

## WHAT YOU CAN DO!

### Here are a few tips to use herbicides more responsibly.

*Specific recommended actions depend on herbicide type, method of application & other factors.*

- The most obvious and sure-fire solution to prevent herbicide damage is to **stop using herbicides**. Instead, remove undesirable plants by hand or via other non-chemical methods, or allow space for these plant volunteers in your yard.
- Some trees may outgrow damage and recover, but some may need to be replaced.
- If a tree was accidentally sprayed with herbicide, you can immediately rinse off foliage with water. However, if not done right away the herbicide may be absorbed by the leaves.
- Follow directions on herbicide labels closely to avoid negative impacts from misuse or off-label applications.
- Avoid spraying herbicides in wind or when temperatures are over 85°F.
- If using Roundup (Glyphosate) to reduce or remove unwanted tree species, do not spray. Instead, apply using a paintbrush to freshly cut woody material.
- Whenever possible, remove soil contaminated with soil-applied herbicides. Water can spread rather than dilute some herbicides.

## IMPACTS ON PEOPLE, INSECTS & WILDLIFE

As herbicide use increases around the world, scientists are finding that impacts go far beyond plants. These products can also harm insects, bacteria, fungi, and other creatures who form the base of our planet's aquatic and terrestrial food chains. (And remember, we humans are also part of the web of life!)



*herbicides can impact the health and behavior of bees*

Herbicides can directly harm human health. Exposure is linked to cancer, organ damage, Parkinson's disease, gastrointestinal issues, and more, depending on the herbicide. Children, the elderly, and agricultural communities are especially at risk. Many of the herbicides we use in the U.S. are banned in other countries due to their toxic effects on human and environmental health.



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## HERBICIDES CAN KILL TREES



Herbicides are commonly used in landscaping to kill unwanted plants and keep a tidy looking yard. But did you know that these chemical concoctions come with a cost? They may not only injure or kill the targeted plants, but also plants you want to keep, including your favorite trees.



## HOW DAMAGE OCCURS

### Drift Injury

Herbicides sprayed in liquid form, or dust from granular formulas, can drift via wind to nearby trees. Dry herbicide formulations applied to soils can also be absorbed by roots of nontarget plants.

### Soil Sterilants

These herbicides kill all plants where applied, and they stick around in the soil for extended periods – especially in arid places like NM. In addition, soil sterilants are water-soluble and can spread to new areas through rainwater or irrigation.

Tree roots can extend much farther than the canopy. That means sterilants applied to gravel strips, the edges of driveways, and fence lines that seem to be far away may still injure or kill your favorite trees.

Repeated damage that does not directly kill trees can make them more susceptible to diseases & pests. Many herbicides build up over time in tissues and cause increasing damage.

## \*SOME\* SYMPTOMS OF HERBICIDE DAMAGE



Herbicides with growth regulator activity cause leaves/stems/petioles to twist, curl, or appear otherwise distorted after contact.

#### Active Ingredients/Products:

2,4-D, 2,4,5-T, MCPA, MCPP (Mecoprop), Dicamba (Banvel, Clarity, DiFlexx, Engenia, XtendiMax)



Triazine herbicides that inhibit photosynthesis cause chlorophyll loss indicated by yellowing (chlorosis) & browning (necrosis) of leaves, esp. between leaf veins.

#### Active Ingredients/Products:

Atrazine (AAtrex), prometon (Pramitol), simazine (Princep), propazine



Soil sterilants in the substituted urea group/uracils cause off-color foliage followed by rapid browning/blackening. These herbicides rapidly kill existing foliage and new growth.

Toxins can accumulate in plant tissues. Conifers may show purpling of older needles.

#### Active Ingredients/Products:

Monuron, diuron and tebuthiuron (Spike), and bromacil (Hyvar X)



Amino acid inhibitors cause yellowing foliage followed by browning. Twig and branch dieback can occur. Can be absorbed through leaves and moved throughout the plant, causing further injury and unusual growth patterns including witch's broom, distorted foliage, stunted growth, bark splitting and death.

#### Active Ingredients/Products:

Glyphosate (Roundup, Touchdown)