



IPM Annual Report 2016 Debut

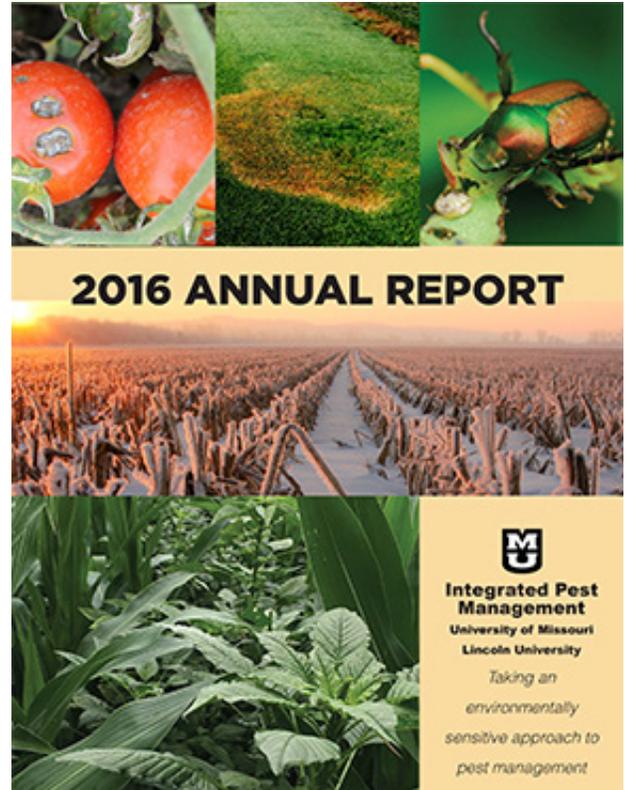
by Lee Miller and Jaime Pinero

For over 30 years, the University of Missouri IPM program has served the agriculture, horticulture, and urban pest management sectors in educating Missouri's citizens on responsible and sustainable pest management methods. An interlinked community of state faculty specialists, regional extension specialists, the MU Soil Testing and Plant Diagnostic Service, and MU IPM staff strive to deliver timely updates of ongoing and potential pest problems, and the research-based approaches to controlling them. Coordinating our efforts with our partners at Lincoln University broadens the reach of our land grant mission and allows the collective to accomplish even more. In 2016, we unveiled a new IPM website for Missouri that acts as a modernized communication vehicle for our pest monitoring program, newsletter articles, and social media information. Our state and regional specialists are engaged in an array of research programs that aren't just a reaction to current problems, but also proactively plan for future pest threats. I hope you enjoy this 2016 update of our observations and activities, and look forward to serving you again in 2017.

Lee Miller, Associate Professor, Division of Plant Sciences

Lincoln University (LU) has served the needs of underserved Missourians since 1866. Missouri farmers growing specialty crops (vegetables and fruits in particular) are the primary audience of the LU IPM program. This past year has brought about some pest challenges and many opportunities for IPM. Extension activities implemented in 2016 focused on (1) invasive and emerging pests, (2) closing the knowledge gap between IPM and organic agriculture, (3) demonstrating the benefits of ecologically-based IPM, and (4) fostering IPM adoption by small- and mid-scale growers.

Dr. Jaime C. Pinero, Associate Professor, State Extension Specialist-IPM



In This Issue

IPM Annual Report 2016 Debut	1
Kalanchoe: The Versatile Houseplant	2
February Gardening Calendar	3



Kalanchoe: The Versatile Houseplant

by David Trinklein

Most houseplants are grown for their attractive foliage. In contrast, there are other potted plants that are prized for their flowers which, unfortunately, are relatively short-lived. Very few plants can boast of colorful, long-lasting flowers and attractive foliage the remainder of the year. Kalanchoe delivers both, making it a very versatile houseplant.

If you received a kalanchoe for Christmas this past holiday season, you have a plant that should provide you with many years of pleasure. Kalanchoe's small, bright flowers with four petals come in colors of yellow, orange, red, pink and magenta. They are borne in profusion and continue to provide color for several months during the winter. Additionally, their fleshy, succulent leaves with scalloped margins make them an attractive houseplant, even when not in bloom. The fact they can easily be re-bloomed make them even more attractive as a gift plant that "keeps on giving".

The most widely-grown kalanchoe as a houseplant is *Kalanchoe blossfeldiana*, or Florist Kalanchoe. It represents an example of a plant whose genus classification also is its common name. Pronunciation of the latter varies. However, most authorities suggest kalanchoe should be pronounced with four syllables, with an accent being placed on the third syllable whose "ch" is pronounced like a "k" (i.e., kal-un-KOH-ee).

Most kalanchoes are native to Madagascar and tropical Africa. One species (*Kalanchoe pinnata*) often is grown because of its unique method of propagation. When a leaf is cut from the plant, it is able to produce new, young plantlets along its edge. Thus, it is commonly called "air plant". Another species (*Kalanchoe daigremontiana*) reproduces viviparously. It bears copious numbers of plantlets along the edges of its leaves while they still are attached to the main plant. These plantlets drop off and readily root around the base of the main plant, giving rise to its common name of "mother-of-thousands".

The cultural requirements of most kalanchoes are nearly the same. They enjoy bright light and a well-drained growing medium. Plants tend to get "spindly" under low-light conditions and must not be over-watered. Like most succulents, kalanchoes are better "equipped" to handle dry conditions, opposed to wet conditions. Therefore, allow the growing medium to dry slightly before watering. Fertilize with a houseplant fertilizer according to label directions when the plant is making active growth.

Florists Kalanchoe should be provided with a night temperature of about 60 degrees F to grow and flower best.

Day temperatures should be maintained about 10 degrees higher than those at night. Temperatures over 75 degrees F tend to delay or reduce flowering.

Like poinsettia, kalanchoe requires short days (long nights) for flowers to develop. For Christmas blooming, short-day treatment should be started around the middle of September. The greatest number of blooms will be produced when kalanchoe is given a dark period of 14 hours. No light should be permitted at any time during the dark period. Of course, following the daily dark period, exposure to light for the remaining ten hours in the day is required if the plant is to bloom.



Kalanchoes destined to be re-bloomed should be kept growing vigorously from the time they stop blooming in the winter until they are exposed to short-days the following September. Therefore, in spring, after the danger of frost has past, the plants can be moved outdoors and placed in light shade or indirect sun.

Plants that have grown to be tall and leggy should be cut back to about half of their height. Fertilize during the summer every two to three weeks with a houseplant fertilizer according to label directions.

Bring plants back indoors around Labor Day and begin the short-day treatment described above around mid-September. Feed and water sparingly during flower induction. Plants should bloom in about six weeks.

Kalanchoes, have few insect or disease problems. Over-watering most often results in crown rot which leads to the sudden collapse of the plant. Powdery mildew can be a problem when kalanchoes are grown in a greenhouse, although the relative humidity of the average home is too low for the disease to be a problem.

Propagation of kalanchoes is relatively easy using stem-tip cuttings two to three inches in length whose flowers have been removed. Stick cuttings in a porous germination medium such as a mixture of peat and vermiculite. Maintain a high relative humidity around the cuttings. Rooting should occur within two to three weeks.

Note: Most species of *Kalanchoe* (including *K. blossfeldiana*) contain cardiac glycosides which are toxic to many animals, including dogs and cats. Flowers contain more glycosides than other parts of the plant. Because of the hazard kalanchoes pose, the U.S. Food and Drug Administration recommends they should be kept at a safe distance from household pets.

FEBRUARY GARDENING CALENDAR

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)

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	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	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.

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.

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)