after treatment.	NON-BEARING FRUIT AND NOT TREES AND PLANTS* Cranapple Currant Dewberry Elderberry Highberry Fig Gooseberry Grape, American Cherry European Grapefruit Guava Peach Pear Pineapple Plum Raspberry Rhubarb Russet Sourwood Silver Sage Tangerine-flowering	NON-BEARING FRUIT AND NOT TREES AND PLANTS* Kwila Lemon Lemonberry Macadamia nut Mandarin Nectarine Peach, Russian Orange Pineapple Pistachio Plum Pomegranate Prune Raspberry Tangelo Tangerine Walnut, Black, English	NON-BEARING FRUIT AND NOT TREES AND PLANTS* Podocarpus Redbud, Eastern Red Cedar, Eastern Tulipree Willow

PRECAUTIONARY STATEMENTS
Hazards to Humans and Domestic Animals
CAUTION
Causes moderate eye irritation. Harmful if swallowed, inhaled or absorbed through the skin. Avoid contact with eyes, skin or clothing. Users should remove clothing if possible if pesticide gets inside. Then wash thoroughly and put on clean clothing. Prolonged or frequently repeated contact may cause allergic reaction in persons so inclined. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

FIRST AID
IF SWALLOWED:
*If swallowed, do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
IF SWALLOWED:
*If swallowed, do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING:
*If on skin or clothing, wash immediately with plenty of water for 15-20 minutes.
IF IN EYES:
*If in eyes, rinse immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
IF INHALED:
*If inhaled, get fresh air immediately. Move to an open air place. If breathing is difficult, call a poison control center or doctor for treatment advice.

Environmental Hazards
This pesticide is extremely toxic to freshwater marine and estuarine fish and aquatic invertebrates including shrimp and oyster. Do not apply directly to water. Do not apply in a manner which will directly expose insects, birds, stream, streams, rivers, ponds, lakes, or other surface waters. Do not apply to water when disposing of equipment residues or rinsate. To protect the environment, do not allow pesticide to enter or spill into storm drains, drainage ditches, gutters or surface waters. Applying the product in calm weather will help to ensure that wind does not blow particles of the treatment area. Sweeping any product that lands in storm drains, or other, back onto the treated area of the garden will help to prevent run-off to water bodies or drainage systems.

NON-TARGET ORGANISM ADVISORY STATEMENT: This product is toxic to plants and may adversely impact the range and habit of non-target organisms, including pollinators. To avoid adverse to the treated area, protect the range and habit of non-target organisms by following label directions intended to minimize off-target effects.

KEEP OUT OF REACH OF CHILDREN
CAUTION
See container label for First Aid and additional Precautionary Statements
*See Use Directions for complete list of treated weeds.

DIRECTIONS FOR USE
It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Product Information
Preen Garden Weed Preventer prevents most weeds from germinating in flower and vegetable gardens, of ground cover and around trees and shrubs. Although Preen Garden Weed Preventer will not kill existing weeds, it will prevent new listed weeds from sprouting, eliminating the need for difficult and time-consuming hand weeding. Without weeds, your valuable plants can grow larger and stronger. Your beds will stay neat as long as you.

PRECAUTIONS AND RESTRICTIONS
Not for use on plants being grown for sale or for other commercial use, or for commercial seed production or for research purposes. For use on plants intended for aesthetic purposes or chemical modification and being grown in ornamental gardens.
Do not apply this product in a way that will contact any person or pet, either directly or through drift. Keep people and pets out of the area during application.
Do not apply to Asparagus, Myrica or Ficus unless it is well established, as injury may result. Do not apply Preen Garden Weed Preventer to much soil or to soils containing more than 10% organic matter. Do not over-apply; they may occur to subsequent crops which are sensitive to Preen Garden Weed Preventer. Do not use with crops other than those listed on this label. This product is not for use on lawns, nor is it for use on protected areas, such as greenhouses. To prevent possible staining to ornamental surfaces, i.e., concrete, stone, brick, vinyl surfaces, etc., sweep up stray granules as soon as possible.

ENTRY RESTRICTIONS
Do not allow people or pets to enter the treated area until weeds have died. If product is watered-in, do not enter the treated area (except those involved in the watering) until the watering is complete and the surface is dry.

WEED PREVENTER

STOP WEEDS* Before They Start!

1-800-233-1067

Not for Use on Lawns

KEEP OUT OF REACH OF CHILDREN
CAUTION
See container label for First Aid and additional Precautionary Statements
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STOP WEEDS* Before They Start!

PRECAUTIONARY STATEMENTS
Hazards to Humans and Domestic Animals
CAUTION
Causes moderate eye irritation. Harmful if swallowed, inhaled or absorbed through the skin. Avoid contact with eyes, skin or clothing. Users should remove clothing if possible if pesticide gets inside. Then wash thoroughly and put on clean clothing. Prolonged or frequently repeated contact may cause allergic reaction in persons so inclined. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

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Environmental Hazards
This pesticide is extremely toxic to freshwater marine and estuarine fish and aquatic invertebrates including shrimp and oyster. Do not apply directly to water. Do not apply in a manner which will directly expose insects, birds, stream, streams, rivers, ponds, lakes, or other surface waters. Do not apply to water when disposing of equipment residues or rinsate. To protect the environment, do not allow pesticide to enter or spill into storm drains, drainage ditches, gutters or surface waters. Applying the product in calm weather will help to ensure that wind does not blow particles of the treatment area. Sweeping any product that lands in storm drains, or other, back onto the treated area of the garden will help to prevent run-off to water bodies or drainage systems.

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KEEP OUT OF REACH OF CHILDREN
CAUTION
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*See Use Directions for complete list of treated weeds.

DIRECTIONS FOR USE
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Product Information
Preen Garden Weed Preventer prevents most weeds from germinating in flower and vegetable gardens, of ground cover and around trees and shrubs. Although Preen Garden Weed Preventer will not kill existing weeds, it will prevent new listed weeds from sprouting, eliminating the need for difficult and time-consuming hand weeding. Without weeds, your valuable plants can grow larger and stronger. Your beds will stay neat as long as you.

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ENTRY RESTRICTIONS
Do not allow people or pets to enter the treated area until weeds have died. If product is watered-in, do not enter the treated area (except those involved in the watering) until the watering is complete and the surface is dry.

Annual Weeds controlled

Annual Weeds
Barnyard Grass
Chickweed
Cyperus
Dandelion
Fescue
Galium
Goosegrass
Lamium
Lamb's Quarters
Ligularia
Mint
Pigweed
Ragwort
Ragweed
Rumex
Sedum
Sowthistle
Spurge
St. John's Wort
Tansy
Thistle
Viper's Bugloss
Wormwood
Yarrow

Other Weeds controlled
Barnyard Grass
Chickweed
Cyperus
Dandelion
Fescue
Galium
Goosegrass
Lamium
Lamb's Quarters
Ligularia
Mint
Pigweed
Ragwort
Ragweed
Rumex
Sedum
Sowthistle
Spurge
St. John's Wort
Tansy
Thistle
Viper's Bugloss
Wormwood
Yarrow

How to Apply Preen Garden Weed Preventer
Apply Preen Garden Weed Preventer evenly over the entire soil surface, at the rate of 1/2 lb. per 100 sq. ft. Use a broadcast spreader or apply by hand. Sweep granules into soil surface. Water thoroughly. Do not apply to wet soil. Do not apply to soil that is wet or saturated. Do not apply to soil that is covered with snow or ice. Do not apply to soil that is covered with mulch or other material. Do not apply to soil that is covered with grass or other vegetation. Do not apply to soil that is covered with weeds or other plants. Do not apply to soil that is covered with rocks or other debris. Do not apply to soil that is covered with water. Do not apply to soil that is covered with animals or birds. Do not apply to soil that is covered with people or pets. Do not apply to soil that is covered with anything else that you do not want to treat.

Applying Around Established Plants and Transplants
To treat flower beds, ground covers, ornamental grasses, shrubs, trees and lawns, apply Preen Garden Weed Preventer evenly over the entire soil surface, at the rate of 1/2 lb. per 100 sq. ft. Use a broadcast spreader or apply by hand. Sweep granules into soil surface. Water thoroughly. Do not apply to wet soil. Do not apply to soil that is wet or saturated. Do not apply to soil that is covered with snow or ice. Do not apply to soil that is covered with mulch or other material. Do not apply to soil that is covered with grass or other vegetation. Do not apply to soil that is covered with weeds or other plants. Do not apply to soil that is covered with rocks or other debris. Do not apply to soil that is covered with water. Do not apply to soil that is covered with animals or birds. Do not apply to soil that is covered with people or pets. Do not apply to soil that is covered with anything else that you do not want to treat.

Surface Application Rate: Sprinkle Preen Garden Weed Preventer as shown on soil surface.

Applying Preen Garden Weed Preventer With Mow
For best weed control, apply Preen Garden Weed Preventer after spreading mow on your flower and lawn areas. Sprinkle Preen Garden Weed Preventer on top of mow (if surface area is not completely dry).

Environmental Hazards
This pesticide is extremely toxic to freshwater marine and estuarine fish and aquatic invertebrates including shrimp and oyster. Do not apply directly to water. Do not apply in a manner which will directly expose insects, birds, stream, streams, rivers, ponds, lakes, or other surface waters. Do not apply to water when disposing of equipment residues or rinsate. To protect the environment, do not allow pesticide to enter or spill into storm drains, drainage ditches, gutters or surface waters. Applying the product in calm weather will help to ensure that wind does not blow particles of the treatment area. Sweeping any product that lands in storm drains, or other, back onto the treated area of the garden will help to prevent run-off to water bodies or drainage systems.

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KEEP OUT OF REACH OF CHILDREN
CAUTION
See container label for First Aid and additional Precautionary Statements
*See Use Directions for complete list of treated weeds.

DIRECTIONS FOR USE
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Product Information
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ENTRY RESTRICTIONS
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Killing Weeds vs. Weed Prevention

Prevention is the best way to control weeds. It is easier to prevent weeds from germinating than it is to kill them after they have already started. Preen Garden Weed Preventer is a preventive herbicide that keeps weeds from germinating in the first place. It is a natural, non-toxic, and safe way to keep your garden looking great all year long.

The Preen Routine: Easy Steps to Weed Prevention

1. Mow or rake your lawn. 2. Apply Preen Garden Weed Preventer. 3. Water thoroughly. 4. Repeat every 3 months.

PRECAUTIONARY STATEMENTS
Hazards to Humans and Domestic Animals
CAUTION
Causes moderate eye irritation. Harmful if swallowed, inhaled or absorbed through the skin. Avoid contact with eyes, skin or clothing. Users should remove clothing if possible if pesticide gets inside. Then wash thoroughly and put on clean clothing. Prolonged or frequently repeated contact may cause allergic reaction in persons so inclined. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Retill Instructions
Do not contact with eyes, skin or clothing. Users should remove clothing if possible if pesticide gets inside. Then wash thoroughly and put on clean clothing. Prolonged or frequently repeated contact may cause allergic reaction in persons so inclined. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

STORAGE AND DISPOSAL
Do not contaminate water, food or feed by storage and disposal. Pesticide Storage: Store this product in original container in a cool, dry, locked place out of the reach of children and animals. Pesticide Disposal and Container Handling: Nonhazardous container. Do not reuse or refill this container except as described in the DIRECTIONS FOR USE. See full instructions. If empty, place in trash after the container is empty. Empty label can be recycled. Do not reuse or refill this container. Do not reuse or refill this container. Do not reuse or refill this container. Do not reuse or refill this container.

1-800-233-1067
www.preen.com

So Read the Label! Also the Safety Data Sheet (SDS) for the pesticide!

Weeds (pre-emergent)

➤ Preen Weed Preventer

- Trifluralin
- Does not kill existing weeds
- Residual in soils

Label:

- 'Extremely' toxic to fish and aquatic organisms
- Sweep product off driveway, sidewalk, street, etc.
- Do not contaminate water
- Toxic to non-target plants



Weeds (pre-emergent)

- **Natural Preen Weed Preventer**
 - 100% Corn Gluten

(There are other organic pre-emergents)



Weeds

➤ Weed & Feed

- 2,4-D & Mecoprop-p
- 2,4-D classified as possible human carcinogen by IARC; EPA disagrees
- 2,4-D linked to bird deaths, increased rates of cancer in dogs
- Granules can be tracked indoors
- Banned in Canada



The image shows the packaging for Scotts Turf Builder Weed & Feed 3. The top section features a comparison between 'Untreated' and 'Treated' lawns, with a red banner stating 'IMPROVED FORMULA UP TO 2X MORE POWERFUL* DANDELION & CLOVER CONTROL'. The Scotts logo is prominently displayed in a green oval. Below it, the product name 'Turf Builder' is written in large white letters, followed by 'WEED & FEED 3' in green and orange. A magnifying glass graphic highlights the 'WEEDGRIP TECHNOLOGY' and 'GRIPS TO HOLD YOU DON'T!' feature. The main claim is 'CLEARS OUT DANDELIONS & CLOVER - GUARANTEED!*' with a sub-claim 'Thickens Lawn To Crowd Out Weeds'. At the bottom, it specifies 'COVERS 5,000 SQ FT' and 'NET WT/PESO NETO 14.29 lb (6.48 kg)'. A small table lists ingredients: 2,4-D (0.01%), Mecoprop-p (0.01%), and Iron (0.01%). Safety instructions include 'KEEP OUT OF REACH OF CHILDREN' and 'CAUTION: IRRITANT'. The bottom right corner features the '2X MORE POWERFUL* DANDELION & CLOVER CONTROL' logo.

IMPROVED FORMULA
UP TO
2X
MORE POWERFUL*
DANDELION & CLOVER
CONTROL

Untreated Treated

Scotts

Turf Builder
WEED & FEED₃

Herbicida y fertilizante₃

CLEARs OUT
DANDELIONS & CLOVER
- GUARANTEED!*

Thickens Lawn To Crowd Out Weeds
* See Scotts No-Quibble Guarantee on back panel

WEEDGRIP TECHNOLOGY
GRIPS TO HOLD YOU DON'T!

Formulated to prevent formula:
COVERS 5,000 SQ FT
NET WT/PESO NETO
14.29 lb (6.48 kg)

NET WT/PESO NETO	14.29 lb (6.48 kg)
2,4-D	0.01%
Mecoprop-p	0.01%
Iron	0.01%

KEEP OUT OF REACH OF CHILDREN
CAUTION: IRRITANT

IMPROVED FORMULA
2X
MORE POWERFUL*
DANDELION & CLOVER
CONTROL

28-0-3

Weeds

➤ Weed & Feed -

Label:

- 'Toxic' to fish and aquatic organisms
- Sweep product off driveway, sidewalk, street, etc.
- Do not contaminate water



Weeds

- Roundup -
 - Glyphosate **to be phased out for residential use starting in 2023**
 - With inert ingredients more toxic than glyphosate alone
 - Residual in some soils for up to a year
 - Found in air, water, breast milk, urine, food and beverages
 - California's environmental health agency lists as known carcinogen
 - **Studies: sub-lethal doses affect bees - navigation, forage, taste, reproduction, and progeny**



Weeds

- **Roundup - New!**
 - Bayer announced it will **remove glyphosate** from lawn and garden versions of its popular weed killer Roundup in the US by 2023. The company plans to create several new Roundup formulations with other, existing active ingredients.

December 17, 2021

[Replacing glyphosate in the garden won't be easy](#)



Insects

- Neonicotinoids - multiple formulations:
 - Imidacloprid**, Dinotefuran, Acetamiprid, Clothianidin, Thiamethoxam
 - Systemic = entire plant is toxic including pollen and nectar
 - Long residual
 - Can't be washed off
 - Spray, soil drench, injections
- Studies: bee sperm count decrease, **spider mite population increase**, bird mortality, in hummingbird urine, in our food and water



Imidacloprid
Common lawn pests, including
Ants, Fleas, Ticks, European Crane
Fly Larvae, Grubs, Mole Crickets
and other listed insects



Imidacloprid
Controls Aphids, Japanese
Beetles (adult), Leafminers, Rose
Midge, Whiteflies and others

Insects

➤ All in One Rose and Flower Care

Label:

- 'Highly' toxic to aquatic invertebrates
- 'Highly' toxic to bees exposed to direct treatment or residues
- Do not apply or allow to drift when bees are present
- Do not allow product to enter water



Fungus

- **All in One Rose and Flower Care**
 - Double whammy: Tebuconazole (fungicide) AND imidacloprid (neonic)
 - Combo is more toxic
 - Systemic = entire plant is toxic including pollen and nectar
 - Long residual

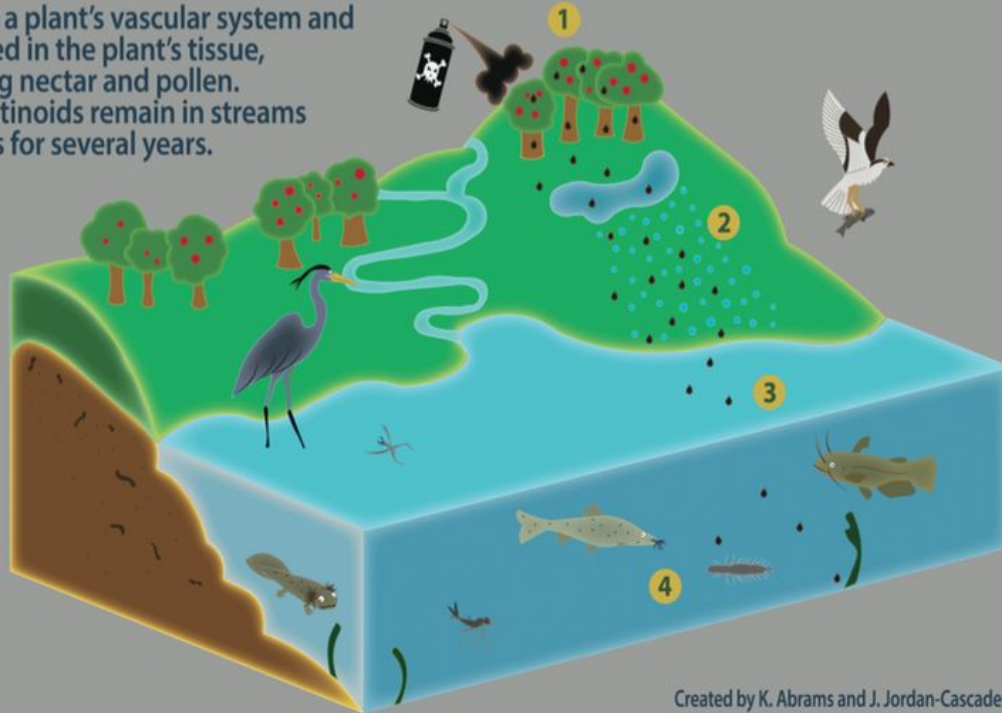
Fungicides may have more impact on bees than neonicotinoids - affects gut bacteria, health, and reproduction



Neonicotinoids in Our Ecosystem

The Neonicotinoid Pathway

Neonicotinoids are chemicals that travel through a plant's vascular system and are stored in the plant's tissue, including nectar and pollen. Neonicotinoids remain in streams and soils for several years.



- 1 Neonics are used to kill insects on gardens, orchards and lawns.
- 2 Neonics travel through plant cells and into soils where they runoff into water.
- 3 Once these poisons get into water, they build up and are taken into many aquatic plants and animals.
- 4 Birds and fish are harmed when they eat insects and plants contaminated with neonicotinoids.

Neonicotinoids pose undocumented threats to food webs

Sept. 2, 2020

“We contend that the efficient and well-documented transmission of neonicotinoids through tripartite food chains—plant to pest to natural enemy—combined with the diversity of nontarget herbivores on treated plants threatens entire food webs by disrupting arthropod communities and interactions.”

Applied to crops (grapes, pears, corn, soy, etc), in pet products, in indoor roach spray ...

Affecting pollinators, beneficials, predators, birds, fish, aquatic insects - and people

PNAS

Vol. 117 | No. 37

Toxic Choice

Widespread

Contamination

Not Worth the Risks

References


[“link”](#)

Neonicotinoids in Our Food System

- 66 foods tested
- Neonicotinoids in 91%
- Highest residues in cherry tomatoes, honeydew melons, yellow squash
- Most foods contained multiple different insecticides
- OJ and bell peppers the worst

[In 2017: 198 honey samples from across the world tested](#)

NEONICOTINOID INSECTICIDES
Harmful to Birds and Bees
FOUND in CONGRESSIONAL
CAFETERIA FOOD



A Report by American Bird Conservancy
July 2015

[link](#)

Eat Organic! Save the Planet!

Whew!
Let's take a deep
breath!

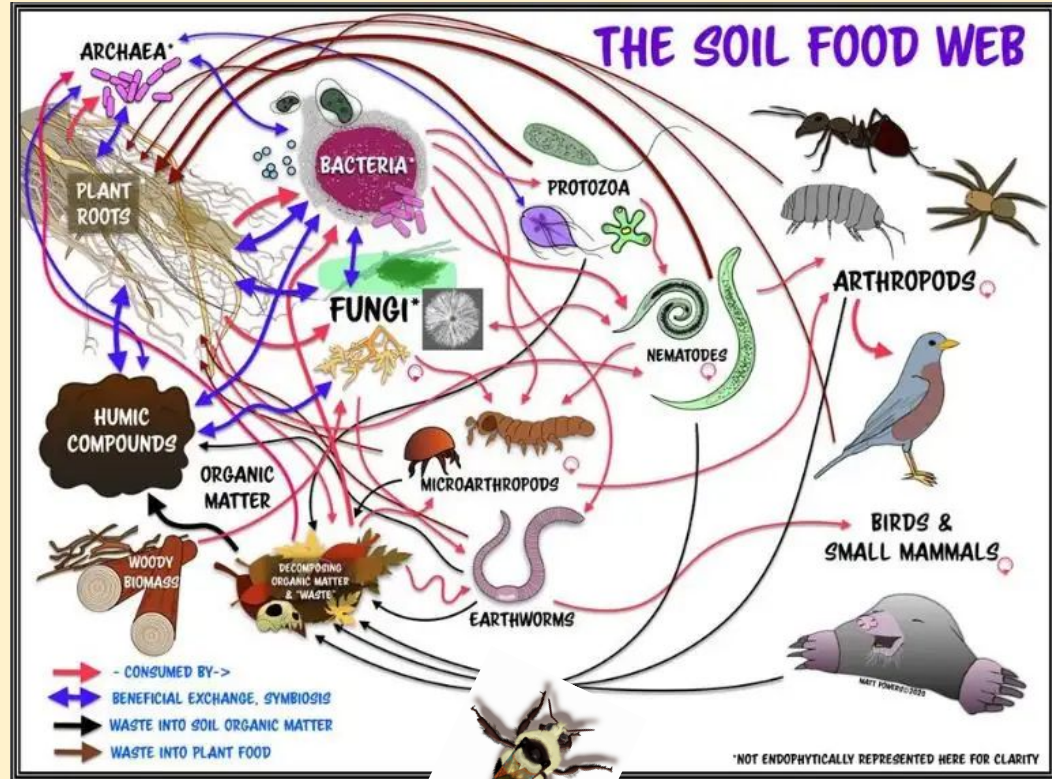


Kristina Lefever

Sweat Bee on Bolander's Sunflower

Why Organic?

- Encourage and support diversity of life above and below ground



- [Is Landscape Fabric EVER Not Horrible? - GardenRant](https://www.gardenrant.com/2018/05/15/is-landscape-fabric-ever-not-horrible/)

Soil Food Web by Matt Powers

<https://symsoil.com/soil-food-web-symsoil/>

Consider



..... and Moths,
Hummingbirds,
Butterflies, & Bees



...and Flies, Beetles, Wasps



Safer Solutions - Weeds

- ★ **Manual removal** - hori hori, hula hoe, diamond hoe, etc.
- ★ **Healthy soil** - compost / tea, *organic* soil amendments
- ★ **Sheet mulching** - cover it
- ★ **Flame it** - in spring
- ★ **Ground cover plants** - pollinator plants!
- ★ **Other products** - 100% corn gluten, vinegar, etc (not necessarily non-toxic)
- ★ **DIY recipes** - vinegar / salt / boiling water / soap
- ★ **Acceptance!**

Safer Solutions - Insects

- ★ **Manual** - squish, cover plants, hose, etc.
- ★ **Non-toxic products** - BT, **neem**, diatomaceous earth (DE), etc
 - **Bee careful - they can kill pollinators and beneficial insects!**
- ★ **DIY products** - soapy water, garlic juice, traps, etc.
- ★ **Acceptance!** (good bugs need bad bugs to eat)
- ★ **Beneficial insects** - work for you!
 - **Predators** - insects that hunt, kill and consume other insects
 - Yes to Spiders! ***
 - **Parasitoids** - insects that use other insects as hosts for their larvae
 - **Need host plants** - dill, fennel, parsley, etc

* Spiders!

[Spiders](#) play an important role in controlling insect populations! An arachnologist (person who studies spiders) in the United Kingdom once calculated that the weight of insects eaten by spiders in that country every year exceeded the weight of the people who live in the U.K.

"Insecticides will not provide long-term control" of spiders, according to the University of California, "and should not generally be used against spiders outdoors." Washington State University Extension has a similar perspective: "Most spider problems can be solved without the use of chemicals."

3,000 species in North America - only a few of them cause problems for people. The benefits we realize from spiders preying on insects, mites, and other spiders far outweigh the low potential health hazard to humans.

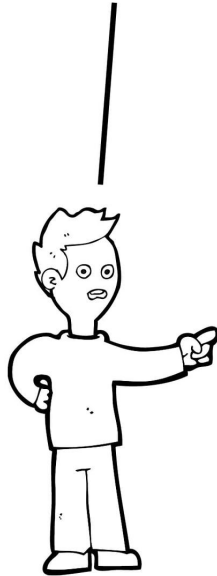
Protect the Beneficials!

- 1 to 3 percent of all known insects are harmful to humans, animals, and plants
- Many pollinate and make more plants!
- They help get rid of “pests”!
 - aphids, armyworms, caterpillars, codling moths, colorado potato beetles, corn earworms, cutworms, grasshoppers, hornworms, imported cabbage worms, leafhoppers, mealybugs, scales, plant bugs (immature), spider mites, thrips, webworms
- They are beautiful! They are cool! (*even the ones you can't see!*)
- They work for free! (*well almost*)



From This....

Uh oh...
I'm seeing
a lot of BUGS
in your garden
and I saw
CATERPILLARS
over there
eating your leaves!



THAT'S GREAT
NEWS!
We need more insects.

I'm gardening with
indigenous
plants to feed
those caterpillars.

I WANT
them to eat
my leaves!



[pollinator friendly yards on facebook](#)

....To This

Native: What Does It Mean?

Per Oxford Languages

Na·tive /'nādiv/

1. (of a plant or animal) of indigenous origin or growth.
"these plants are **native to** North America"



"Roughly **350,000** plant species on earth have been named, representing an estimated 80–90% of the global total (primary sources)."

B10NUMB3R5
THE DATABASE OF USEFUL BIOLOGICAL NUMBERS

"Oregon has over **3,600** species of native plants. Large or small, abundant or rare, each is unique and special.

Ecoregions ranging from coastal sand dunes and mountain forest to prairie grasslands and alpine lava fields provide a myriad of habitats for these plants."

NPSO
Native Plant Society of Oregon

Why Native?

- Preserve regional biological heritage and maintain genetic diversity
- Require less maintenance, fertilizers, **water**
- Support more abundant and species-rich communities of pollinators, birds, and more

D. Tallamy: *Bringing Nature Home*:

ginkgo = 1, native oak = 532

Insect diversity decreases in landscapes with non-native plants



Mt. Ashland

A single pair
of breeding
chickadees
must catch

7500

caterpillars
to rear one
clutch of
young



© Debra Breton

Consider

“... when you **exceed 30 percent** of the plant biomass in your yard as being **woody non-natives**, that’s when the chickadee population becomes unsustainable. That’s when birth rates do not equal death rates. So [the numbers get] smaller every year.”

Dr. D. Tallamy

Think of (Native) Plants as Food



Think of (Native) Plants as Food

Pearly Everlasting =
50 butterflies!



American Lady (Vanessa virginensis)
chrysalis and butterfly

[Read our blog](#)

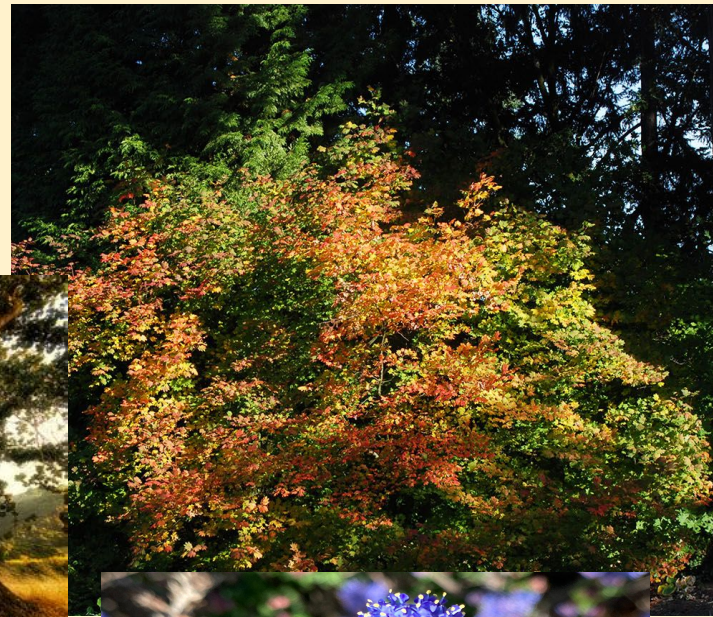


The Need for Seeds



Oregon Sunshine

Native plant “All Stars”: Trees, Shrubs



Red flowering currant (*Ribes sanguineum*)
Oregon white oak (*Quercus garryana*)
Vine maple (*Acer circinatum*)
California wild lilac (*Ceanothus* spp.)

Native plant “All Stars”: Flowers, perennial

Sulphur Buckwheat (*Eriogonum umbellatum*)

California fuchsia (*Epilobium canum*)

Pine lupine (*Lupinus albicaulus*)

Douglas aster (*Symphyotrichum subspicatum*)



Native plant "All Stars": Flowers, annual

California poppy (*Eschscholzia californica*)

Bushy yellow lupine (*Lupinus luteolus*)

Bi-color lupine (*Lupinus bicolor*)

Globe gilia (*Gilia capitata*)

Showy tarweed (*Madia elegans*)



Native plant “All Stars”: Grasses, groundcovers

California fescue (*Festuca californica*)

Bolander’s phacelia (*Phacelia bolanderi*)

California strawberry (*Fragaria vesca*)

Western swordfern (*Polystichum munitum*)



Grow a Pollinator Landscape

- Layers: trees to groundcovers
- Flowers from early spring to late fall
- Pollen/ nectar / “host plants”
- Don't ‘clean up’ in the fall
- Think connectivity
- *Rethink aesthetics*
- Think ecosystem!



Moth caterpillar eating Elegant Tarweed

With Nesting Above...



Bees nest in crevices
and safe places



Anise
swallowtail
pupae

Leave the
leaves!



Small carpenter
bee nest

.... and Below ...



Mining bee

**70% of bees
nest in the
ground**



Digger bee ([click photo for video](#))

...and Moisture

- Water / mud



Anna Cassilly

Are You Organic and Native?

- ✓ Flowers blooming all year long - trees, shrubs, annuals, perennials
 - Host plants for caterpillars
- ✓ Habitat (undisturbed spaces)
- ✓ Water / Mud
- ✓ Bugs to eat
- ✓ No pesticides!



✓ **Know your bugs!**

Resources to help you create a beautiful, native, toxic-free garden!

- ★ [Potential Health Effects of Pesticides](#)
- ★ [What Are Neonicotinoids? | pollinatorprojectroguevalley](#)
- ★ [Managing Pests & Weeds](#)
- ★ [Pest Control & Beneficial Insects](#)
- ★ [7 Pesticide-Free Solutions To Slug Problems](#)
- ★ [BugGuide.Net](#) (bug identification)
- ★ [Resources and More | pollinatorprojectroguevalley](#)
- ★ [Top 20 Host Plants](#)
- ★ [Bee City USA Ashland](#) (Pollinator Gardens program)
- ★ Pdf & link to Pesticide Stewardship Partnership info : send email to kristinalefev@gmail.com if you want this

❖ Questions?

Thank you!

Blue Copper on
wild buckwheat



Out of the Flame/Annette Trujillo