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If you need this newsletter in alternative format, please contact Jennifer Schutter at the Adair County Extension Center.

BE CAUTIOUS WHEN SPRAYING HERBICIDES

Each year University of Missouri Extension offices all across Missouri receive phone calls and emails from clients whose gardens or trees have been effected by spray drift from herbicides. Either they accidentally sprayed the wrong plant, sprayed the wrong chemical or sprayed when conditions were not ideal, or their neighbor sprayed a bordering field under conditions that were not ideal and spray drifted onto their garden or trees.



If you have a neighbor that sprays nearby crop fields, communication between you and that neighbor is very important. Make sure that person knows you have a garden or ornamental trees or fruit plants that could be affected by spray drift. Good communication will allow you to cover your plants if necessary to avoid damage to your plants.

If you are the one doing the spraying, wait for ideal weather conditions. If you know your neighbor has vegetables, flowers or trees near the area you are spraying, contact them and let them know the day and time you plan to spray.

Herbicides, when used properly, rarely cause problems on non-target plants. However, these products can cause injury when applied inappropriately, when they turn into a gas (a process called volatilization), or when they are blown by the wind away from the targeted area (a process called drift). Accurately diagnosing plants that show herbicide injury symptoms is often difficult since, in many cases, other causes may be involved or it may be uncertain what herbicides were applied.

Post-emergence broadleaf herbicides selectively kill actively growing broadleaf plants. This includes growth regulator herbicides that have active ingredients such as 2,4-D; 2,4-DP; MCPA; MCPP; dicamba; and others. Herbicides in this group are labeled for use in a number of different locations including homes, farms, and industry. These herbicides are quite prone to drift and volatilization. Injury symptoms include: twisted leaves, downward cupping on leaves, narrow, strap-like leaves on the youngest growth, above ground roots on the stems of certain annual flowers. Several factors may affect the ability of herbicides to move from the site targeted for application to a non-target site, including: formulation, application method, temperature, wind, soil factor.

Whether a plant recovers from non-target herbicide injury depends on the overall vigor of the affected plant, the amount of herbicide it received, the type of herbicide used, and the growing conditions after contact. Healthy woody plants and many herbaceous plants that receive low doses of a growth regulator

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herbicide will most likely recover. As the new growth develops it might appear normal. However, if the plant absorbed a greater dose, the chemical may persist in woody plants, and symptoms may appear for the next two or three seasons, and herbaceous plants can die.

Good communication between neighbors is important to avoid herbicide drift issues.

SOURCE: https://www.extension.purdue.edu/extmedia/id/id_184_w.pdf

GOOD LAWN PRACTICES REDUCE RISK OF NUTSEGE TAKING OVER

Nutsedges are common weeds in landscapes and once established they can be extremely difficult to eliminate. Nutsedges thrive in waterlogged soil, and their presence often indicates drainage is poor, irrigation is too frequent, or sprinklers are leaky. Although nutsedges resemble grasses and often are referred to as "nutgrass," they aren't grasses but are true sedges. Their leaves are thicker and stiffer than most grasses and are arranged in sets of three at their base. Nutsedge stems are solid, and in cross section they are triangular.

Yellow and purple nutsedges produce tubers on rhizomes, or underground stems that grow as deep as 8 to 14 inches below the soil surface. Buds on the tubers sprout and grow to form new plants and eventually form patches that can range up to 10 feet or more in diameter. Yellow and purple nutsedges are perennial plants and the tubers can survive for up to three years. Nutsedges are a problem in lawns because they grow faster, have a more upright growth habit, and are a lighter green color than most grass species, resulting in a nonuniform turf.

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APRIL FREEZE EFFECTS ON PLANTS

By: Tim Baker, University of Missouri Extension horticulture specialist

The recent cold snap on the morning of April 9 has been of concern to orchard owners, especially in the northern part of the state. Apples were at the "pink" stage, and some blossoms had opened up into a full bloom. The low temperatures encountered that morning were cold enough to give us some concern. Before I discuss what our situation might be, I thought I would give you a little background information.

First, we can divide cold damage into two types: cold damage that occurs during the dormant season, and cold damage that occurs during the spring. Dormant season cold damage will occur if you are growing a plant too far north, and out of its native range. The USDA cold hardiness zone map addresses this problem. Do you want to grow Southern Magnolias in northern Minnesota? Sorry, I'm afraid you'll get winter injury. They just can't take that kind of winter.

You can get other types of dormant season injury, especially if the plant has not hardened off properly. If you have a warm fall, and then a sudden cold snap occurs, even plants that normally would not get injury will have problems. But that is not what happened this April. In this case, the plants were coming out of dormancy. Above normal temperatures in February and March promoted good spring growth. Then the mercury fell on April 9 to temperatures that may have caused significant damage in our fruit crop.

The key to spring damage is the stage of the flower bud. I will use apple trees as an example. If apple trees are fully dormant, they can take very cold temperatures, even below zero, with no problem. But when the buds start to swell, they cannot take those same cold temperatures without damage. When an apple bud is at the "silver tip" stage, for example, a temperature of 15 degrees will take out approximately 10 percent of the blooms. If it gets down to 2 degrees, you might see as much as a 90 percent loss. As the buds progress, those critical temperatures rise. At "half-inch green", the temperatures for damage are 23 degrees and 15 degrees for a 10 percent and 90 percent bud kill. At full bloom, it's worse. A temperature of 28 degrees will see a 10 percent kill, and if it gets down to 25 degrees, you'll lose around 90 percent of your crop. In Gallatin, I measured a low temperature that morning of 24 degrees. That's not good, needless to say.

There are other factors that go into whether damage is caused or not, such as the number of hours below a given temperature. Dr. Patrick Guinan, Missouri State Climatologist, sent me a map which shows the low and the number of hours below 25 degrees encountered that morning.

Albany had the longest time below 25 degrees, at 4 hours, and reached a low of 23 degrees. Kirksville had 3 hours, and reached a low of 21 degrees. St. Joseph didn't have any hours below 25 degrees, since their low only reached 27 degrees. But that still could have caused some damage. The short message in this is that only time will tell the extent of damage. We should know in a few weeks.

HOW TO DEAL WITH TUNNELING PESTS IN YOUR YARD

The days are getting warmer, which means destructive, furry varmints are busy tearing up lawns and damaging plants. It's time once again for moles and voles to go after your lawn and garden. A mole will generally remain underground and not come to the surface, but most people are familiar with the damage they do with their feeding tunnels and the molehills they make. Most homeowners will notice a network of tunnels that have inch-and-a-half to 2-inch diameter holes where they can enter and exit.

Voles are much smaller than moles. Moles are carnivores, eating mostly earthworms and grubs, while voles are herbivores. In my mind, voles can be even more destructive to plants and ornamental beds and flower beds because they do feed on ornamental bark, flower bulbs, roots and such. Even though moles don't damage plants, their raised tunnels and unsightly mole hills can be a source of frustration for homeowners. Trapping is probably the most economical control method.

The key to trapping success is finding an active tunnel. Moles feed and rest on a two-hour cycle, 24 hours a day. By poking holes into the top of tunnels, the mole will come back and plug up those holes in an active runway. That's where you set your trap. There are harpoon traps, choker types and scissor traps available. Some of the newer scissor traps are easy to set. You place the scissors into a feeding runway, then use your body weight to set and lock the trap in place by stepping on top of it. Harpoon traps are relatively inexpensive and can be found at most garden centers.

Once you locate an active runway, push down

on the tunnel with your foot where you want to set the trap. Insert the trap completely into the soil, moving it around a little bit and up and down to make sure that when the trap is sprung there isn't anything that's going to hold back the harpoon. Then once you set the trap, make sure that the trip plate is just above the soil surface and should spring without any hang-ups.

There are mole repellents made with castor oil. Moles don't like the smell, so it does repel, but the smell doesn't last long. You'll need to reapply castor oil repellent throughout the spring, summer and fall for it to remain effective. There are also worm- and grub-shaped baits that can be applied into an active runway. They're flavored with attractants and contain a rodenticide, bromethalin, that is very effective.

Controlling voles requires a different approach. Voles tend to live in colonies, so getting rid of one or two won't help much. You'd probably need to bait five or six within a colony before you notice a difference. To control voles, find the entrance and exit holes and place poison baits in those holes. If you notice that they have some feed runways on the surface, then regular mouse traps or a bait station can be used.

The MU Extension guide "Controlling Nuisance Moles" is available for download at <http://extension.missouri.edu/p/G9440>. "Controlling Voles in Horticulture Plantings and Orchards in Missouri" is available at <http://extension.missouri.edu/p/G9445>.

SOURCE: Article written by Debbie Johnson, MU Cooperative Media Group, and Dr. Brad Fresenberg, state turfgrass specialist.

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In gardens and landscapes, nutsedges will emerge through bark or rock mulches in shrub plantings and vegetable and flower beds throughout the growing season. The best approach for avoiding nutsedge problems is to prevent establishment of the weed in the first place. Once established, nutsedge plants are difficult to control.

Prevent establishment by removing small plants before they develop tubers, eliminating the wet conditions that favor nutsedge growth, using certain fabric mulches in landscape beds, and making sure nutsedge tubers aren't brought in with topsoil or other materials.

Tubers are the key to nutsedge survival. If you can limit production of tubers, you'll eventually control the nutsedge itself. To limit tuber production, remove small nutsedge plants before they have 5 to 6 leaves; in summer this is about every 2 to 3 weeks. Continually removing shoots eventually depletes the energy reserves in the tuber. The best way to remove small plants is to pull them up by hand or to hand hoe. If you hoe, be sure to dig down at least 8 to 14 inches to remove the entire plant.

Few herbicides are effective at controlling nutsedge, either because of a lack of selectivity to other plants or a lack of uptake. The one recommended and available to home gardeners is sold under the name of Sedgehammer. Just remember to follow the label instructions. Many people mistakenly use Roundup on fully grown plants to try to kill the tubers. Unfortunately, when tubers are mature the herbicide usually doesn't move from the leaves to the tubers, leaving them unaffected.

SOURCE: Debbie Johnson, Cooperative Media Group and Patrick Byers, horticulture specialist, University of Missouri Extension.

GARDEN TIPS FOR MAY

ORNAMENTALS

- Pinch azaleas and rhododendron blossoms as they fade. Double flowered azaleas need no pinching. Fertilize azaleas after bloom. Use a formulation that has an acid reaction.
- Apples, crabapples and hawthorns susceptible to rust disease should have protective fungicidal sprays applied beginning when these trees bloom.
- Begin planting gladiolus bulbs as the ground warms. Continue at two-week intervals. Plant summer bulbs such as caladiums, dahlias, cannas, and elephant ears. Begin planting warm-season annuals.
- Plant hardy water lilies in tubs or garden pools.
- Continue monitoring pines, especially scotch and mugo, for sawfly activity on new shoots.
- Don't remove spring bulb foliage prematurely or next year's flower production will decline. Bulbs can be moved or divided as the foliage dies.
- Canker worms (inch worms) rarely cause permanent damage to ornamentals. Use B.T. if control is deemed necessary.
- Scale crawlers are active now. Infested pines and euonymus should be treated at this time.
- Trees with a history of borer problems should receive their first spray now. Repeat twice at three-week intervals.
- Begin fertilizing annuals. Continue at regular intervals.
- Pinch back mums to promote bushy growth.

VEGETABLES

- Slugs will hide during the daytime beneath a board placed over damp ground. Check each morning and destroy any slugs that have gathered on the underside of the board.
- Growing lettuce under screening materials will slow bolting and extend harvests into hot weather.
- Place cutworm collars around young transplants. Collars are easily made from cardboard strips.
- Set out tomato plants as soils warm. Place support stakes alongside at planting time. Set out peppers and eggplants after soils have warmed.
- Isolate sweet, super sweet and popcorn varieties to prevent crossing.
- Keep asparagus harvested for continued spear production. Control asparagus beetles as needed.
- Thin plantings of carrots and beets to avoid overcrowding.
- Control caterpillars on broccoli and cabbage plants by handpicking or use biological sprays such as B.T.
- Plant dill to use when making pickles.
- Remove rhubarb seeds stalks as they appear.
- Watch for striped and spotted cucumber beetles now. Both may spread wilt and mosaic diseases to squash and cucumber plants.
- Plant sweet potatoes now.
- Make new sowings of warm-season vegetables after harvesting early crops.

FRUITS

- Mulch blueberries with pine needles or sawdust.
- Don't spray any fruits while in bloom. Refer to Extension guide G6010: Fruit Spray Schedule for Homeowners.

TURFGRASS

- Keep bluegrass cut at 1.5 to 2.5 inches. Mow tall fescues at 2 to 3.5 inches.
- Apply post-emergence broadleaf weed controls now if needed.

-MISSOURI BOTANICAL GARDEN-

UPCOMING EVENTS

May 7: Magic City Master Gardeners plant sale, 9-2, Rothwell Park Youth Building in Moberly.

May 7: Opening day of Kirksville Farmers' Market, west side of square, 7-12.

May 7: Salt River Master Gardeners plant sale, 8:00 a.m. to noon at the Y Men's Pavilion, downtown Hannibal. There will be a variety of annuals, perennials, vegetables, and bulbs. Proceeds benefit Salt River Master Gardener volunteer efforts.

May 23: Garden n' Grow starts in Kirksville, for children ages 9-13, Mondays and Thursdays, Kirksville, 9-10:30 am. Call Adair County Extension Office at 660-665-9866 for a registration form.

June 1: Advanced Beekeeping Workshop, Macon Vo-Tech School, Macon, 9-4. Registration forms are available at the Adair County Extension Center. Cost \$20. This is for experienced beekeepers or those that completed a basic beekeeping workshop.

August 25-November 11: Master Gardener training in Macon, Thursdays. Time TBD. If you have a preference on time please contact me and let me know. Choices are 9:30-12:30, 12:30-3:30 or 1-4. You can also enroll for online training in late summer.

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