



Missouri Environment & Garden

Bromeliads: Houseplants that Endure

by *David Trinklein*

When it comes to plants with beautifully colored leaves and novel flowers, the bromeliads have few rivals. These durable members of the pineapple family are native mainly to the tropical Americas. Many are epiphytic and grow in the branches of trees in decomposing organic matter. Others are terrestrial and have normal roots systems. In all cases, they are characterized by foliage that usually grows as a rosette and is vividly colored or patterned, and unique flowers unlike any other in the plant kingdom.



Bromeliads are so numerous that many do not have common names. Instead, they are known by their genus designation such as *Aechmea*, *Bilbergia*, *Guzmania*, *Tillandsia*, *Vriesea*. When common names exist, they often are very descriptive of the plants appearance, such as scarlet star, painted feather, flaming sword and silver vase.

As houseplants the bromeliads are not demanding and their attractive leaves give them continual interest. Flowers, when produced, are very unusual and more diverse than any other family of plants. The inflorescence of most bromeliads take the form of elaborate and vividly-colored spikes enclosed in a colorful sheath and bract structure. This structure remains attractive long after the true flowers have faded giving the plant extended color. Bracts may survive and be attractive for several months up to a year, depending on species and environmental conditions.

Because many species of bromeliads are epiphytic in nature, they have the unique ability to trap and conserve water. The center of the rosette formed by a bromeliad is known as its “cup.” In nature, this cup fills every time it rains and serves as a source of water. Additionally, the cup collects insects and debris which, as they decay, serve as a source of nutrients for the plant.

For best indoor performance, bromeliads should be located in bright, diffused light. Those species with hard, thick leaves (e.g. *Aechmea fasciata*) can put up with brighter light compared with species that have soft, thin leaves. There are no species that perform well indoors under poor light conditions.

In nature, epiphytic bromeliads grow without soil, clinging to trees for support. Even the terrestrial types grow in rocky soils that hold very little water. Therefore, a well-drained growing medium is needed in order for bromeliads to thrive as indoor plants. Shredded bark, leaf mold or peat moss combined with bark, perlite, coarse sand or clay pot shards can provide the aeration and necessary drainage.

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In the home, bromeliads need only light fertilization at monthly intervals when the plants are actively growing. Although they need constant moisture around their roots, excessive moisture encourages root rot. Keeping the cup full of water is considered by many to be a good growing practice.

Bromeliads are not overly particular when it comes to temperature. Those temperatures maintained in the average home for human comfort will also suit most bromeliads. Although bromeliads prefer high humidity, those with thick, leathery leaves are tolerant of the lower humidity levels found in most indoor settings.

Fairly slow to propagate, bromeliads can either be grown from seeds or vegetatively propagated. The latter involves removing and rooting naturally occurring offshoots (pups). Because many of the more attractive species grow rather slowly, the initial cost of a bromeliad sometimes is higher than that of other indoor plants. However, their novelty and durability make them a worthwhile investment.

Some of the more popular bromeliads include silver vase (*Aechmea fasciata*), triblushing (*Neoregelia carolinae* 'Tricolor'), scarlet star (*Guzmania lingulata*) and flaming sword (*Vriesea splendens*). All are epiphytic bromeliads that enjoy warm temperatures and are relatively easy to care for in the average home.

As mentioned above, flowers are not common on bromeliads. Most nurseries that produce bromeliads force them into bloom to make them more attractive at the point-of-sale. This often is accomplished by exposing the plant to chemicals such as Ethephon which cause the plant's cells to release ethylene. The latter is a plant growth hormone which promotes senescence or biological aging.

The same tactic can be used to force bromeliads into bloom in the home using an apple. Place the plant in a clear plastic bag with no holes in it and add an apple. Apples naturally produce significant amounts of ethylene as they ripen. Allow the plant to remain in the sealed bag (with apple) for about a week or 10 days, making sure the plant is not exposed to excessive light while sealed inside the bag. Finally, remove the plant from the bag and place it in its normal location in the home. Depending on species, evidence of flower initiation should occur within about six weeks.

It should be noted that a bromeliad plant flowers only once and then (slowly) dies. The flowering process will, however, encourage the plant to produce offsets as well. These offsets can be removed from the plant to propagate more bromeliads, or allowed to remain on the plant and induced to flower using the process described above.

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Minimizing Bramble Diseases after a Wet Year

by Michele Warmund

Many raspberry and blackberry plantings were infected with diseases this past year due to high rainfall in May. Root rots were prevalent in plantings with heavy soil, as well as anthracnose on canes, leaf spots, and botrytis fruit rot when left uncontrolled. Now is the time to plan for the next growing season and to consider using cultural practices that reduce overwintering diseases.

This winter begin by inspecting bramble plants for any lesions or desiccated areas on canes and shriveled dead fruit that failed to mature. If disease symptoms are few, pruning out last year's fruiting canes may sufficiently reduce the overwintering disease inoculum. Next, thin the canes that will bear fruit in 2016 to ensure rapid drying of foliage during the next growing season and reduce new infections. If diseases were severe last year, all canes can be pruned at the soil surface and removed from the planting. Although this will eliminate or reduce fruit harvested in 2016, it will disrupt the disease cycle of some pathogens. During pruning, also remove nearby wild brambles in adjacent woods or hedgerows as these plants can be sources of viruses.

Another way to minimize bramble diseases is to install trickle irrigation. Inexpensive kits can be purchased with in-line emitters in tubing that deliver water at the soil surface. This type of irrigation system reduces leaf wetness which promotes disease infection. Alternatively, purchase a nozzle for the hose that produces a flat fan pattern of water rather than a wide cone pattern. When irrigation is needed, water only the base of the canes rather than wetting the foliage.

During the growing season, prune out infected plant tissue as soon as symptoms are observed and dispose of the infected material rather than leaving it near the planting where reinfection may occur. Also, when fruit is ripe, harvest berries daily to prevent fruit drop.

Rotting berries left in the planting can be a source of reoccurring disease infection.

When it is time to consider replanting, select plants from a reputable nursery. Before purchasing or accepting a shipment of brambles, inspect the foliage for any defects and do not accept any plant material with visible disease symptoms. If purchasing plants by mail, immediately notify the company and reject them as they should be certified as disease-free. When locating

a new bramble planting, avoid a site where other raspberries, blackberries, strawberries, elderberries, gooseberries, currants, stone fruits, tomatoes, peppers, or other *Verticillium*-susceptible plants have been grown previously. *Verticillium* is a soil-borne pathogen that causes wilting, dieback, and can kill many different plant species. For a list of *Verticillium* susceptible plants, see [http://www.missouribotanicalgarden.org/gardens-gardening/your-garden/help-for-](http://www.missouribotanicalgarden.org/gardens-gardening/your-garden/help-for-the-home-gardener/advice-tips-resources/pests-and-problems/diseases/cankers/verticillium-wilt.aspx)

[the-home-gardener/advice-tips-resources/pests-and-problems/diseases/cankers/verticillium-wilt.aspx](http://www.missouribotanicalgarden.org/gardens-gardening/your-garden/help-for-the-home-gardener/advice-tips-resources/pests-and-problems/diseases/cankers/verticillium-wilt.aspx). Soil fumigation or soil solarization can be used to eliminate this disease, but these are not always feasible methods of control.

Once the new site is located, consider planting raspberries on a raised bed, especially if the soil is not well-drained to avoid *Phytophthora* root rot. Excessive rainfall and puddled water after irrigation create favorable conditions for root rot. While no raspberry cultivar is immune to *Phytophthora*, Latham, Boyne, Killarney, Anne, and Nordic are among the least susceptible cultivars, whereas, Titan, Heritage, and Reveille are susceptible to this disease. Blackberries and black raspberries are generally less susceptible to root rot than red or purple raspberries. Recommendations for chemical control of *Phytophthora* can be found in the 2016 Midwest Small Fruit and Grape Spray Guide available from University Extension.



FEBRUARY GARDENING CALENDAR

Category	Week				Activity
	1	2	3	4	
Ornamentals	x	x	x	x	Winter aconite (<i>Eranthis</i> sp.) and snowdrops (<i>Galanthus</i> sp.) are hardy bulbs for shady gardens that frequently push up through snow to bloom now.
	x	x	x	x	Water evergreens if the soil is dry and unfrozen.
	x	x	x	x	Inspect summer bulbs in storage to be sure none are drying out. Discard any that show signs of rot.
	x	x	x	x	Enjoy the fragrant blooms of the Ozark Witch Hazel flowering in shrub borders or wooded areas on warm sunny days.
	x	x	x	x	Take geranium cuttings now. Keep the foliage dry to avoid leaf and stem diseases.
			x	x	Sow seeds of larkspur, sweet peas, Shirley poppies and snapdragons where they are to grow outdoors now. To bloom best, these plants must sprout and begin growth well before warm weather arrives.
			x	x	Seeds of slow-growing annuals like ageratum, verbena, petunias, geraniums, coleus, impatiens and salvia may be started indoors now.
				x	Dormant sprays can be applied to ornamental trees and shrubs now. Do this on a mild day while temperatures are above freezing.
				x	Start tuberous begonias indoors now. "Non-stop" varieties perform well in this climate.
	Vegetables	x	x	x	x
x		x	x	x	Start onion seeds indoors now.
x		x	x	x	Run a germination test on seeds stored from previous years to see if they will still sprout.
x		x	x	x	Don't work garden soils if they are wet. Squeeze a handful of soil. It should form a ball that will crumble easily. If it is sticky, allow the soil to dry further before tilling or spading.
			x	x	Sow celery and celeriac seeds indoors now.
			x	x	Sow seeds of broccoli, cauliflower, Brussels sprouts and cabbage indoors now for transplanting into the garden later this spring.
			x	x	If soil conditions allow, take a chance sowing peas, lettuce, spinach and radish. If the weather obliges, you will be rewarded with extra early harvests.
Fruits		x	x	x	x
	x	x			Collect scion wood now for grafting of fruit trees later in spring. Wrap bundled scions with plastic and store them in the refrigerator.
			x	x	Grapes and bramble fruits may be pruned now.
			x	x	Begin pruning fruit trees. Start with apples and pears first. Peaches and nectarines should be pruned just before they bloom.

Gardening Calendar supplied by the staff of the William T. Kemper Center for Home Gardening located at the Missouri Botanical Garden in St. Louis, Missouri. (www.GardeningHelp.org)

FEBRUARY GARDENING CALENDAR

Category	Week				Activity
	1	2	3	4	
Fruits cont.			x	x	When pruning diseased branches, sterilize tools with a one part bleach, nine parts water solution in between cuts. Dry your tools at day's end and rub them lightly with oil to prevent rusting.
				x	Established fruit trees can be fertilized once frost leaves the ground. Use about one-half pound of 12-12-12 per tree, per year of age, up to a maximum of 10 pounds fertilizer per tree. Broadcast fertilizers over the root zone staying at least one foot from the tree trunk.
Miscellaneous	x	x	x	x	To avoid injury to lawns, keep foot traffic to a minimum when soils are wet or frozen.
	x	x	x	x	When sowing seeds indoors, be sure to use sterile soil mediums to prevent diseases. As soon as seeds sprout, provide ample light to encourage stocky growth.
	x	x	x	x	Repot any root-bound house plants now before vigorous growth occurs. Choose a new container that is only 1 or 2 inches larger in diameter than the old pot.
	x	x	x	x	To extend the vase life of cut flowers you should: 1. - Recut stems underwater with a sharp knife. 2. - Remove any stem foliage that would be underwater. 3. - Use a commercial flower preservative. 4. - Display flowers in a cool spot, away from direct sunlight.
	x	x			Now is a good time to learn to identify trees by their winter twigs and buds.
	x	x			Branches of pussy willow, quince, crabapple, forsythia, pear and flowering cherry may be forced indoors. Place cut stems in a vase of water and change the water every 4 days.
		x	x	x	Watch for squirrels feeding on the tender, swollen buds of Elms, Hickories, Oaks and other trees as spring approaches.
		x	x	x	Maple sugaring time is here! Freezing nights and mild days make the sap flow.
		x	x	x	Begin to fertilize house plants as they show signs of new growth. Plants that are still resting should receive no fertilizers yet.
			x	x	Now is a good time to apply appropriate sprays for the control of lawn weeds such as chickweed and dandelion.
			x	x	Tall and leggy house plants such as dracaena, dieffenbachia and rubber plants may be air layered now.
			x	x	Save grape vine prunings for making into attractive wreaths and other craft objects.
				x	Late winter storms often bury birds' natural food supplies and a well stocked feeding station will provide a life-giving haven for our feathered friends.
				x	Encourage birds to nest in your yard by providing water and by putting up bird houses. Planting suitable shrubs, trees, vines and evergreens will provide wild food sources and nesting habitat.

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