

Summer Gardening to Support Pollinators

Between 75%-95% of the world's flowering plants rely on insects and other animals for pollination (Ollerton, 2011). Unfortunately, intensive agriculture methods that homogenize the landscape have led to declining numbers of unique native bee species among other pollinators. During the summer, horticulturalists and gardeners have a prime opportunity to enjoy the gorgeous blooms of native plants that also support the pollinators which are so essential for plant life. So, how do we plan our gardens to maximize support for pollinators?

- **Choose native:** Choosing native plants is a great way to support pollinators. Native plants are better suited to provide food and shelter for native pollinators that evolved alongside the local flora. Further, plants that are native to your region are typically going to be hardier to local conditions like drought, heat or disease. Planting some non-native species is okay too; just be sure that the more aggressively growing species do not outcompete your native plants.
- **Plant diversity:** Cultivating a diverse array of native flowers will help provide resources for many different pollinators. Some species have a specialized plant-pollinator



A bumblebee rests on a sunflower. Photo by Allison Huddleston

relationship and may favor specific flower shapes or structures. When choosing your combination of pollinator plants, try to create a continuous source of food for pollinators by selecting plants that will bloom sequentially. Not only does this enhance the visual appeal of your garden, but it also ensures a consistent supply of nectar and pollen for local species.

- **Landscape layout:** Since more diversity is better, embrace creativity with your pollinator garden design. Incorporating a mix of flowering trees or shrubs, vining plants and wildflowers will create an exciting look and provide ample resources for pollinators. Avoid isolating individual plants; instead, cluster flowers of the same species to optimize pollinator foraging efficiency.
- **Cautious pesticide use:** Minimize pesticide application, particularly insecticides, to mitigate unintended harm to pollinator populations. A pollinator-friendly and often more cost-effective alternative is using biological pest control, which harnesses the natural predators of pest species to control pest populations. If insecticides must be used, avoid applying directly to a flower and schedule applications for the evening after most pollinators are done foraging for the day.

Recommended native species for the summer:

- American wisteria (*Wisteria frutescens*): Vining plant with clusters of violet blooms
- Butterfly weed (*Asclepias tuberosa*): Bushy herbaceous perennial with bright orange flowers
- Purple coneflower (*Echinacea purpurea*): Herbaceous perennial with long-lasting, pinkish purple blooms
- Black-eyed Susan (*Rudbeckia hirta*): Annual or short-lived perennial with cheerful yellow flowers

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For more information:

- Ollerton, Jeff, et al. "How Many Flowering Plants Are Pollinated by Animals?" *Oikos*, vol. 120, no. 3, 2011, pp. 321–26.
- Xerces Society for Invertebrate Conservation. "Pollinator Plants: Southeast Region." <https://www.xerces.org/>

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A colony of fire ants builds a mound in a lawn. Photo by Brennan Stutes

Fire Ant Management

Summertime in Louisiana means many things including a lot of sunshine, high temperatures and large amounts of humidity but also wonderful garden landscapes and blooms of all sizes and colors. Even though school may be out for the summer, baseball pitches are still being thrown at Alex Box Stadium, and a cool glass of sweet tea or a refreshing slice of watermelon is a welcomed break from cutting the lawn or weeding the flower bed.

Not welcomed, however, is the annual backyard invasion by fire ants who will typically remain hidden until an unsuspecting gardener realizes much too late that they are covered in the swarm and have already been bitten many times. Fire ants, their unwanted colonies, as well as their painful and venomous bites are obviously a nuisance that many Louisianans encounter during the summer months. Even worse though, they can also negatively impact their immediate surroundings.

Fire ants are known to displace and even eliminate native species that nest and feed on the ground. Insects and spiders, as well as smaller reptiles and amphibians

like lizards and frogs, have fallen victim to fire ant colonies. Perhaps even more frightening is that small mammals and birds are not safe either and have become prey to the fire ant mounds. The aggressive behavior towards other species living near the fire ant colony impacts the environment negatively because insects and other animals that typically pollinate plants are suddenly no longer around to do so. Fire ants, however, have an appetite for more than just insects as well as other neighbors of their mound. A popular item on the menu are seeds which fire ants will eat or otherwise damage. The outcome is a decline in plant species and other major ecosystem changes.

Fire ants have become a widespread problem in Louisiana and other parts of the country. States like Hawaii are quite concerned about the impact fire ants would have on their ecosystems. It appears then that something must be done about fire ants, and typically the answer to insect problems is pesticide. But which pesticide should you buy? The problem is not necessarily too few choices but rather too many. Companies sell many different pesticides with different brand names and different active ingredients to fight common pests you may encounter in your garden or flower bed. Adding to the complexity are the various forms the product can be bought in, for example, as a liquid, a granulate, a powder or even a gas. Basically, one cannot see the proverbial forest for the trees.

So, what is the best way to decide which product to buy? Typically, any purchasing decisions are made based on the price before other factors such as quantity or quality come into play. The most affordable option is typically also the most selected option. Maybe in this case the buying decision should be made based on another factor: Is the pesticide organic? The reason for this is relatively simple. Pesticides are technically a poison that kills the targeted pest. Some consumers may feel uncomfortable applying poison to their lawn where their children play or to their garden bed in which they grow peppers and tomatoes for consumption. A pesticide with the active ingredient Spinosad may be the solution here. Spinosad is a naturally occurring pesticide that is made by soil bacteria and can control a variety of pests including mosquitoes, fruit flies, spider mites, leaf miners, and most importantly, ants.

Pesticides with Spinosad as an active ingredient are available under a variety of brand names from various companies and promise to affect fire ants within 12 to 24 hours with guaranteed dead fire ants past the 24-hour mark. Even though it works quickly, it is nontoxic to humans in small amounts, is not considered a carcinogen and can be applied near fruit and vegetables grown for consumption without a second thought. Anyone that has been bitten by fire ants before knows of the pain that they can cause. This summer, help the ecosystem in your garden by removing fire ant colonies in an organic manner.

*Alessandro Holzapfel
Extension Associate*



Checklist for June, July, August

Vegetable Gardening in the Summer

As we approach these hot summer months, there is plenty to do in the vegetable garden. Irrigation should be at the top of every gardener's list of things to check, especially considering last summer's drought. Maintaining even soil moisture is the key to success. Vegetables don't particularly like dry, nor saturated soils. Drip irrigation helps maintain soil moisture while watering at the base of the roots and thus lessening disease pressure. If you haven't already installed an irrigation system, consider doing so. Flooding row middles makes it hard to walk in the garden, aids in the spread of soilborne diseases, and if administered infrequently, can lead to split tomato skins. Overhead irrigation helps spread fungal spores from plant to plant. Drip irrigation is the ideal form to apply, as it is cost friendly and places water right at the roots of the plants. The two most important times plants need water are during the first two weeks after planting seeds and transplants and during bloom. Gardeners are planting and harvesting various crops throughout the summer, meaning irrigation is critical especially if we have another hot dry summer this year. If you can do only one thing to improve your summer garden, install irrigation before the fall.

There is much to do! See the notes below on gardening in June, July and August.

June

1. Mid-June, plant a summer crop of heat-set tomatoes. Planting heat-set tomatoes is VERY important. These cultivars have been bred to set fruit during high nighttime temperatures whereas, other cultivars will not. If managed correctly, heat-set tomatoes will produce fruit until a frost or freeze. Heat-set varieties include but are not limited to Tribute, Heatmaster, Summerset, Sun Sugar, Super Sweet 100, Phoenix, Florida 91, BHN 964 and Bella Rosa among others. Heat-set tomatoes can be planted again in late July for fall tomato production.
2. Collard greens, cucumbers, watermelon, cantaloupe, okra, southern peas, pumpkins (end of June for a Halloween harvest) and summer squash can all be direct seeded into the garden during June.
3. Start transplants of eggplants, peppers and sweet potato slips during June as well.



Photo by [tristanaverythomas](#) from Pixabay

July

1. Transplant a fall crop of heat-set tomatoes and bell peppers. Direct seed okra, southern peas, cucumbers, squash, cantaloupe, pumpkins and watermelons throughout July. Late June through mid-July is the optimum time to plant pumpkins for a Halloween harvest.
2. Late July through early August is a good time to start thinking about your fall garden. Order broccoli, Brussels sprouts, cauliflower, Chinese cabbage, cabbage, collard green, mustard green, kale, turnip, radish and other fall crop seeds. If you want an early September planting of these crops, start seed in seedling trays in early August. Start your seed outdoors in a sunny area that is protected from foot traffic. Greenhouse or cold frames are not needed to start a fall crop as the weather is so warm. Transplants need to be watered daily so make sure they are in a very visible location. Start seed five to six weeks prior to the desired transplant date for broccoli, Brussels sprouts, cauliflower, Chinese cabbage and cabbage. Greens such as kale, Swiss chard, mustard and collards can be started as transplants or directly sown into the garden.

August

1. Plant bush snap and bush lima beans throughout August.
2. Transplant broccoli and Brussels sprouts as early as mid-August in the garden. In north Louisiana start your lettuce seed, and plant beet and Irish potato seed in the garden.
3. In late August, south Louisiana gardeners can start their lettuce seed and plant beet and Irish potato seed into the garden. All gardeners, regardless of location, can plant transplants of broccoli, Brussels sprouts, cauliflower, Chinese cabbage, cabbage, cucumbers, squash, mustard greens and shallot sets in late August. Be cautious when doing this because insect pressure and heat are very high. Planting an early fall garden in late August requires time, care and scouting.
4. If you hate the heat, consider pulling all vegetables out of the garden and planting a cover crop of southern peas to add nitrogen to the soil and shade out the weeds. However, if you do this to maximize nitrogen, till the pea plants under as they bloom and before they set pods.

*Kathryn Fontenot, Ph.D.
Southwest Regional Director*

Beehive Buzz:

Organic Pesticides Versus Pollinators

Many gardeners want to protect their vegetables and fruits from insect pests while avoiding synthetic or chemical insecticides. One solution is to use organic pesticides to maintain yields without synthetic products, and the LSU AgCenter strives to share information to bring organic practices to home gardeners.

These organic insecticides are designed to control insect pests, but what happens if beneficial insects are exposed to organic pesticides? Let's examine some of the effects of popular organic pesticides on beneficial insects such as pollinators and predators of insect pests.

- ***Bacillus thuringiensis*:** This pathogen, also known as Bt, attacks the stomach of caterpillars that become moths and butterflies. Bt is lethal to butterflies so gardeners should take care when applying Bt around the preferred host plants of their favorite butterfly. Dennis Ring, a former entomologist with the AgCenter, wrote about the safety of Bt for bees, "Applications of Bt to insects not susceptible will not kill them. It does not kill predators, parasites,



A bee on a chaste tree. Photo by Heather Kirk-Ballard/LSU AgCenter

or bees. Bt is most effective against young larvae and usually does not kill insects in the adult or other growth stages."

- **Diatomaceous Earth (DE):** Joe Willis, a horticulture agent with the AgCenter, wrote, "Diatomaceous earth is not a poison; it does not have to be eaten to be effective. Diatomaceous earth causes insects to dry out and die by absorbing the oils and fats from the cuticle of the insect's exoskeleton and its abrasive, sharp edges speed up the process." DE is effective on insects that forage on the ground and would have little impact on bees and other flying insects.
- **Horticultural Soaps:** Ring shared these notes about using horticultural soaps as an organic pesticide, "Insecticidal soaps are effective on small, soft-bodied insects, but they do not kill many beneficial insects or other insects. These products' modes of action include suffocation of the insect, dehydration, removing waxes from the cuticle of the insect and disrupting cellular membranes."
- **Kaolin Clay:** Willis reports that, [kaolin clay] "acts as a broad-spectrum agricultural crop protectant for controlling damage from various insect and disease pests, a growth enhancer, and as a protectant against sunburn and heat stress." The U.S. Environmental Protection Agency (EPA) published a kaolin fact sheet that said, "EPA finds that kaolin is not harmful to non-target organisms or to the environment. For example, studies with spiders and honeybees indicate that kaolin appears to have no adverse effects on beneficial insects/spiders."

- **Neem Oil:** Among organic products, neem oil seems to be very risky and affects pollinators and other beneficial insects. Willis made a couple of observations about neem oil and its products, “Neem oil has several modes of action. The oil forms a coating on the insect body that blocks the breathing openings (spiracles) and suffocates the insects.” He also adds, “Azadirachtin (an active ingredient in neem oil) is a powerful insecticide that affects insects in several ways. It is an antifeedant, insect growth regulator, sterilant, repellent and oviposition inhibitor.” The Master Gardeners of Contra Costa County, California, reported, “The University of California considers neem oil as moderately toxic to bees and recommends application only during late evening, night, or early morning and when plants are not blooming, i.e., when bees are not typically out foraging.”
- **Pyrethrum:** An EPA evaluation from 1991 succinctly reported, “This study is scientifically sound, and shows pyrethrum extract to be highly toxic to honeybees.”
- **Spinosad:** Willis reported that Spinosad is “toxic to honeybees and other pollinators but only during the first three hours following application.”
- **Horticultural Oils:** Daniel Lewis, a retired entomologist at Iowa State University, discusses the advantages of using horticultural oils and said, “Oil sprays are exceptionally safe to humans (the pesticide applicator as well as others). They have little if any effect on wildlife and nontarget insects in the environment (ladybugs, parasitic wasps, honey bees, etc.) Oil sprays are less toxic because of the method by which they kill target pests. Oils are not poisons. Instead, the thin film of oil covers the target insect or mite and plugs the spiracles or pores through which it breathes. The cause of death is primarily suffocation. Large, motile insects and animals that breathe by another method are not affected by these oils.”

If you want to contact Beehive Buzz, please email your questions and pictures to khawkins@agcenter.lsu.edu or call 337-463-7006. Also, you can join the “beemail” email list by sending your request to the email address above.

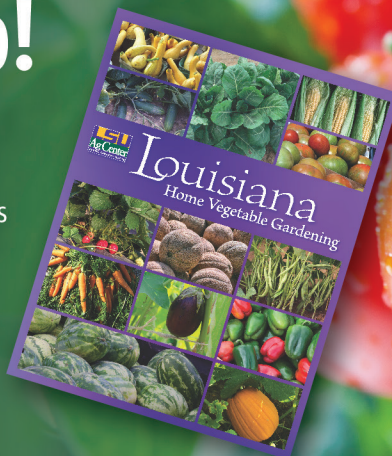
*Keith Hawkins
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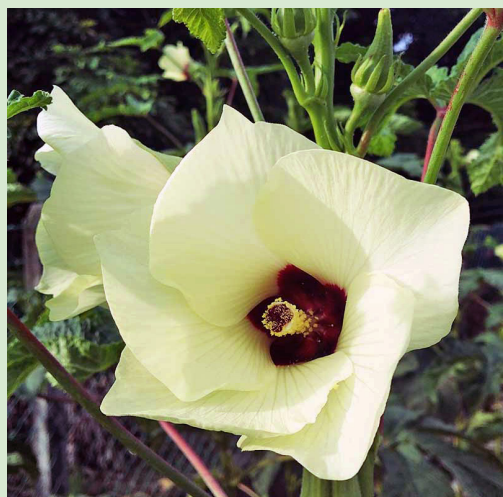
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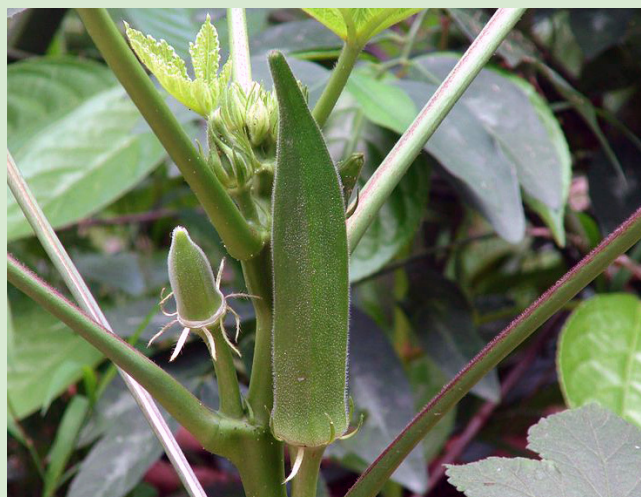


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Left, the yellow flowers of okra are edible. Photo by Chris Armstrong

Right, pick pods at 2-4 inches in length to ensure tenderness. Photo by Nancie Mandeville



Gombo

Gumbo here in Louisiana evokes images of deliciousness that will warm your bones and delight your senses. But the word “gombo” in much of the Francophone world evokes images of a different type of deliciousness: okra! Quiaabo, quimbombo and calou also refer to these beloved green pods, and like the words okra and gombo, are also terms that originate in Africa. We need not cross the Atlantic to its homeland to appreciate this vegetable.

Perhaps you need not travel any farther than your doorway. Okra loves Louisiana and Louisiana loves it. *Abelmoschus esculentus* grows optimally in full sun and heat. In fact, okra should not be planted until you are certain that your soil has warmed to at least 65 F with 70 F and higher being ideal, so do not plant too early. Prior to this planting, be mindful of the hard seed coat. Facilitate germination by soaking the seeds overnight or scarifying with sandpaper or appropriate comparable material. Quality drainage is best, however, okra will grow and produce even in clay soil, which is further evidencing okra’s love for us.

Just as we need our okra, okra needs its nourishment. Fertilize with 2-3 pounds of 8-24-24 fertilizer per 100 feet of row, as you may wish to begin with lower nitrogen and higher phosphorus and potassium. Alternatively, fertilize with 3-4 pounds of 8-8-8 per 100 feet of row. At first pod set, you may sidedress and again every four to six weeks throughout the season. Do not overfertilize with nitrogen because it may result in poorer production.

Viewing the creamy yellow flowers with deep purple centers in your landscape is reason enough to grow okra. The flowers are edible, too. Couple this with the cherished pods and this plant’s appeal is heightened. Be diligent in harvesting the pods every day or two once available starting approximately two months from planting. They will keep coming. To ensure

the tenderness of pods, pick them at 2-4 inches in length. If the tip snaps, it is tender. Tough, fibrous pods should be removed to optimize production. You may cut back plants to 12-18 inches tall later in summer, aiding a second crop.

Immediate consumption may not keep pace with production, so store properly. After handling gently to avoid bruising, wash the pods and drain well. Store okra in the refrigerator for approximately seven days. Should you still be unable to keep pace with production, freeze the okra by blanching, draining and packaging in moisture/vapor-proof bags or containers. Fully mature, almost dry pods may be harvested at the end of the season to save seed. All such measures are worthwhile, as okra is not only tasty, but a good source of vitamin C, calcium, iron and fiber.

Annie Oakley and Cajun Delight are hybrid varieties to consider, while Clemson Spineless, Emerald and Burgundy, which produces a red pod, are open-pollinated varieties. If interested in large pods, Cowhorn could be your selection. Shorter, bushier varieties suited for containers include Jambalaya and Baby Bubba. Okra has a deep taproot, so grow in 5-gallon containers or larger.

A crooked, curled or bent pod was likely visited by a stinkbug or leaf-footed bug, insects that also appreciate okra. It may still be consumed. Control is likely unnecessary unless there is still active feeding. Among other common pests are aphids and whiteflies, both of which may be controlled with insecticides containing an appropriate pyrethroid or malathion, as well as horticultural oil. Diseases such as Cercospora leaf spot and powdery mildew may be treated with fungicides containing chlorothalonil.

Call it gombo. Call it okra. Call it ours!

Paul Bongarzone
Assistant Extension Agent

Summer Turfgrass Weed Control

The summer and fall of 2023 were ones for the ages. Unprecedented heat and drought caused many unirrigated lawns to take a beating, and weeds, ever the opportunists, were happy to infest bare areas and drought-weakened

turf. The keys to maintaining a healthy lawn that will choke out weeds and stand up to drought start with following best management practices year-round to ensure your lawn is in fighting shape when Mother Nature takes a turn.



Drought-stressed zoysia in Baton Rouge during the summer of 2023. Photo by Eric DeBoer

Best Management Practices

Regular mowing at the appropriate height for your grass type promotes dense, weed-resistant turf. St. Augustinegrass and bahiagrass perform best when mowed no lower than three inches. Aim for a 1.5-2.5-inch height of cut for bermudagrass, zoysia and centipedegrass. When mowing, never remove more than one-third of the total length of the grass blade at any one event. This rule is commonly referred to as the “one-third rule.” A simple method to help avoid breaking the one-third rule is to multiply your desired height of cut by 1.5, and then mow before it reaches that height. For example, if you’re mowing at three inches, you need to mow before the grass is 4.5 inches tall (3 inches $\times$ 1.5 = 4.5 inches). Frequent mowing is the No. 1 thing you can do to increase turf density while simultaneously discouraging competition from weeds. Many weeds can’t handle the repeated defoliation of mowing like our turfgrasses are able to. Just mowing your lawn at least once per week throughout the growing season can have a great impact on turf density and weed encroachment. Even though mowing is great to do, it will always be a stress for the grass. Sharp mower blades reduce the amount of stress placed on the grass from mowing. Dull blades fray the leaves, resulting in a

brown tinge on the leaf tips and jagged wounds that don’t heal as quickly as clean cuts do.

I am going to sound like a broken record, but dense, healthy turfgrass is the best defense against weeds. Spring and summer are the main seasons to focus on nitrogen (N) fertilization of the warm-season grasses that grow throughout Louisiana. Nitrogen fertility ensures that your lawn has the nutrients necessary to outcompete weeds vying for a spot in the lawn. When fertilizing, N is typically measured as pounds of N per 1,000 square feet of grass. The amount of N contained in a bag of fertilizer can be determined by multiplying the weight of the bag by the percent N on the label (the first of the three numbers N-P-K on the bag). For example, a 50-pound bag of fertilizer with an analysis of 46-0-0 (N-P-K) contains 23 pounds of N (50 pounds $\times$ 46% = 23 pounds of N). You will need to determine your lawn size to know how many pounds of N are being applied per square foot. For bermudagrass and St. Augustinegrass, aim to apply up to a total of 3 pounds of N per 1,000 square feet from April through August, never applying more than 1 pound of N per 1,000 square feet in any one event. Zoysia, bahiagrass and centipedegrass can get by with up to 2 pounds of N per 1,000 square feet throughout the season, and carpetgrass will be able to get away with less than that.



Compacted soil thins turf and gives an advantage to weeds like annual bluegrass pictured here. Photo by Eric DeBoer

Proper watering practices consist of deep and infrequent irrigation cycles applied in the early morning hours. Frequent or daily irrigation keeps the soil surface moist, which is exactly what weed seeds need to germinate and infest your lawn. Remember that deep and infrequent mean different things for different grasses and soils, but the idea is to maximize the window between irrigation events. Aim to water your lawn no more than three days per week. Irrigation windows can be tightened in the event of extreme heat and drought. Avoid overwatering to prevent waterlogging and disease. Limit irrigation to outside the hours of 9 a.m. to 6 p.m. as the evaporative potential is highest at this time of day. Watering in the early morning hours is ideal. Aim to deliver approximately 1 inch of water to your lawn weekly by supplementing rainfall with irrigation. Purchase a rain gauge to keep track of Mother Nature's free irrigation and supplement with your irrigation system to reach an inch of water per week.

Additionally, aerating compacted soil can enhance water infiltration, gas exchange, root growth and overall lawn resilience, especially in Louisiana's heavy soils. Many weeds can outcompete turf in compacted soils. Weeds like annual bluegrass (*Poa annua*), goosegrass (*Eleusine indica*) and dallisgrass (*Paspalum dilatatum*) can be indicators

of soil compaction. April through July is a great time for a core-aerification to reduce compaction and increase root growth. Lawn care professionals can aerate your yard, or you can rent an aerator for a DIY approach.

Chemical Controls

When all of the best management practices for lawn maintenance still aren't enough to keep weeds out of your lawn, chemicals may become necessary for difficult-to-control weeds. Summer is too late to control summer annual weeds with preemergence herbicides, and many postemergence options work best on seedling weeds, so the sooner you spray, the better off you'll be. Always make sure to fully read the label of the herbicide you're using and wear any suggested personal protective equipment. Reference the [Louisiana Suggested Chemical Weed Management Guide](#), available as a free download from the LSU AgCenter website, for chemicals that control your specific weed in question. Remember that proper identification is the most important aspect of control. Consider investing in a phone app that can identify weeds or refer to the [LSU AgCenter turfgrass website](#) for weed profiles with photos and chemical controls.

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Upcoming Events:

- **Discover Nature Program — Jennifer Blanchard: Medicinal Plants for the Garden**
Tuesday, June 25, 6:30 p.m. to 8 p.m.
Hilltop Arboretum, 11855 Highland Road, Baton Rouge, Louisiana
- **Inaugural Southwest Region Home Vegetable Garden Field Day**
Wednesday, June 26, 5 p.m. to 8 p.m.
H. Rouse Caffey Rice Research Station, 1373 Caffey Road, Rayne, Louisiana
- **Sweet Potato Field Day**
Thursday, Aug. 29, 8 a.m. to 4:30 p.m.
LSU AgCenter Sweet Potato Research Station, 130 Sweet Potato Road, Chase, Louisiana



Horticulture Hints

for Louisiana

Summer 2024

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