HOT, DRY WEATHER FAVORS DEVELOPMENT OF SPIDER MITES ON GARDEN PLANTS

Hot, dry weather, is a perfect combination that favors the development and rapid reproduction of spider mites. Spider mites are very common pests of outdoor plants. They are capable of infesting many garden plants, bedding plants, trees, shrubs, and even weeds. Beans, melons, and tomatoes are just a few of the susceptible vegetable crops. Annual flowers, such as marigolds and petunias are also quite vulnerable. Common landscape plants affected by mites include azalea, aster, Alberta spruce, daylilies, and roses.

Spider mites suck juices from the plants, causing the plants to look dull and unhealthy. Mites also cause plants to lose vigor so that they may be unable to overcome a severe infestation, resulting in the plant’s death. In Missouri, the most common outdoor spider mite is the two-spotted spider mite.

Infestations of two-spotted spider mites result in the bleaching and stippling of leaves. Severe infestations may cause entire leaves to become bronzed, curled, and completely enveloped in sheets of webbing. Damage to the foliage may result in leaf drop and reduction in the overall vitality of the plant. Because spider mites are very small, they can be difficult to see on plants. Check for spider mites by tapping or shaking a leaf or branch over a white sheet of paper. The mites appear as small specks that resemble dust or pepper and may be seen to move.

Integrated Pest Management Strategies

1. **Knock mites off plants with water.** Spraying with a strong stream of water (particularly the undersides of leaves) will provide some control. Spray plants frequently to control future buildups. For severe infestations, affected plants or plant parts can be removed and destroyed. There are several natural predators that feed on spider mites. The use of chemical insecticides to control other garden pests can result in the death of these beneficial insects and a subsequent increase in the population of spider mites.

2. **Use insecticidal soap.** Insecticidal soaps specially formulated to kill insects and not damage plants are effective if used frequently until the problem is under control.

3. **Use superior horticultural oil sprays.** Highly refined oils sold as superior or horticultural oils are also very effective in controlling spider mites. The oil suffocates the mites. Unlike dormant oils, these oils are highly refined and under proper conditions, can be applied to plant foliage without damage. Follow label directions to avoid damage to some plants that may be sensitive. Superior oils are considered nontoxic and are less likely to kill beneficial insects.

4. **Use chemical insecticides or miticides.** A very safe product made from the

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PLANTING FALL VEGETABLES

Most gardeners are not thinking about autumn right now with temperatures still very warm, but planting a fall garden must take place at this time. Vegetable crops like lettuce, peas, radishes, spinach, broccoli and green beans can be planted now for a fall harvest. Some will germinate better if the seeds are refrigerated a few days before planting. Late plantings of vegetables like summer squash are recommended to avoid insect problems such as the squash vine borer, that can cause squash plants to collapse and die. Before planting these crops, wet the soil with cold water. Keep the planting well-watered if rainfall has not been sufficient. Keeping the soil cool in the hot days of August is key to good germination.

Many vegetables are well adapted to planting in the summer for fall harvest. Planting a fall garden will extend the gardening season so you can continue to harvest fresh produce after earlier crops have finished. Fall harvest can be extended even further by providing protection from early frosts by planting in cold frames or hotbeds, or using row cover during light frosts.

Many cool-season vegetables, such as carrots, parsnips, broccoli, cauliflower, and Brussels sprouts, produce their best flavor and quality when they mature during cool fall weather. In Missouri, spring temperatures often heat up quickly causing these vegetables to bolt (flower) or develop a bitter flavor when they mature during hot summer weather.

Growing a productive fall vegetable garden requires thoughtful planning and good cultural practices.

LATE SUMMER LAWN CARE

By Zhengxiong Li, summer intern

Lawns are used for many social events, such as parties, sports, barbecues, and weddings. We all want a lawn that looks lush and green, so it is important to take care of the lawn in late summer. Lawns need one inch of water every week. An inch of water is equivalent to five gallons. Lawns can use even more water if the weather is very hot. Water lawn grass deeply, not lightly and frequently. If you choose to water your lawn, it should be watered early in the day in order to decrease evaporation and fungal growth.

Make sure mower blades are sharp enough to cut the grass rather than tear it. Lawn grass should be mowed 2.5-3 inches in height. Mowing regularly is a good way to prevent cutting more than 1/3 of the grass blade at one time. This helps create a healthier lawn and prevents clippings from suffocating the grass. Grass clippings can be left on the lawn to help maintain moisture in the soil and provide organic matter. If you choose to bag them, use them as mulch around other plants or place them in your compost pile.

Fertilization is important for a lawn, but do not over fertilize. Wait until fall to apply fertilizer to your lawn. September is an excellent time for a fertilizer application. If hand pulling weeds isn’t an option, use herbicides designed to kill broadleaf weeds, not the turf grass. If crabgrass is an issue, crabgrass preventer should be applied to the lawn in early spring. Sometimes insect control is necessary for a lawn. Insecticides, natural and synthetic, can be used to control various lawn grass insects.

For more information on lawn care, see MU guide 6705 at http://extension.missouri.edu/p/G6705 or call your county extension center and ask for a copy.

CARPET BEETLES

Have you noticed small, brown, hairy worms crawling around on your carpet this summer? If so, you may have carpet beetles. Carpet beetles and clothes moths can cause serious damage to fabrics, furs and carpets, among other items. Carpet beetles belong to the beetle family Dermestidae. The adults are harmless and feed on plant pollen exclusively. It is the larva, the growing stage, that causes damage by feeding on items primarily of animal origin. Carpet beetles also attack other materials, such as cotton and synthetic fibers if these fabrics are soiled with human perspiration, body oils, beer, milk or fruit juice. Some carpet beetles may become pantry pests by invading cereal grain products.

Control measures: Vacuum wool carpets often enough to prevent accumulation of hair, lint and other carpet beetle food materials. Remember to vacuum under seldom-moved furniture and along baseboards. Upholstered furniture, air ducts and other lint-accumulating sites also need this cleaning. Dry clean or wash woolens and place them in tightly sealed containers for summer storage. Moth balls (naphthalene) or PDB (paradichlorobenzene) crystals may help prevent carpet beetles and clothes moths from invading

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Few garden flowers give more and ask for less than daylily. In the quest for a "no maintenance" perennial, daylily is about as close as one can get. There are some who maintain that daylilies thrive on neglect. With their ease of care and the myriad flower colors, types and sizes available, it is little wonder why daylily is America’s most popular perennial flowering plant.

Daylily belongs to the genus Hemerocallis, a name derived from the Greek words hemera (day) and kalos (beautiful). It makes reference to the fact that the showy flowers of this plant rarely last for more than 24 hours. Daylily is thought to be native to China, Japan and Korea. A written record dating back to 2697 B.C. indicates Chinese used it as food and for its perceived medicinal properties. It is mentioned in several 16th-century European herbals under a variety of names no longer used today.

By the late 1800s, many daylily species had found their way into American gardens. But it was the work of plant breeder Arlow B. Stout that started daylily on the path to the popularity it enjoys today. Stout received plants and seeds from China in 1924 and began a program of breeding and improvement. His work inspired professional and amateur plant breeders to hybridize daylily. Their efforts resulted in an astonishing 83,955 daylily cultivars registered by the American Hemerocallis Society, according to its 2017 database.

Such a multitude of cultivars requires a sizable glossary to describe daylily flowers and distinguish one cultivar from another. Terms such as single, double, spider, circular, flat, informal, triangular, star and recurved are a few of the many terms used to describe flower form. Flower color and/or pattern are described by terms such as self, blend, polychrome, bi-tone, bicolour, watermark and eye zone. An extensive list of terms associated with daylily can be found at www.daylilies.org/ahs_dictionary/dictionary.html.

A sun-loving perennial, daylily needs a minimum of six to eight hours of direct sun daily. However, a bit of late afternoon shade does help to preserve flower color and longevity. In shady exposures, the lily produces abundant foliage but very few flowers. Daylily prefers a medium-heavy garden loam, although it can tolerate a wide array of soil textures. Soil of any texture can be improved by incorporating liberal amounts of organic matter in the form of well-rotted manure, compost or peat moss before planting.

Fertilizer should be applied sparingly; too much nitrogen can be detrimental. "If daylilies produce lush, abundant foliage but few flowers, they probably are receiving too much fertilizer," Trinklein added. Daylilies growing in fairly rich soils need little if any additional fertilizer.

Although daylily is fairly drought-tolerant, adequate water increases flower number and size. Water is important in the spring when the plants form scapes and set buds and later when plants are in bloom.

Daylily faces attack by a variety of pests and diseases, but most do only minor damage. Aphids, thrips and spider mites are the most common insect pests. Crown and root rot, leaf streak and daylily rust are diseases that can be problematic. Like most clump-forming perennials, daylilies need periodic division for best garden performance. The frequency of division depends largely on cultivar and growing conditions.

Cultivars known for their re-blooming tendency such as Stella de Oro should be divided relatively frequently. This helps to force new growth throughout the growing season, which is the primary factor that causes a daylily to rebloom. Daylilies can be divided or planted any time the ground is not frozen. However, late August through September is considered the most ideal time.

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Source: David Trinklein, state floriculture specialist

The articles. Use paper to avoid direct contact between chemical and the articles. Avoid long-term and undisturbed storage of susceptible materials. Help deter carpet beetle invasion by removing abandoned bird nests and bee and wasp nests from attics, wall voids and eaves. Also, remove dead insects from light covers, window sills and other places they accumulate.

**Chemical control:** Treat infested carpet or upholstered furniture with a ready-to-use insecticide aerosol or dust that is labelled for use indoors. Do not treat clothing. When treating rugs that are not fastened to the floor, treat the top and bottom surfaces. In rooms with wall-to-wall carpeting, treat along all baseboard-to-carpet contact areas. These beetle larvae like undisturbed locations, so treat all carpet underneath furniture and the underside of upholstered furniture. Stuffed animal trophies may require an additional internal spray or dusting. Do not allow children or pets to have contact with treated surfaces until they are thoroughly dry. Staining or running of colors is a possibility with certain fibers. Test a small, hidden area with the spray product to check for any adverse effects before applying the chemical to the entire area.

Source: http://extension.missouri.edu/p/G7372
AUGUST GARDENING TIPS

Ornamentals
- Deadhead annuals and perennials as needed.
- Continue spraying roses that are susceptible to black spot and other fungal diseases.
- Roses should receive no further nitrogen fertilizer after August 15th.
- Divide bearded iris. Replant so tops of rhizomes are just above ground level.
- Prune to shape hedges for the last time this season.
- Evergreens can be planted or transplanted now to ensure good rooting before winter arrives. Water both the plant and the planting site several days before moving.
- Soak shrubs periodically during dry spells with enough water to moisten the soil to a depth of 8-10 inches.
- Once bagworms reach full size, insecticides are ineffective. Pruning off and burning large bags provides better control.
- Spray black locust trees now to protect against damage by the locust borer.
- Watch Scotch and Austrian pines for Zimmerman pine moth damage. Yellowing or browning of branch tips and presence of pitch tubes near leaf whorls are indicative. Prune and destroy infected parts.
- Hummingbirds are migrating through gardens now.
- Monitor plants for spider mite activity. Hose these pests off with a forceful spray of water.
- Second generation pine needle scale crawlers may be present on Mugo pine now.

Vegetables
- Compost or till under residues from harvested crops.
- Broccoli, cabbage, and cauliflower transplants should be set out now for the fall garden.
- Cure onions in a warm, dry place for 2 weeks before storing.
- Sow beans, beets, spinach, and turnips now for the fall garden. Spinach may germinate better if seeds are refrigerated for one week before planting.
- Begin planting lettuce and radishes for fall the last 2 weeks of August.
- Pinch the growing tips of gourds once adequate fruit set is achieved. This directs energy into ripening fruits, rather than vine production.

Fruit
- Prop up branches of fruit trees that are threatening to break under the weight of a heavy crop.
- Thornless blackberries are ripening during the first week of August.
- Spray peach and other stone fruits now to protect against peach tree borers.
- Sprays will be necessary to protect late peaches from oriental fruit moth damage.
- Cultivate strawberries. Weed preventers can be applied immediately after fertilizing.
- Watch for fall webworm activity now.

Turfgrass
- Apply insecticides now for grub control on lawns being damaged by their activity.
- Lawns scheduled for renovation this fall should be killed with Roundup. Have soil tested to determine fertility needs.
- During the last week in August, dormant lawns should be soaked to encourage strong fall growth.

- Missouri Botanical Garden-

UPCOMING EVENTS

August 23-November 15: Master Gardener training class, Macon County Extension Center on Wednesdays from 1-4 pm. Some of the classes will have garden tours. Registration forms are available at http://extension.missouri.edu/adair/home.aspx, or email schutterjl@missouri.edu or call 660-665-9866. Deadline to register is August 16. Please help spread the word to any interested person in the Macon/Moberly area and surrounding counties.

Sept. 5-Nov. 21: Master Gardener training, Hannibal, MO, Tuesday evenings, 6-9 p.m. Call 573-769-2177 or http://extension.missouri.edu/marion.

Sept. 14-Oct. 5: Free Classes for Entrepreneurs, 4-7 p.m., Kirksville. Meets on Thursdays. Call Anastasia @ 660-665-3348


December 1 & 2: Missouri Livestock Symposium, Kirksville, MO. http://www.missourilivestock.com/