THE OHIO STATE UNIVERSITY

Ohio State University Extension
Auglaize County
Top of Ohio EERA
208 South Blackhoof Street
Wapakoneta, OH 45895-1902

419-739-6580 Phone
419-739-6581 Fax
www.auglaize.osu.edu

OSU Extension - Auglaize County Weekly Horticulture Newsletter – 12-20-19

Blushing Bromeliad and its Care

Blushing bromeliad is a member of the bromeliaceae or bromeliad family in which pineapple is a member. The scientific name for blushing bromeliad is *Neorogelia carolinae*. Blushing bromeliad is native to Brazil, Columbia, and Peru and grows naturally on trees in the rainforest or among other species on the forest floor. Blushing bromeliads form a rosette of long (about 1 foot) narrow shiny leaves with a spiny margin. The carolinae or perfecta tricolor variety has the most attractive leaves of this species, having green and whitish colored stripes along the length of each leaf.

Before plants begin to flower, the center of the plant or the base of the leaves will turn a deep pinkish red color. The cluster of small non-showy flowers that are violet in color eventually make their way out of the small bracts flowering at any time of the year.

After the plant flowers, it will begin to die off as it only flowers once. As it is dying off the plant will go through the process of producing pups which can be removed and propagated into the next flowering plants. When removing the pups wait to remove them until roots begin to grow or they reach about a third of the size of the mother plant and cut them off as close to the main stem as possible. Use a well-drained loose potting media when planting the pups.

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The plants should be kept at room temperature or higher. Blushing bromeliads like bright light, although filtered sun or some combination of sun and shade is best. Blushing bromeliads need little fertilizer as too much can cause leaf color loss. It is best to provide high humidity for the blushing bromeliad. Water the plants with luke-warm water and place some of the water into the base of the plant.

House Plants May Improve Air Quality

Golden pothos

Mother-in-law's tongue

Air pollution in a home can be two to five times worse than outdoor air quality, especially in today's homes that are tightly sealed. One way to improve air quality is to raise indoor plants. Plants obviously take in carbon dioxide and release oxygen during photosynthesis. But plants can also take in harmful gases, such as benzene, formaldehyde, trichloroethylene, and others from the air.

Some pollutants can also be tied to the potting media the plants are growing in. Micro-organisms in the soil become adept at using trace amounts of harmful chemicals as a food source. Remove leaves from the soil surface to allow the most uptake of the harmful gases into the potting media.

Most likely all household plants will take in some amount of harmful gases, but not all houseplants have been tested. Some houseplants are better at removing certain gases compared to other houseplants. Since most houseplants are tropical or sub-tropical plants they can process gases more efficiently under low light intensities compared to full sun plants.

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Some current research reports that Dracaena is most effective at absorbing acetone. The blushing bromeliads performed best at removal of six different volatile organic carbon compounds. However other researchers say that plants do not remove enough pollutants from the air. Therefore an enormous amount of plants will be necessary to remove enough pollutants according to some.

The 1989 NASA studies recommend the use of 15 to 18 good-sized houseplants in 6 to 8-inch diameter containers to improve air quality in a 1,800 square foot home. The more vigorous the growth the better plants will remove pollutants from the air.

The best 15 species tested in the NASA study for removing air pollution were English ivy (*Hedera helix*), spider plant (*Chlorophytum comosum*), golden pothos (*Epipremnum aureum*), peace lily (*Spathiphyllum 'Mauna Loa'*, Chinese evergreen (*Aglaonema modestum*), bamboo or reed palm (*Chamaedorea sefritzii*), snake plant or Mother In-Law's Tongue (*Sansevieria trifasciata*), heartleaf philodendron (*Philodendron scandens 'oxycardium'*), selloum philodendron (*Philodendron selloum*), elephant ear philodendron (*Philodendron domesticum*), red-edged dracaena (*Dracaena marginata*), cornstalk (*Dracaena fragrans 'Massangeana'*), Janet Craig dracaena (*Dracaena deremensis 'Janet Craig'*), Warneck dracaena (*Dracaena deremensis 'Warneckii'*), and weeping fig or ficus (*Ficus benjamina*). The Boston fern is really good at removing pollutants as well, but is difficult to grow indoors.

Local Observations

Good morning! I pray you are well! Snow and cold weather has returned! This will be the last newsletter until January 10th.

It rained only 2 days this past week and snowed 2 days this past week. Rainfall on Saturday, December 14th, ranged from 0.08" at about 3 miles west of St. Marys and near Bloody Bridge to 0.15" at Kettlersville and Santa Fe – New Knoxville roads. Total liquid precipitation on Monday ranged from 0.03" at Wapakoneta – Fisher and Townline – Lima roads to 0.2" at about 1 mile northeast of Fryburg. Total liquid precipitation on Tuesday ranged from 0.03" at Wapakoneta – Fisher and Townline – Lima roads to 0.2" at about 1 mile north of St. Marys and at about 1 mile northeast of Fryburg. Liquid precipitation for the week ranged from 0.28" near Bloody Bridge to 0.5" at about 1 mile northeast of Fryburg. Liquid precipitation for the week was 0.36".

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Snowfall on Monday ranged from 1.5" at about 3 miles west of St. Marys and near Bloody Bridge to 2.5" at my house south of St. Marys. Snowfall on Tuesday ranged from 1.5" at my house south of St. Marys to 2.6" at Wapakoneta – Fisher and Townline – Lima Roads. Snowfall for the week ranged from 3.8" at about 3 miles west of St. Marys to 5" at 1 mile north of St. Marys and at Wapakoneta – Fisher and Townline – Lima roads. Average snowfall for the week was 4.36".

The average high temperature now is 37 degrees F. Temperatures were above normal for the 13th and 14th and temperatures were below normal for the rest of the week.

I assume the bees are doing fine. Been too cold to check on them.

VegNet

No news this week

BYGL

No news this week

Other Articles

Earth Star Bromeliads Are a Versatile, Easy Houseplant

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December 17, 2019 | Meghan Shinn
Source: https://www.hortmag.com/plants/plants-we-love/earth-star-bromeliads-are-a-versatile-easy-houseplant


Cryptanthus bivittatus, a kind of earth star bromeliad, boasts colorful variegation.

Virtues: Earth stars, a type of bromeliad, are easy-to-grow houseplants with few demands. With their range of colors, compact habit and slow growth, they are the perfect botanical element to add to any interior. They're also fun to mix into winter holiday displays and centerpieces.
Common name: Earth star bromeliad
Botanical name: *Cryptanthus* species
Exposure: Bright but indirect light
Season: All year, for foliage
Foliage: The earth star gets its common name from its overall shape. It grows as a rosette of stiff, pointed, overlapping leaves. These can range in color through reds and pinks to various shades of green, with or without white or hued stripes.

Habit: Exact size can vary by species, but earth stars typically grow three to six inches tall and wide. While many bromeliads lack a complex root system, this type develops strong roots that function just like those of most familiar garden or indoor plants.

Origins: *Cryptanthus* species come from the rain forests of Brazil, where they inhabit the forest floor.
How to grow earth star bromeliads: Pot these plants as you would most other tropical houseplants, using a fertile, moisture-retentive potting mix. Bromeliads enjoy humid conditions. Here's how to provide higher humidity indoors. Place an earth star where it will receive bright light, but not direct sun, which could scorch the leaves. Keep in mind that in nature it grows on the floor of the rain forest. These plants cannot withstand cold temperatures and they are used as a houseplant in many regions, but they can be grown year-round in the garden in frost-free areas, or moved to a shaded spot outside for the summer where winters are cold.

New methods promise to speed up development of new plant varieties

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Source: https://www.hortidaily.com/article/9174189/new-methods-promise-to-speed-up-development-of-new-plant-varieties/

A University of Minnesota research team recently developed new methods that will make it significantly faster to produce gene-edited plants. They hope to alleviate a long-standing bottleneck in gene editing and, in the process, make it easier and faster to develop and test new crop varieties with two new approaches described in a paper recently published in *Nature Biotechnology*.

Despite dramatic advances in scientists' ability to edit plant genomes using gene-editing tools such as CRISPR and TALENs, researchers were stuck using an antiquated approach -- tissue culture. It has been in use for decades and is costly, labor intensive and requires precise work in a sterile environment. Researchers use tissue culture to deliver genes and gene editing reagents, or chemicals that drive the reaction, to plants.

Researchers triggered seedlings to develop new shoots that contain edited genes. Credit: Kit Leffler, University of Minnesota.

"A handful of years ago the National Academy of Sciences convened a meeting of plant scientists, calling on the community to solve the tissue culture bottleneck and help realize the potential of gene editing in plants," said Dan Voytas, professor in Genetics, Cell Biology and Development in the College of Biological Sciences and senior author on the paper. "We have advanced genome editing technology

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but we needed a novel way to efficiently deliver gene editing reagents to plants. The methods in this paper present a whole new way of doing business."

The new methods will:

- drastically reduce the time needed to edit plant genes from as long as nine months to as short as a few weeks;
- work in more plant species than was possible using tissue culture, which is limited to specific species and varieties;
- allow researchers to produce genetically edited plants without the need of a sterile lab, making it a viable approach for small labs and companies to utilize.

To eliminate the arduous work that goes into gene-editing through tissue culture, co-first authors Ryan Nasti and Michael Maher developed new methods that leverage important plant growth regulators responsible for plant development.

Using growth regulators and gene editing reagents, researchers trigger seedlings to develop new shoots that contain edited genes. Researchers collect seeds from these gene-edited shoots and continue experiments. No cell cultures needed.

The approaches differ in how the growth regulators are applied and at what scale. The approach developed by Nasti allows small-scale rapid testing -- with results in weeks instead of months or years -- of different combinations of growth regulators. "This approach allows for rapid testing so that researchers can optimize combinations of growth regulators and increase their efficacy," he said.

Maher used the same basic principles to make the process more accessible by eliminating the need for a sterile lab environment. "With this method, you don't need sterile technique. You could do this in your garage," he said. He added that this technique opens up the possibility that smaller research groups with less resources can gene edit plants and test how well they do.

"Nasti and Maher have democratized plant gene editing. It will no longer take months in a sterile lab with dozens of people in tissue culture hoods," Voytas said.

The researchers used a tobacco species as their model, but have already demonstrated the method works in grape, tomato and potato plants. They believe the findings will likely transfer across many species. Plant geneticists and agricultural biotechnologists aim to ensure stable food sources for a

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growing global population in a warming climate, where pest outbreaks and extreme weather events are commonplace. These new methods will allow them to work more efficiently.

For more information:
cbs.umn.edu

The wild relatives of major vegetables, needed for climate resilience, are in danger

Source: https://www.hortidaily.com/article/9173200/the-wild-relatives-of-major-vegetables-needed-for-climate-resilience-are-in-danger/

Growing up in the wild makes plants tough. Wild plants evolve to survive the whims of nature and thrive in difficult conditions, including extreme climate conditions, poor soils, and pests and disease. Their better-known descendants—the domesticated plants that are critical to a healthy diet—are often not nearly as hardy. The genes that make crop wild relatives robust have the potential to make their cultivated cousins—our food plants—better prepared for a harsh climate future. But a series of new research papers show these critical plants are imperiled.

"The wild relatives of crops are one of the key tools used to breed crops adapted to hotter, colder, drier, wetter, saltier and other difficult conditions," said Colin Khoury, a scientist at the International Center for Tropical Agriculture, or CIAT. "But they are impacted by habitat destruction, over-harvesting, climate change, pollution, invasive species, and more. Some of them are sure to disappear from their natural habitats without urgent action."

Khoury and colleagues' latest focus has been on the wild relatives of vegetables, including chili peppers, lettuce, and carrots. Their most recent publication was on the distribution, conservation status and stress tolerance of wild cucurbits, or the gourd family, which includes zucchini, pumpkins, and squash. The findings were published online Dec. 10 in Plants People Planet.

Read the full article at Phys.org

Prepared by Jeff Stachler
Ohio State University
Agriculture and Natural Resources Extension Educator, Auglaize County