Purple Power?

I have an opinion on purple-leaved plants. A strong one. A purple- or red-leaved plant placed well in the landscape can be a delight to discover in the garden. However, they can easily be overused. I once visited a garden where there was a purple-leaved Japanese Maple every ten feet in the understory of a forested space. They lost their luster when garden visitors didn’t have a chance to rest their eyes.

Used appropriately, purple-leaved plants can be quite stunning. They provide a great contrast in the landscape and should be used sparingly as accent, specimen plants or in a grouping.

How do purple-leaved plants photosynthesize (make food)? There is still plenty of chlorophyll (where photosynthesis takes place) in the leaves, but it is masked by the pigment anthocyanin, which reflects red or purple wavelengths. Green is actually reflected from plant surfaces rather than absorbed (and used). Carotenoids are also pigments in leaves and when their concentration is high they will reflect yellow and orange-yellow colors (Hello carrots!).

If you are interested in a purple-leaved ornamental plant for your landscape, there are lots of choices. I’ve outlined a few below:

**Flowering Crabapple** (*Malus* spp.): Takes full sun, small tree and has red flowers in spring. Check out the cultivars ‘Prairiefire,’ ‘Purple Prince,’ ‘Candymint,’ ‘Cardinal,’ and ‘Royal Raindrops’ (has “cutleaf” foliage).

**Japanese Barberry** (*Berberis thunbergii*): Medium sized shrub for full sun to part shade. This one has thorns! The best use I’ve heard of for barberries in general is to plant them either under
your bathroom window or under your daughter’s window. All jokes aside, barberries are often overused because they’re colorful and hard to kill. But they can get boring just like the Japanese Maples mentioned previously. Barberries do have their uses in certain circumstances such as a barrier or to direct foot traffic. In that case there are lots of purple leaved forms from which to choose, but I’m fond of ‘Rose Glow’ which has yellow tinged purple flowers in spring and bright red fruit in the fall.

**Japanese Maple** (*Acer palmatum var. atropurpureum*): No discussion of red- and purple-leaved plants would be complete without mention of Japanese Maple. In fact, I think it’s actually a little difficult to find a Japanese Maple that isn’t purple these days. There are many more good cultivars than I can mention (just keep it planted in a protected spot!), but some excellent ones are ‘Bloodgood,’ ‘Crimson Prince,’ and ‘Emperor 1.’

**Ninebark** (*Physocarpus opulifolius*): Full sun to part shade, medium-sized shrub with white flowers in the spring. Great cultivars are ‘Diablo’ and ‘Summer Wine.’

**Plum** (*Prunus cerasifera*): A small tree for full sun, this tree is an “edible ornamental,” meaning you can eat its purple fruit that ripen in summer. Flowers are pale pink to white in late winter. Good cultivars are ‘Newport’ and ‘Thundercloud.’

**Redbud** (*Cercis canadensis*): You can’t go wrong with Redbud and there are some great options in the purple-leaved category. Up first is ‘Forest Pansy’ and ‘Ruby Falls,’ but I think I might be in love with ‘Merlot.’ Every time I see it at our research station I have to stop and admire.

**Smoketree** (*Cotinus coggygria*): This is a large shrub with unique characteristics in the flower hairs which make it look like it’s surrounded by smoke from June through August and sometimes September. Look for ‘Royal Purple’ and ‘Velvet Cloak.’

In terms of herbaceous (non-woody) plants, there are lots of purple-leaved options in annual plants. Ornamental peppers are a favorite as well as kale, sweet potato vine, coleus and some grasses. Go have fun at the garden center and find something that you really enjoy. Just remember—you only need a dash of purple leaves! (CRB)

### PESTS

**Ash Flower Gall**

You may have noticed ugly, gall-like masses in ash trees. This is most likely the ash flower gall.

As with most galls, the ash flower gall is unsightly but does not harm the health of the tree. Though most galls are caused by insects, this one is caused by an eriophyid mite, *Eriophyes fraxinivorus*. These tiny mites (about 0.5 mm long) feed on the
male flower clusters of ash early in the season, transforming the male flowers into irregular, fringed masses. These masses persist until the following spring and become more noticeable when the leaves drop in the fall. Masses start out green but turn black as they dry.

As mentioned, the ash flower gall is unsightly but does not harm the health of the tree. The mites are also difficult to control because they are able enter the flower bud before it is visibly open. Control measures are not recommended. (WU)

**Bean Leaf Beetles**

If the leaves on your beans look like Swiss cheese, check for bean leaf beetles. These are small, yellowish to reddish colored beetles 1/4 inch long with a black band surrounding the outer margin of the wing covers. The back normally sports four black spots. This insect overwinters as adults and starts feeding soon after the beans have come up. Other host plants include peas, cowpeas, soybeans and corn.

Row covers can provide a physical barrier to bean leaf beetles but must be in place before the beetles have found the host. Insecticides also can be effective. Make sure to cover all leaf surfaces including the underside of the leaves. Recommended products include gamma-cyhalothrin (Spectracide Triazicide) and carbaryl (Sevin). Triazicide has a 7 day waiting period between application and harvest and Sevin has a 3 day waiting period. (WU)

**Genista Caterpillar**

If you are growing Baptisia spp (Blue Indigo) in the garden, you should be aware of the genista caterpillar (*Uresiphita reversalis*) which can absolutely devastate this plant. I have observed several cases in both Missouri and Kansas of genista caterpillars feeding on this plant, and causing significant damage. About five years ago, there was a major infestation of genista caterpillars at the John C. Pair Horticulture Center (Haysville, KS).

Adult moths are 1/2 inches in length, triangle-shaped, and light brown in color with a yellow hind wing that contains a brown apex. Female moths lay cream-colored eggs in clusters on leaf undersides. Eggs hatch into caterpillars that are light-orange in color with black and white hairs. They are approximately 1.0 inches long when mature and are light-green in color with white hairs protruding from darkened spots on the body. Damaged leaves appear black or scorched, and
oftentimes you will see fecal deposits ("caterpillar poop") mixed in with webbing on plants that are being fed upon. Caterpillars eventually pupate into white cocoons, which may be attached to buildings or vegetation. There is minimal information available on the behavior and biology of genista caterpillar, and outbreaks are very sporadic, which is likely associated with the abundance of host plants present. There may be two generations per year.

Management involves applying forceful water sprays or handpicking caterpillars and then dropping them into a container of soapy water. Bacillus thuringiensis subsp. kurstaki (Dipel), spinosad (Conserve), pyrethrin, or any pyrethroid-based insecticide including bifenthrin, permethrin, or lambda-cyhalothrin may be effective in suppressing populations of genista caterpillar. However, applications must be made early before substantial plant damage has occurred and when caterpillars are small, especially if using Dipel. (RC)

Editor’s Note: Spinosad can also be found in Fertilome Borer, Bagworm, Leafminer & Tent Caterpillar Spray; Captain Jack's Dead Bug Brew and Monterey Garden Insect Spray. Bifenthrin can be found in Hi-Yield Bug Blaster II and Hi-Yield Bug Blaster Bifenthrin. Lambda-cyhalothrin can be found in Bonide Beetle Killer and Bonide Caterpillar Killer

Jumping Oak Galls

We have had a report of jumping oak galls in the Topeka area. The fallen galls attract attention by jumping an inch or more due to the action of the larva inside the gall.

Jumping oak galls are caused by a very small, stingless wasp that lays eggs on developing oak leaf buds early in the spring. The larva that hatches from the egg will start to feed and juices from the saliva will cause the gall to form. The larva will feed inside the gall which offers a measure of protection. The galls are quite small; about the size of a pinhead. The gall eventually drops out of the leaf and falls to the ground. The galls will then jump due to movement of the larva inside the gall. This helps the insect move into the litter under the tree or into cracks in the soil where the insect will eventually pupate and overwinter. The mature wasp will chew its way out of the gall the next spring to start the cycle over again.

White oaks and members of the white oak family can be affected. Though heavy infestations can cause defoliations, otherwise healthy trees are not appreciably harmed. Even if it were more serious, it is too late to treat by the time symptoms are seen. Often natural controls prevent damage in subsequent years. Keep trees healthy by watering during dry weather. (WU)
Squash Bugs

Squash bugs are the grey, shield-shaped bugs that feed on squash and pumpkin plants. If you have had problems with these insects in the past, you know that they are almost impossible to control when mature. This is because the squash bugs have a hard body that an insecticide has difficulty penetrating. Thus, spraying when the insects are small is important. We are now seeing the nymphs of the first generation. These nymphs will eventually become adults, which will lay eggs that will become the second generation. The second generation is often huge and devastating. Therefore, it is important to control as many squash bugs now as possible.

Because squash bugs feed by sucking juice from the plant, only insecticides that directly contact the insect will work. General use insecticides such as permethrin (Bug-B-Gon Multi-Purpose Garden Dust, Green Thumb Multipurpose Garden and Pet Dust, Bug-No-More Yard and Garden Insect Spray, Eight Vegetable, Fruit and Flower Concentrate, Garden, Pet and Livestock Insect Control, Lawn & Garden Insect Killer), malathion, rotenone, and methoxychlor provide control if a direct application is made to young, soft-bodied squash bugs. This means that you MUST spray or dust the underside of the leaves because this is where the insects live. (WU)

Twospotted Spider Mite on Roses

The twospotted spider mite (*Tetranychus urticae*) is one of the most destructive arthropod pests of roses; particularly from mid-spring through late fall. Twospotted spider mite is a problem on roses for a number of reasons including 1) their small size makes them difficult to detect; 2) they tend to be located on leaf undersides, which also makes it hard to see them; 3) they have a rapid life cycle (egg to adult), which can lead to outbreaks occurring frequently; and 4) populations may become resistant to commonly used pest control materials (miticides).

Twospotted spider mites are usually a problem on roses when the ambient air temperature is warm and dry, which favors mite development and reproduction. Twospotted spider mite populations are located on the older leaves of roses and feed on leaf undersides within plant cells (palisade and spongy mesophyll cells) removing chlorophyll (green pigment) with their stylet-like mouthparts. They primarily feed near the midrib and plant veins, which generally contain the highest concentrations of amino acids (food source), resulting in damaged leaves appearing “stippled” with small silvery-gray to yellow speckles. Heavily-infested leaves may appear
bronzed, turn brown, and fall off rose plants. In addition, mites may create webbing, which provides protection from natural enemies and allows mites to move among plants; especially when roses are spaced close together and leaves are in contact with each other. They may also be moved around via wind currents.

Twospotted spider mites are about 1/16-inches long and oval-shaped. They vary in color from green-yellow to red-orange. Adults have two dark spots (or markings) on both sides of the abdomen. Female adults live about 30 days and can lay up to 200 small, spherical, transparent eggs on leaf undersides. However, females do not have to mate to reproduce. Eggs hatch into six-legged larvae that transition into two eight-legged nymphal stages (referred to as the protonymph and deutonymph) before reaching adulthood. The life cycle from egg to adult takes one to two weeks; however, this is dependent on temperature. For example, the life cycle from egg to adult takes 14 days at 70°F and 7 days at 85°F.

The management of twospotted spider mite populations on roses involves implementing a combination of cultural practices and the use of pest control materials with miticidal activity. First, avoid over-fertilizing roses, especially with soluble forms of nitrogen, because this leads to the production of soft, succulent tissue that is easier for mites to penetrate with their mouthparts. Second, remove “old” plant material, which may serve as an inoculum source for twospotted spider mite populations. Third, avoid water-stressing roses as this increases susceptibility to twospotted spider mites. Fourth, remove weeds as certain weed species including those in the nightshade family and creeping woodsorrel (Oxalis corniculata), which may serve as hosts for twospotted spider mite populations. In addition, mites may overwinter on any weed debris. Another strategy that may be effective in quickly reducing populations of twospotted spider mites is applying a forceful water spray to roses (targeting the underside of leaves) at least twice per week. This not only dislodges all the mite life stages including eggs but also preserves natural enemies. In addition, the mites will not return to feed on your roses. Be sure to conduct forceful water sprays in the morning so the foliage has time to dry before evening, which will avoid problems with the fungal disease, black spot (Diplocarpon rosae).

Scouting or checking your roses regularly is critical in avoiding/reducing the potential of having to deal with outbreak populations of twospotted spider mites during the growing season. One method is too simply look underneath leaves or shake branches over a white sheet of paper. If there are mites present, they will fall onto the paper and start moving around.

There are a number of pest control materials commercially available for regulating populations of twospotted spider mites on roses. These have either contact or translaminar properties. When using contact miticides it is important to get the spray to the leaf undersides. Contact materials include bifenazate (Floramite), hexythiazox (Hexygon), fenpyroximate (Akari), acequinocyl (Shuttle), fenbutatin-oxide (hexakis), insecticidal soap, and horticultural oil. Be careful when using insecticidal soaps (potassium salts of fatty acids) or horticultural oils (petroleum-based) against twospotted spider mites on roses because frequent applications may harm plants. Translaminar means that the active ingredient penetrates the leaf surface and resides or forms a reservoir of active ingredient within the leaf tissues; killing mites that feed on leaf undersides. Pest control materials with miticidal activity that have translaminar properties are abamectin (Avid), spiromesifen (Forbid), and etoxazole (TetraSan).
Always be sure to read the label to determine which mite life stages a product works best on. Also, never apply any pest control material (insecticide, miticide, or fungicide) when the air temperature is greater than 85°F as this may result in plant injury. As for all insect and mite pests that attack roses, it is important to use a combination of different management strategies as opposed to relying only on one such as pest control materials in order to effectively deal with twospotted spider mites. (RC)

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