



GN Gardening Magazine

December 2022

In This Issue:

Look at Me—Nasturtiums (*Tropaeolum majus*)

By: Anna Timmerman

Free Leaves

By: Chris Dunaway

What's Bugging You? Gulf Fritillary Butterfly (*Agraulis vanilla*)

By: Dr. Joe Willis

Plant Nutrition Part V Soil Tests

By: Dr. Joe Willis, Dr. Brenda Tubana,
Dr. Franta Majs

Home for the “Holly-days”

By: Dr. Damon Abdie, Jason Stagg,
Dr. Jeb Fields

Coccinellidae: The Lady Beetles

By: Will Afton

Cold Weather Invaders

By: Dr. Aaron Ashbrook

December Planting Guide

In the Kitchen with Austin

Local Garden Centers

December Garden Checklist

Lawn Care Do's & Don'ts

A gulf fritillary butterfly collects water droplets from the leaves of a mustard plant.

Photo by Chris Dunaway

Look at Me Nasturtiums (*Tropaeolum majus*)

One of my absolute favorite cottage flowers for the cool season also does double-duty as an edible with a nose-twisting punch. Nasturtiums (*Tropaeolum majus*), also known in parts of the world as Indian cress, trophy cress, “nose-twister”, or trophywort, are a beautiful annual native to Peru and other parts of South America. Over 500 years ago, the Spanish conquistadors brought seeds back to Europe from South America, where they were grown and shared widely. In our climate, nasturtiums grow best when night temperatures are cool. They are easy to direct sow 1/4” deep from seed September through March. They will grow throughout the winter and into the spring months and are tolerant of light frost. Nasturtiums do best in full or partial sun, in rich, well-draining soil. They can take some drought but prefer evenly moist soil. They do great in garden beds, raised beds, and containers. Little to no fertilizer is needed as they tend to produce mostly foliage and few blooms if overfertilized.

Nasturtiums typically have either a mounding or a moderate vining growth habit, capable of reaching up to 18 inches in height, with vining cultivars reaching 6-10 feet in length. The foliage is round with a smooth or slightly scalloped edge, with a central petiole attachment, much like a lily pad. Leaves may be green or dark blue-green, or variegated. The flowers are showy, with five sepals, with the uppermost one elongating into a nectar spur. Flowers are typically white, cream, yellow, orange, red, mahogany, pink, or some deviation (pastel or bi-color combinations) of those colors. The fruits formed when these complete flowers are pollinated are naked and almost nut-like, with three single seed segments. All parts of the nasturtium plant are edible and have a wasabi-like nose-

twisting flavor. The name nasturtium comes from the Latin “nasus” for nose, and “tortus” for twisted. Take a bite and you can easily see why this is an appropriate name.

Nasturtiums will bloom throughout the cool season and make a great addition to flower beds, container or window

box gardens, or kitchen gardens. Transplants can sometimes be found at the local garden center, but they are very easily grown from seed. I like to tuck a seed or two in the corners and around the edges of my raised beds to obtain a cascade of nasturtiums over the edges. Nasturtiums are a good trap crop of aphids, which tend to enjoy the blooms. There is evidence that nasturtiums repel certain pests in the garden, including whitefly, squash bugs, cabbage looper caterpillars, and cucumber beetles. I like interplanting my nasturtiums into my kitchen garden to reap these benefits. Bees, butterflies, and other pollinators utilize the nectar of the flowers as a food source.



Photo by Anna Timmerman

A honeybee visits a nasturtium flower in the New Orleans Botanical Gardens.

As an herb and edible flower, nasturtiums are one that I look forward to each year. Their peppery, wasabi-like flavor adds a pop to salads when you mix in the young leaves or flowers. The leaves and flowers also make a beautiful garnish for cocktails, pastries, or fancy dinner plates. I’ve spotted them used in restaurants seasonally for these purposes. The still-green seeds, when collected prior to browning and ripening, can be pickled, and have a texture much like capers. The seeds can be harvested when dry and saved for planting next season by storing them in a paper sack in the refrigerator. Nasturtiums are a cheery, bright addition to my garden each winter, take a look and think about adding a few to your garden this season.

~Anna Timmerman

December Vegetable Planting Guide

Crop	Recommended Variety
Beets	Detroit Dark Red, Kestrel, Red Ace Fl, Ruby Queen
Brussels Sprouts	Jade Cross E, Long Island Improved
Cabbage	Blue Vantage, Platinum Dynasty, Stonehead, Cheers, Blue Dynasty, Emblem, Rio Verde
Carrots	Danvers 128, Purple Haze, Thumbelina, Apache, Enterprise, Maverick, Sugar Snax 54
Celery	None Given
Chinese Cabbage	None Given
Collards	Champions, Flash, Georgia Southern, Top Bunch, Vates
Garlic	Creole: Early, Louisiana, White Mexican; Italian: Early Red, Lorz; Large: Elephant (Tahitian)
Kale	None Given
Kohlrabi	Early Purple Vienna, Early White, Vienna, Winner
Leeks	Alora
Lettuce	Esmeralda, New Red Fire Fl, Nevada, Tall Guzman Elite
Mustard Greens	Florida Broadleaf, Greenwave, Red Giant, Southern Giant Curled, Savannah, Tendergreen
Onions	Red: Red Creole, Southern Belle; White: Candy, Savannah Sweet; Vidalia: Candy Ann, Caramelo, Century, Georgia Boy, Mata Hari
Radishes	Cherriette, Champion, White Icicle, April Cross
Shallots	Matador, Prism
Spinach	Bloomsdale Long Standing, Melody, Tyee, Unipak 151
Swiss Chard	None Given
Turnips	Alamo, All Top, Purple, Top White Globe, Seven Top, Southern Green, Top Star, Tokyo Cross

Free Leaves

When it comes to gardening, two of the most expensive components, and at the same time can be the most important,

are compost and mulch.

Premium garden soil from some of the most popular brands sell for over \$10 per bag and that is only 2 cubic feet of soil. To fill a modest raised bed measuring 4 feet x 4 feet x 18 inches deep would require 12 bags. That is at least \$120.00 in soil. That much money could buy a lot of vegetables and fruit. Furthermore, that expensive soil will continue to break down and will need to be replenished each growing season.

Mulch is also obnoxiously expensive and to make things worse, many of the products available commercially are not good to use. Cypress wood mulch, for

example, does not provide as much insulation and protection from weeds as other choices. On top of that, cypress wood mulch is harvested from swamp forests leading to destruction of wetlands and loss of habitat. Another popular choice to use in our area is pine straw. Several companies now offer pine straw mulch in bags, bails or larger rolls. Each bale is around \$8 each and will cover an area of roughly 30 square feet or a garden measuring 10 feet x 3 feet. That doesn't seem so bad but pine straw also

decomposes and you will need to add mulch to your garden twice per year.

What if I told you that you could make your own high

quality garden soil at home and easily collect enough free mulch to last the whole year? That's right. I do it myself and so can you. Last week I emptied my compost bin and was able to collect nearly 25 cubic feet of finished compost. Once I add amendments to make garden soil, I can have as much as 50 cubic feet or the equivalent of 25 bags of premium soil. **That's \$250 of soil that I made at home for Free!**

As the leaves fall from our trees at this time of year we have to decide what to do with them. We can bag them up and have them taken to the local landfill. This may take them out of site and mind but it also takes away the benefits that

they could provide. If you are going to bag up the leaves, please use clear bags. This will facilitate other collectors to gather the leaves for use.

For oak and other hardwood trees, I prefer to compost them. Home composting can be easy and finished compost is the prime ingredient of premium garden soil. The simplest way to compost is to mulch the leaves with a lawnmower and let break down in place. They can also be composted using some form of composter or just in a pile on the ground. For more



Photo by Chris Dunaway

I raked up cypress leaves along Bayou St. John in New Orleans and make bales with a homemade bailer box.

information about composting check out our online composting course. [Click here to go to https://www.lsuagcenter.com/topics/lawn_garden/master%20gardener/home-composting-class](https://www.lsuagcenter.com/topics/lawn_garden/master%20gardener/home-composting-class).

Another fantastic use for leaves is to use them as a mulch in our gardens and around trees and shrubs. Hardwood leaves should be shredded which can be done using a bagging mower. Shredding them will make them more uniform in size and appearance and will help prevent them from blowing around. Pine straw and cypress leaves are also available in abundance at this time. Although most of our commercially available pine straw comes from the Northshore and Mississippi, there are a surprising number of pine trees in the New Orleans area. Cypress leaves are my favorite mulch of all. It stays fresh in storage and maintains its appearance in the garden. It also resists crushing so that it provides superior insulating and weed preventing properties.



Photo by Chris Dunaway

Finished and screened high quality compost.

Another thing that I like about them is that, with a tiny bit of effort, they are **completely free**.

At this time of year, I keep my rake and a few bags in my truck and am ready to grab up some compostables and mulch when I see it. I also pick up bagged leaves ready for trash collection. Heck someone else already did over half the work. So get out there this year and gather up your fallen leaves to use as compost and mulch. You can save some money and benefit the environment at the same time.

~Chris Dunaway



Photo by Chris Dunaway

My backyard composting bin is made from repurposed fence boards. It measures approximately 3' wide x 3' deep x 3.5' high



Photo by Chris Dunaway

Master Gardener Volunteers from the LaSalle Park Garden collect cypress leaves for mulch from the nearby arboretum.

What's Bugging You - Gulf Fritillary Butterfly (*Agraulis vanillae*)

Wait a minute. Isn't it December? Why am I talking about the Gulf Fritillary Butterfly now? Aren't Spring and

Summer the time of year for butterflies? Well, Fall is an especially busy time for caterpillars in southern Louisiana.

Lepidopteran insects, such as butterflies and moths, have two big seasons of activity in Louisiana - early Spring (March - April) and Fall (October - December). As the weather begins to get colder, it is the last chance for the Gulf Fritillary to complete a life cycle before moving southward. Gulf Fritillary overwinters as adults in frost-free areas. About the only place they are found in winter in the U.S. is

extremely southern areas of Florida and Texas. But right now in Louisiana, there are a lot of adults emerging from chrysalises and tanking up before moving to warmer climes.

The Gulf Fritillary, *Agraulis vanillae*, is a medium sized, brightly colored butterfly common across southern portions of the United States. Adults have a wingspan of 2.5" to 3.75". The butterfly wing upper surface is orange with black markings. The hindwing has a band of black circles along the outer margin. The forewing has black longitudinal streaks with three black spots with white centers along the

forward margin and three black spots mid-wing. The lower wing surface is brown with numerous elongated, black-rimmed silver spots.

Female adults lay yellow eggs singly on or near the

host plant. The host plants for the Gulf Fritillary are passionflower vines - species of the *Passiflora* genus.

Emerging larvae quickly find their host plant and remain on the passionflower feeding until mature. The mature larvae are bright orange with numerous black, branched spines. The spines are soft to the touch and do not sting but the larvae are poisonous if eaten. This toxicity helps protect the larvae from predators. Birds avoid them. Not so with the

European paper wasp, *Polistes dominula*. They eat the eggs, the caterpillars, the chrysalids, and the adults, carrying food back to their colony. Birds will eat adult Gulf Fritillaries as do anoles and geckos. When the larvae mature, they migrate, sometimes very long distances, before attaching and forming a chrysalis.

The chrysalis (pupa) is mottled brown and irregularly shaped.

Adult butterflies soon emerge from the chrysalis and begin the life cycle again. Gulf Fritillary butterflies have multiple generations per year. Adult butterflies collect nectar from a broad range of flowering plants.



Photo by Chris Dunaway

A Gulf Fritillary *Agraulis vanillae* butterfly drinking water from a cabbage leaf.

Adult fritillaries can be found in most open sunny areas where flowering plants are accessible.

The Gulf Fritillary butterfly is one of our more common butterflies and they'll be hanging around, beautifying our landscape until the weather gets too cold. But look for them again as soon as the warmth of Spring arrives.

~Dr. Joe Willis

Selected References

Daniels, J.C. 2016. Gulf fritillary butterfly. UFL Extension publication EENY-423. [Gulf fritillary - *Agraulis vanillae* \(Linnaeus\) \(ufl.edu\)](https://www.ufl.edu/extension/publications/EENY-423/Gulf-fritillary-Agraulis-vanillae-Linnaeus-ufl.edu)

Garvey, K.K. 2016. And Along Came a Wasp. Bug Squad. <https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=21966>

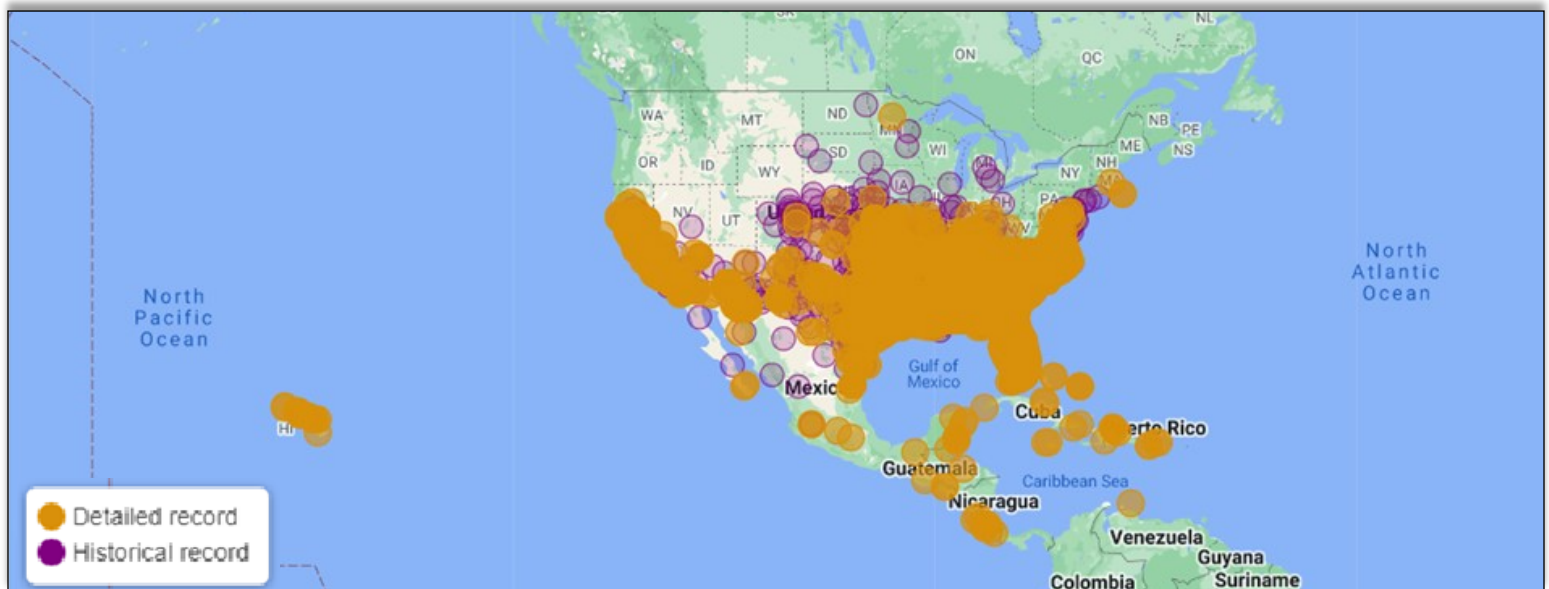
Gulf Fritillary: From Egg to Butterfly. 2022. WFSU Public Media Ecology Blog. [Want to See the Gulf Fritillary Life Cycle? Plant Passionflower! \(wfsu.org\)](https://www.wfsu.org/2022/04/20/gulf-fritillary-from-egg-to-butterfly/)



Photo by Chris Dunaway



Gulf Fritillary *Agraulis vanillae* live cycle. A = Egg, B = Larva, C = Chrysalis (pupa), D = Adult newly emerged from the chrysalis.



Range of the Gulf Fritillary butterfly (*Agraulis vanillae*).

Plant Nutrition V – Soil Tests

I'm sure you've heard the mantra, "Don't Guess, Soil Test". And one of the first questions that a horticulture agent will ask you when you send them pictures of a "less than healthy" plant or lawn is, "Have you done a soil test?"

Throughout this series of articles, soil tests have been brought up over and over. Since they seem to be a subject of every soil/plant article and are apparently valued by horticulture agents, then we should look more closely at the subject of "Soil Tests".

Many gardeners have taken soil samples for soil tests and diligently sent them off for analysis. They get the results, look them over and, based on the number of phone calls we get, ask, "What does it all mean?" Many of you use the

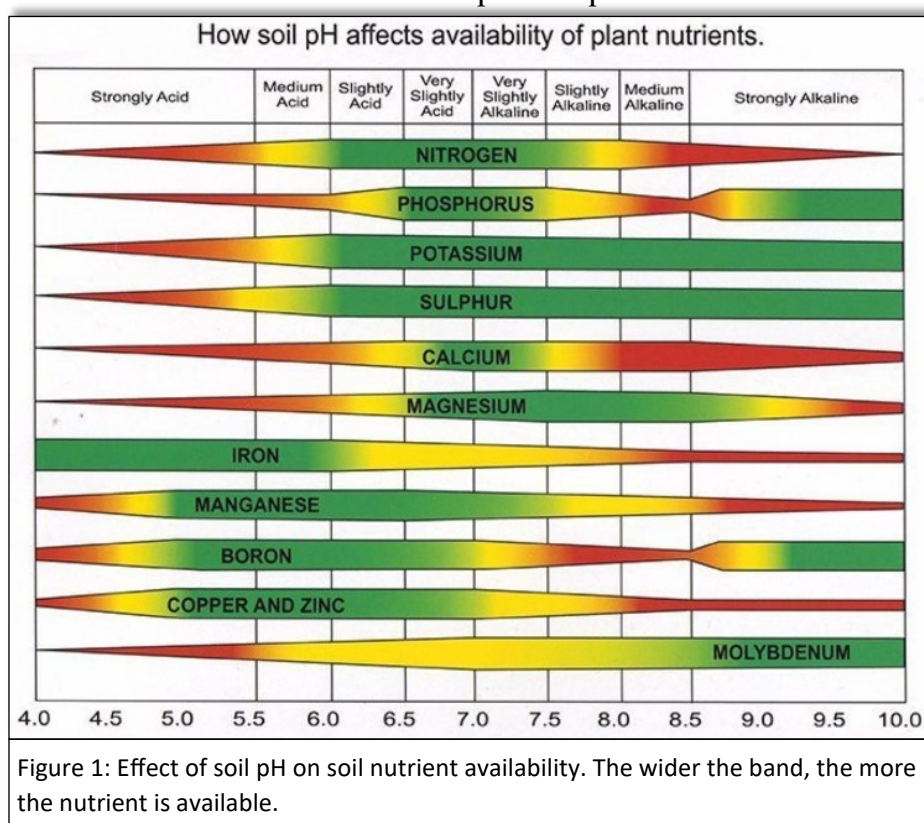
LSU AgCenter Soil Testing & Plant Analysis Lab (STPAL) to perform your soil tests. Therefore, we will use their report to explore what we can learn from soil analysis.

Routine Soil Test

Soil pH

At the STPAL, soil pH is measured in 1:1 suspension of soil in deionized water and Louisiana

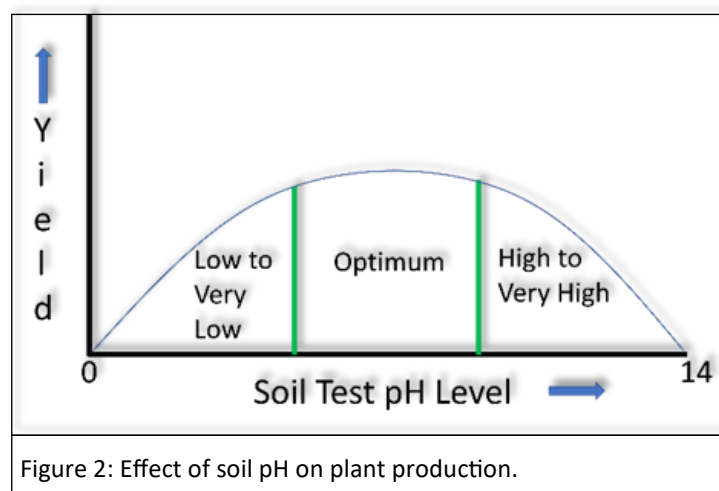
interpretations are based on that method. Other laboratories may use different ratios or even different background liquids, which will result in different pH values. Figure 1 shows the relationship between soil pH and plant nutrient availability for most plants,



which is in the slightly acidic range. However, there are plants that prefer a more acid and others that prefer a more alkaline pH. Plants can take up their nutrients only in specific chemical forms. Because soil pH affects chemical composition of soils, it has great influence on whether the soil nutrients are available to plants.

Soil test pH results will range from very

low – low – optimum – high – very high. Each plant species has a pH range that is considered optimum



for its peak performance. Figure 2 shows the effect of soil pH on plant performance which can be evaluated by different metrics such as the plant's appearance or yield.

When you submit a soil sample for testing, you indicate what you plan to grow, and the soil pH interpretation is based on

the requirements of the plants that you plan to grow

and on the measurement method. While the optimum pH is the most desirable, in most cases, the shoulders near the optimum curve will suffice. In cases where the pH is far outside the optimum range, the soil test results will make recommendations for raising or lowering the soil pH (see GNO Gardening 11/21 and 12/21 for articles on how to adjust soil pH).

Phosphorus, Potassium, Calcium, Magnesium, Sodium, Sulfur, Copper, Zinc

At the STPAL, availability of these plant macro- and micronutrients is evaluated by extraction with Mehlich 3 reagent and the Louisiana interpretations are based on that method. Other laboratories may employ different reagents. For each of these nutrients reported on your soil test results, there will be an interpretation ranging from very low – low – optimum – high – very high. Figure 3 shows the expected plant yield results for given nutrient levels in the soil.

What the interpretation range means is, when the soil test is very low to medium, addition of this nutrient fertilizer is expected to give a yield/performance increase. When the soil test result is optimum to very high, addition of this nutrient fertilizer will give no yield/performance increase. When fertilizer addition is recommended for soils testing high, the addition is to maintain soil fertility at the desirable level. In general:

Rating	Meaning
Very Low	Less than 50 % of the crop yield potential or esthetic value is expected without the addition of that nutrient.
Low	Somewhere between 50–75 % of the crop yield potential or esthetic value is expected without the addition of that nutrient.

Medium

High

Very High

From 75- to perhaps 95 % of the crop yield or esthetic value is expected without the addition of the nutrient.

A yield increase to the added nutrient or an increase in esthetic value is not expected. The soil can supply the entire crop nutrient requirement for both the vegetative and reproductive stages of development.

A yield increase or increase in esthetic value from adding that nutrient is not expected. The soil can supply much more than the entire crop requirement, and still contain a reserve of that nutrient for the next crop.

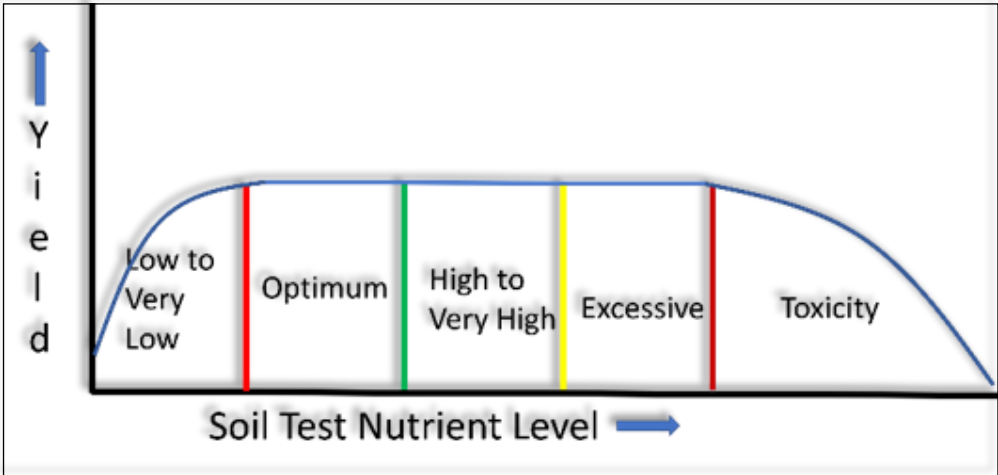


Figure 3: Plant yield based on soil nutrient levels.

What about “Excessive” levels of these nutrients?

Excessive phosphorus, particularly in combination with a high soil pH (above 6.5), can induce micronutrient deficiencies of zinc and iron. Excessive phosphorus levels may also have negative environmental impacts to nearby water sources.

When it comes to potassium, plants are able to tolerate relatively large extractable concentrations. However, excessive potassium can induce deficiencies of other nutrients such as nitrogen, calcium and magnesium.

Excessive calcium is unlikely to cause toxicity in and of itself, but just like potassium, it can reduce the uptake of other nutrients (mostly cations) with corresponding consequences.

Magnesium toxicity is rare.

Sodium is not a plant nutrient for most plants because it does not meet the strict definition of “essentiality.” However, it is required by some plants such as corn and it plays a role in soil health. High levels of sodium indicate salinity or sodicity problems such as poor soil structure. Excess sodium can also reduce the uptake of other nutrients by plants.

For practical purposes, sulfur toxicity should be considered unlikely as sulfate, the main form of sulfur in soil, can be leached after major rain events. Excess soil sulfur can prevent the uptake of other nutrients though - nitrogen for example.

Excessive copper can inhibit iron uptake by plants and can also stunt growth. Excess soil copper can inhibit seed germination. If you find excessive levels of copper in your soil, ensure your soil has enough phosphorus and zinc, that the pH is not too low (too acidic) and add plenty of organic matter such as compost on a regular basis.

Zinc toxicity is most common when plants are grown in acidic soil and in the presence of excessive soil magnesium. In tests, concentrations above 150 ppm Zn corresponded to severe stunting.

You may have noticed that nitrogen levels in the soil are not part of the routine soil test even though it is the most prominent nutrient among those obtained by plants from soil. Soil nitrogen levels fluctuate because it is susceptible to loss. In addition to the desired loss by crop removal, it can be lost by leaching, denitrification, or volatilization.

Denitrification is the microbial process of reducing nitrate ion to nitrite ion and then to gaseous forms of nitrogen. If you take a soil sample in the morning and a second sample in the evening after a day of heavy rain, the levels of phosphorus and potassium will be similar in both samples. However, nitrogen levels may vary greatly because the heavy rain will leach a large amount of the available nitrogen out of the root zone.

Soil mineral nitrogen in form of ammonium ion is susceptible to loss in soil with pH above 7.5 due to volatilization in form of ammonia gas.

Recommendations

Along with the results of your routine test, there will also be recommendations based on the results of your test and the crop you indicated that you plan to grow. If the pH is too high or too low, there will be a recommendation of the amount of lime or sulfur you need to add to correct the pH. The recommended amount should be added to the soil all in one application and thoroughly mixed into the top 4-6” of soil.

If there is insufficient phosphorus available, there will be a recommendation of the amount of triple super phosphate ($\text{Ca}(\text{H}_2\text{PO}_4)_2 \cdot \text{H}_2\text{O}$) also known as 0-45-0 to add to the soil. Triple super phosphate is the most common and readily available agricultural source of phosphorus. All of the recommended amount should be added to the soil at the beginning of the growing season. Except for sandy soils, phosphorus is not susceptible to leaching losses and will remain in the root zone for a duration of a growing season. However, it is not recommended to fertilize with phosphate in excess of one growing season as the unused excess gradually precipitates in the form of insoluble salts.

If there is insufficient potassium available, there will be a recommendation of the amount of muriate of potash ($\text{KCl}:\text{NaCl} = 95:5$ or higher) also known as 0-0-60 to add to the soil. This is the most common source of agricultural potassium. Potassium is very stable in most soils with the exception of very sandy soil and will remain in the root zone for a duration of a growing season. Therefore, the entire recommended amount of muriate of potash can be added all at once at the beginning of the growing season.

The nitrogen recommendation is for the amount of nitrogen your crop will need for optimal performance for that growing season. Due to soil nitrogen instability, the recommended amount of nitrogen SHOULD NOT all be added to the soil at one time. The recommended amount should be divided up

based on soil texture and plant growth stage into two or more applications spread throughout the season. You should check the specific recommendations for the crop you are growing to see when these applications should be made.

Another difference with the nitrogen recommendation is that the recommendation says, “Nitrogen source (Choose One)”. The recommendation gives you three options as a source for nitrogen: ammonium sulfate ((NH₄)₂SO₄), urea (CO(NH₂)₂), or ammonium nitrate (NH₄NO₃). You choose which you want to use as your nitrogen source usually based on availability and cost. Do NOT add recommended amounts of all three. Finally, soil fertilization cannot be approached selectively, and equal attention must be paid to all recommended nutrients as improved plant performance due to increasing availability of one nutrient may increase the demand for other nutrient(s).

Additional Soil Tests

In addition to the Routine Soil test, additional soil tests can be performed for additional fees. The following are some of the additional tests that can be requested.

Soil Organic Matter (SOM)

Soil organic matter is composed of materials containing organic form of carbon. These materials include plant and animal remains (including bacteria and fungi) in various stages of decomposition, root and microbial exudates and humus. Increasing levels of SOM improve the physical, chemical, and biological functions of the soil (see GNO Gardening, “Organic Matters”, October 2018).

Most garden and landscape plants perform best when the SOM level is at least 2% (the goal for vegetable and flower beds should be 5%-7%). Soils in Louisiana have an average SOM of 1.4%. See GNO Gardening, October 2018 for ways to increase SOM.

Aluminum

Aluminum is the third most abundant element (after oxygen and silicon) in the earth’s crust, representing approximately 8.1% of its content by weight. Plants and soil organisms are not usually exposed to

problematic concentrations of aluminum in the soil as it is mainly found in the form of a mineral (aluminosilicates and aluminum oxides).

Concentrations of soluble aluminum increase in acid soils and this soluble aluminum is toxic for plant growth with the main effect of aluminum toxicity being inhibition of root growth.

High levels of aluminum are toxic to some plants and are associated with acidic soil. Plants will become stunted if they absorb too much aluminum. They may also show symptoms of phosphorus deficiency, calcium deficiency, magnesium deficiency or sulfur deficiency. If the pH of soil is greater than 5.5 aluminum is not as available to plants so is less likely to cause toxicity.

Boron

Boron is an essential plant micronutrient. It is used by plants during cell division and is required for development of tissue near the tips of shoots and roots. It is also required for the growth of the pollen tube during flower pollination and thus fruit and seed production. Boron is thought to increase nectar production by flowers, so it is important for attracting pollinating insects. It is also required for good cell structure and as a result, the tissue of boron deficient plants often breaks down prematurely resulting in brown flecks, necrotic spots, cracking and corky areas in fruit and tubers. Excess boron inhibits seed germination. Boron deficiency is seldom a problem in our soils.

Soluble Salts

Water soluble salts are a natural component in soils. At the STPAL, the content of water-soluble salts is estimated by measuring Electric Conductivity (EC) of the 1:2 suspension of soil in deionized water. The content is then reported as the amount of Total Dissolved Salts (TDS). The most common soluble salts in soils are composed of the cations, calcium (Ca²⁺), magnesium (Mg²⁺), and sodium (Na⁺), and the anions chloride (Cl⁻), sulfate (SO₄²⁻), and bicarbonate (HCO₃⁻). Smaller quantities of potassium (K⁺), ammonium (NH₄⁺), nitrate (NO₃⁻), and carbonate (CO₃²⁻) are also found in most soils.

Many of these ions are plant nutrients and at optimum levels do not harm plants. However, excess soluble salts can damage roots and lead to problems with water uptake. High soluble salt content in irrigation water can also lead to leaf burn. Wilting, yellowing, and marginal and tip burn of leaves, (scorching), are all symptoms of excess soluble salts. Plant species vary markedly in their tolerance to soluble salts. Therefore, the values must be interpreted in relation to a specific plant species.

Manganese, Iron, Copper, Zinc

Manganese is a plant micronutrient. It fulfills a number of roles and is important in photosynthesis, synthesis of chlorophyll and nitrogen absorption as well as the synthesis of riboflavin, ascorbic acid and carotene. Manganese deficiency is most common on alkaline and poorly drained soils as well as those high in available iron. Manganese toxicity is more common on very acidic soil. It can be toxic in its own right, but excess manganese can also cause iron deficiency.

Iron is the fourth most abundant element found in soil where it is largely present in solid form with extremely low solubility in water, which limits its availability to plants. Iron, in small amounts, is essential for healthy plant growth and is classed as a micronutrient. It is important for the development and function of chlorophyll and a range of enzymes and proteins. It also plays a role in respiration, nitrogen fixation, energy transfer and metabolism. Iron deficiency is most likely to occur in plants when the soil is alkaline or when the level of phosphorus, zinc, manganese or molybdenum in the soil is high. Heavy metal contamination can also lead to iron deficiency.

Total Nitrogen

Total nitrogen analysis measures nitrogen in all organic and inorganic forms. Total nitrogen does not indicate plant-available nitrogen; hence, it is not included in routine soil testing. Total nitrogen analysis, while not recommended as part of a standard soil testing program, may be better than organic matter analysis for estimating soil nitrogen supplying capability.

Total Carbon

Total carbon in soils is the sum of both organic and inorganic carbon. Organic carbon is present in the soil organic matter fraction, whereas inorganic carbon is largely found in carbonate minerals.

Soil carbon can provide some plant nutrients through mineralization. However, its main functions are to aggregate soil particles (structure) to provide resilience to physical degradation and improve water infiltration and percolation, increases microbial activity, and protects soil from erosion.

Flood Test

Flood test provides results in the form of water-soluble major ions such as calcium, magnesium, sodium, chloride and sulfate, Electric Conductivity (EC), and Sodium Adsorption Ratio (SAR).

The SAR is the ratio of sodium (Na) to calcium (Ca) plus magnesium (Mg) in the soil solution. A high SAR can cause the deterioration of soil aggregates and often results in surface crusting and poor water infiltration, poor plant emergence and growth. Soils with a SAR greater than 10 to 15 and EC lower than 4 dS/m are classified as sodic and will likely require the addition of gypsum (hydrated form of calcium sulfate) or other amendments (such as elemental sulfur and/or organic matter) to aid in the displacement of sodium, reformation and stabilization of soil aggregates, and improvement of infiltration.

Chlorine is classed as a plant micronutrient meaning that it is essential for the proper growth of plants.

Chlorine is important for plant photosynthesis as it is involved in the opening and closing of stomata.

Chlorine toxicity can occur naturally when plants are grown in coastal soils and near chlorinated pools (though much of the damage associated with chlorinated pools is due to the vapors coming into contact with leaves rather than because the plant has too much chlorine uptake).

Summary

Though soil test results may sometimes seem like a lot of data with little meaning to the average gardener, the results can be very informative once

you know why the tests were performed. A soil test, whether a routine analysis or a combination of multiple tests, provide a lot of information about the soil you are growing your valuable plants in. It lets you know what nutrients are in the soil, whether they are available for your plants to use, whether any common nutrients are present at toxic levels, and

what you need to add or do to your soil to make it the most hospitable environment for your plants.

Hopefully, this article makes reading your soil test results more of a journey of enlightenment rather than an unintelligible maze of information.

~Dr. Joe W. Willis, Dr. Brenda Tubana,
Dr. Franta Majas

The periodic table of chemical elements, often called the periodic table, organizes all discovered chemical elements in rows (called periods) and columns (called groups) according to increasing atomic number.

Selected References

- Bojórquez-Quintal, E. et. al. 2017. Aluminum, a Friend or Foe of Higher Plants in Acid Soils. <https://www.frontiersin.org/articles/10.3389/fpls.2017.01767/full>
- Brackenrich, J. & R. Milliron. 2022. Interpreting Your Soil Test Reports. Penn State University. <https://extension.psu.edu/interpreting-your-soil-test-reports>
- Cardon, G.E., J. Kotuby-Amacher, P. Hole, & R. Koenig. 2008. Understanding Your Soil Test Report. Utah State University. https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1825&context=extension_curall
- Leikem, D.F., R. E. Lamond, & D.B. Mengel. 2003. Soil Test Interpretations and Fertilizer Recommendations. Kansas State University. <https://bookstore.ksre.ksu.edu/pubs/mf2586.pdf>
- Marx, E.S., J. Hart, & R.G. Stevens. 1999. Soil Test Interpretation Guide. <https://ir.library.oregonstate.edu/downloads/w9505065q>
- Nutrient Imbalances. 2019. <https://plantprobs.net/>
- Saha, U.K., D.E. Kissel, & L. S. Sonon. 2022. Soil Salinity Testing, Data Interpretation and Recommendations. University of Georgia. <https://extension.uga.edu/publications/detail.html?number=C1019>
- Self, J.R. 2010. Soil Test Explanation. <https://extension.colostate.edu/topic-areas/agriculture/soil-test-explanation-0-502/>
- Trujillo, W. 2022. Interpreting a Soil Test Report. Colorado State University. <https://agsci.colostate.edu/soiltestinglab/wp-content/uploads/sites/98/2022/01/Soil-Test-Interpretation.pdf>

Home for the “Holly-days”

With the short days and long nights of December, a splash of color in the landscape is always welcome. Few plants symbolize the season quite like the fruit and foliage of Hollies. The berries, ranging from a soft yuletide yellow to a Rudolph’s nose red, and the spiny,

evergreen foliage provide a classic look to the landscape. Whether decked in halls as a series of boughs, outside your window, or in front of your house, hollies can provide year-round interest in the landscape. Hollies are tree and shrub species which belong to the genus *Ilex*. Species and cultivars within the *Ilex* genus vary in terms of plant size/form, leaf shape, and fruit color, offering a wide palate to paint the landscape with. In general, hollies have a smooth, silver bark, spiny evergreen leaves, and clusters of berries; however,

the morphology can vary dramatically. While hollies are certainly renowned for these features, you will not find them on a list of plants with showy flowers.

While the inconspicuous flowers are an afterthought when planting hollies, the fruit they bear are typically the main attraction, and for that reason planning around holly flowers is crucial. In order to produce fruit, the female part of a flower needs to be fertilized by the male part of the flower. Many ornamental plants have both the male and female flower parts on the same plant, allowing fruit set to be borne from self-fertilization. These plants are known as *monoecious* plants. Hollies, on the other hand, are *dioecious*. This means that male and female flowers are on separate plants, thus necessitating both being

present for flowers to form. This is important as only the female plants will produce berries. The ratio of male to female hollies needed for showy fruit set varies between species and cultivars, with recommendations for the quintessential Christmas holly, the evergreen American holly (*Ilex opaca*),



American Holly with berries.

being approximately one male per three female plants, and the less common (but still present in Louisiana) deciduous winterberry holly (*Ilex verticillata*) being approximately one male per 5-10 female plants. Consider the placement of the male and female plants in the landscape. “Hiding” the male plants behind the showy, prominent female plants keeps them out of sight while still capable of pollinating the fruit bearing female plants. While balancing the ratio of male and female hollies in the landscape is critical to fruit set for many species within the *Ilex* genus, the Burford Holly (*Ilex cornuta* ‘Burfordii’) is exempt from this consideration as the individual plant is able to produce fruit without a pollinator, a phenomena known as parthenocarpy.

Looking for a classic, red berried holly for the season? Try American holly (*Ilex opaca*). Looking to brighten up the landscape with some yellow berries? Consider using Anna's choice Yaupon Holly (*Ilex vomitoria* 'Anna's Choice'). Perhaps unique foliage is what you seek in a holly. In that case, a Golden Oakland Holly (*Ilex hybrid* 'Magden') can be used to excite the landscape with the golden variegated leaves. Dahoon holly (*Ilex cassine*) is another favorite, with its prolific fruit set garnering attention. If the architecture/form of the plant is the desired trait then *Ilex vomitoria* 'Kathy Ann' stands out. Some of the most common tree-form Hollies in Louisiana are the Savannah (*Ilex x* 'Savannah') and Eagleston (*Ilex x attenuata* 'Eagleston') a natural hybrid of Doohan and American Holly). These cultivars are females, so they will always produce the desirable red berries, as long as there are male hollies nearby. These are just a few of the many hollies available, with numerous cultivars with different fruit, foliage, form, and flower characteristics often found within each species. With all the options for hollies at your disposal, designing a unique landscape using a variety of species within this genus can be achieved.

From everyone at the Hammond Research Station, we wish you a happy "Holly-days".

~Dr. Damon Abdi, Jason Stagg, Dr. Jeb Fields – LSU AgCenter Hammond Research Station

Selected references:

<https://plants.ces.ncsu.edu/plants/ilex-cornuta-burfordii/>

https://hort.ifas.ufl.edu/treesandpowerlines/ilex_cornuta_burfordii.shtml

<https://extension.psu.edu/why-doesnt-my-holly-have-berries>

<https://www.arborday.org/trees/treeguide/treedetail.cfm?itemID=1071>



Golden Oakland Holly



Yaupon Holly Anna's Choice



Dahoon Holly

Coccinellidae: The Lady Beetles

Ladybugs are some of the most recognizable insects in the world. Well, maybe second to the monarch butterfly. They are in fact one of the most popular “beneficial insects” used by home gardeners to fight common insect pests in the home landscape.

Whether you call them ladybugs or lady beetles, these insects can be very useful and pesky all at the same time.

In the United States these insects are typically referred to as ladybugs whereas in the United Kingdom folks call them ladybirds.

Experts like to call them ladybird beetles or lady beetles since they are not true bugs,

but rather beetles. No matter what common name is used they all belong to the order Coleoptera (beetles) and more specifically Coccinellidae, a family of small-sized beetle insects. Out of more than 6,000 species within Coccinellidae, the majority feed on herbivorous insects like aphids and scales. However, the Mexican bean beetle (*Epilachna varivestis*) and squash lady beetle (*E. borealis*) are two serious plant pests placed in the same family. Common features of Coccinellids include round to elliptical-shaped bodies, concealed heads when viewed from above, and brightly colored appearances.

These beetles display a complete metamorphosis life cycle meaning they go through four distinct stages: egg, larva, pupa, and adult. This is the same type of metamorphosis that butterflies and moths go through. Just like butterflies and moths, the larval

stage looks nothing like the adult. In lady beetles the larval stage is sometimes referred to as a crawler. It is this stage that does most of the feeding. When using lady beetles as a biological control step, the user wants lady beetles to lay eggs thorough the infestation. Therefore, when the eggs hatch the larva will consume and



Photo by Chris Dunaway

A ten spotted ladybird beetle feeding on oleander aphids found in a garden in New Orleans.

feed on the pests. If a colony of aphids would be left to fester on a crapemyrtle tree, lady beetles would eventually find the location and lay eggs. As those eggs hatch the larvae would feed within the population until the food source is depleted.

Some of the common lady beetle species that we typically encounter in Southeast Louisiana include the convergent lady beetle (*Hippodamia convergens*), two-spotted lady beetle (*Adalia bipunctata*), ten-spotted lady beetle (*Coccinella decempunctata*), and the Asian lady beetle (*Harmonia axyridis*). All species listed are considered good bugs that feed on plant

pests. The convergent lady beetle is the common species raised and sold to home gardeners as biological pest control agents.

To effectively use store bought lady beetles as a control agent in the home garden aim to mimic behaviors seen in nature. A soft bodied insect infestation like an aphid outbreak or an explosion of scale insects needs to occur at some time during the warm season. Remember that this is what immature lady beetles will feed on for energy source. Once a food source has been identified, I find it advantageous to thoroughly irrigate the garden bed where the infested plant is growing. Keep the store-bought lady beetles refrigerated until evening hours. Open the package halfway and place the half open container at the base of the infested plant. This will allow the lady beetles to slowly awake from induced dormancy where they hopefully notice the food source and start laying eggs.

Although, there are many good things about most of the lady beetles we encounter in the home garden there is one complaint, overwintering adults. Insects survive winter in several different ways. Lady beetles start leaving feeding sites in late fall and early winter as the weather cools down. They search for cracks, crevices, nooks, and crannies to hunker down and wait out cold weather. Kind of like how bears hibernate during the winter months, lady beetles go through a period of diapause.

Photo by Chris Dunaway



This alligator looking creature is actually the immature stage of a ladybird beetle life cycle.

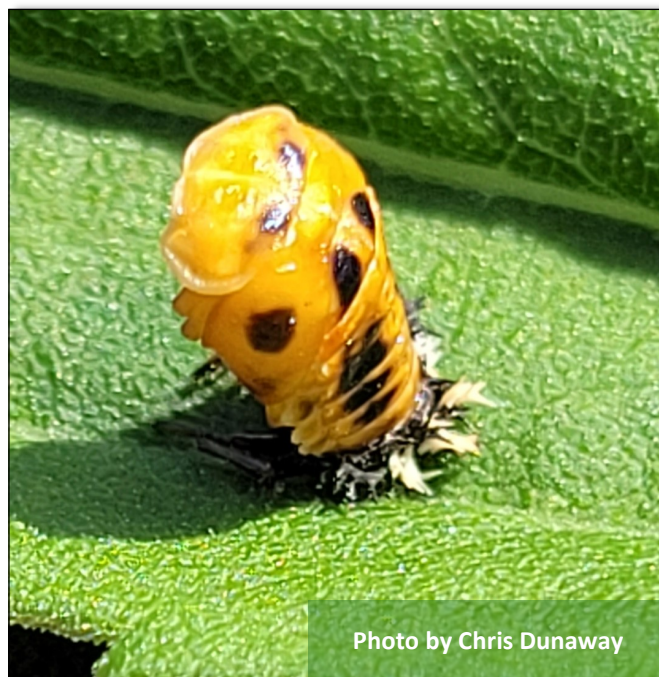


Photo by Chris Dunaway

This looks like a cross between a shrimp and a crab but is actually the pupal stage of a ladybird beetle life cycle.

Once they awaken in spring its right back to finding a food source. This is beautiful when it occurs in trees and other natural vegetation, but when they start to gather and look for ways inside of structures like homes and businesses then it becomes a pest issue. No need to get the insecticides out. A shop vac does a pretty good at collecting them in just a few swoops.

From lady bugs to lady bird beetles there's always something to learn in the garden. Who would have thought that a pretty lady beetle could be used like hired mercenaries in your home landscape? Only mother nature can show you beauty and violence all in one story. Start

pointing out lady beetles to others while walking through a garden. Inspect pest infestations for adult lady beetles. Try store-bought lady beetles as a pest control method next year. Sometimes its just easier to recreate some of the natural cycles seen in nature. Good luck!

~Will Afton

References:

Cranshaw, W. and D. Shetlar. 2018. Garden Insects of North America. 2nd ed. Princeton

University Press, New Jersey.

Mizell III, R.F. and F.J. Howard. 2021. Ladybirds, ladybird beetles, lady beetles, ladybugs of florida, coleoptera: coccinellidae. University of Florida. Pub #EENY170.

Cold Weather Invaders

During the fall and winter months, when temperatures begin to drop, insects begin to seek shelter from cold temperatures. A variety of insects will enter the indoor environment so that they can overwinter and be protected from cold weather. These insects are called “occasional invaders” because they enter structures for some time, but do not complete their life cycle indoors. Although occasional invaders enter homes or buildings at any time of the year, a greater number of insects may enter people’s homes during cold weather months. Due to the infrequency of the insects entering the home, the management of occasional invaders does not always rely upon the use of insecticides.

Throughout the year, many occasional invaders are common around the home, in the garden, or lawn. Therefore, the most effective way to manage occasional invaders is through eliminating conditions that bring insects close to the structure and allow them to build up to great numbers. The best way to reduce conditions that favor pests is by landscape and lawn management. Strategies for sanitation around the home such as securing trash can lids should be used. Removing or trimming plants, shrubs, or tree branches that contact the house is important for preventing easy access to the structure. Reducing mulch thickness to 2 – 3 inches in depth, and keeping wood piles away from the structure will also reduce nearby insect habitats. If excess water is building up around the home, drainage should be improved. Outdoor lights should be moved away from entryways and yellow light bulbs should be used, which are less attractive to insects.

In addition to changing the environment around the home, exclusion techniques around the home should be used to prevent pest entry. Sealing cracks and crevices with an appropriate caulk or sealant, and using screens on wall vents or soffits are important first steps. Larger gaps and cracks can be filled with rodent proof fabric prior to caulk application. Window screens should fit tightly in the frame and tears in the screen should be repaired with screen tape. Gaps in windows and doors should be properly weather stripped to prevent crawling insects from entering.

Some insects that commonly overwinter indoors in high numbers are boxelder bugs (*Leptocoris trivittatus*), multicolored lady beetles (*Harmonia axyridis*), cluster flies (*Pollenia rudis*), and several different ant species. In addition to the above-mentioned methods for prevention, specific control measures for each insect can be done. Box elder bugs can be controlled during the spring and summer using insecticides or boxwood plants can be replaced with several other shrubs. Vacuuming is an effective method for multicolored lady beetles as they can discharge a foul odor and their cadavers can contribute to indoor dust. Cluster flies can be controlled with a well-timed application of a pyrethroid insecticide to the perimeter of the home, prior to the onset of colder temperatures. Ant control strategies vary based on the species in question. Contact your LSU AgCenter parish office, the LSU Department of Entomology, or local pest control company for assistance with ant identification and control.

~Dr. Aaron Ashbrook



A) Boxelder adults are orange and black in color while immature nymphs are predominantly red. B) Multicolored lady bugs vary in form with different numbers of spots and variable hues of orange. C) Little black ants enter the home in search of water or food and require specific control strategies (Photo credit: Michael Seymour).

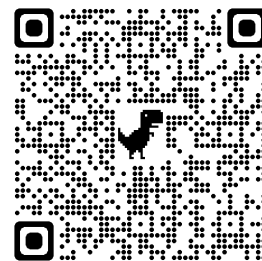
Help Support Horticulture programs in the Greater New Orleans Area

Funding helps the LSU AgCenter agents provide help for:

- School and Community Gardens
- Educational Training Events
- Seed Libraries
- Demonstration Gardens
- Educational Scholarships
- Local Research
- and Much More



Anna Timmerman gives a tour of the greenhouse to a group of local students.



Scan the QR code above to go to the LSU Foundation donation webpage.

Or Click here: <https://securelb.imodules.com/s/1585/17/interior.aspx?sid=1585&gid=1&pgid=666&cid=1464&bledit=1&dids=5517>

Local Independent Garden Centers

Jefferson

Perino's Garden Center	3100 Veterans Memorial Blvd., Metairie, LA 70002	(504) 834-7888
Rose Garden Center	4005 Westbank Expressway, Marrero, LA 70072	(504) 341-5664
Rose Garden Center	5420 Lapalco Blvd., Marrero, LA 70072	(504) 347-8777
Banting's Nursery	3425 River Rd., Bridge City, LA 70094	(504) 436-4343
Jefferson Feed	4421 Jefferson Hwy., Jefferson, LA 70121	(504) 733-8572
Nine Mile Point Plant Nursery	2141 River Rd., Westwego, LA 70094	(504) 436-4915
Palm Garden Depot	351 Hickory Ave., Harahan, LA 70123	(504) 305-6170
Double M Feed Harahan	8400 Jefferson Hwy., Harahan, LA 70123	(504) 738-5007
Double M Feed Metairie	3212 W. Esplanade Ave., Metairie, LA 70002	(504) 835-9800
Double M Feed Terrytown	543 Holmes Blvd., Terrytown, LA 70056	(504) 361-4405
Sunrise Trading Co. Inc.	42 3 rd St., Kenner, LA 70062	(504) 469-0077
Laughing Buddha Garden Center	4516 Clearview Pkwy., Metairie, LA 70006	(504) 887-4336
Creative Gardens & Landscape	2309 Manhattan Blvd., Harvey, LA 70058	(504) 367-9099
Charvet's Garden Center	4511 Clearview Parkway, Metairie, LA 70006	(504) 888-7700
Plumeria Insanity Nursery	https://www.facebook.com/Plumeria-Insanity-Nursery-102123651930419	

Soil Vendors

Schmelly's Dirt Farm	8301 Olive St., New Orleans, LA 70118	(504) 535-GROW
Laughing Buddha Garden Center	4516 Clearview Pkwy., Metairie, LA 70006	(504) 887-433
Reliable Soil	725 Reverand Richard Wilson Dr., Kenner, LA 70062	(504) 467-1078
Renaissance Gardens	9123 W. Judge Perez Dr., Chalmette, LA 70043	(504) 682-9911
Rock n' Soil NOLA	9119 Airline Hwy., New Orleans, LA 70118	(504) 488-0908
Grow Wiser Garden Supply	2109 Decatur St., New Orleans, LA 70116	(504) 644-4713

If you would like your licensed retail nursery listed, please email gnogardening@agcenter.lsu.edu

Local Independent Garden Centers

Orleans		
Urban Roots	2375 Tchoupitoulas St., New Orleans, LA 70130	(504) 522-4949
The Plant Gallery	9401 Airline Hwy., New Orleans, LA 70118	(504) 488-8887
Harold's Plants	1135 Press St., New Orleans, LA 70117	(504) 947-7554
We Bite Rare and Unusual Plants	1225 Mandeville St., New Orleans, LA 70117	(504) 380-4628
Hot Plants	1715 Feliciana St., New Orleans, LA 70117	www.hotplantsnursery.com
Pelican Greenhouse Sales	2 Celebration Dr., New Orleans, LA 70124	(504) 483-9437
Grow Wiser Garden Supply	2109 Decatur St., New Orleans, LA 70116	(504) 644-4713
Jefferson Feed Mid-City	309 N. Carrollton Ave., New Orleans, LA 70119	(504) 488-8118
Jefferson Feed Uptown	6047 Magazine St., New Orleans, LA 70118	(504) 218-4220
Ninth Ward Nursery	2641 Deslonde St., New Orleans, LA 70117	(504) 296-8398
Crazy Plant Bae	800 N. Claiborne Ave., New Orleans LA 70119	(504) 327-7008
Canopy Plant Company	6030 St. Claude, New Orleans, LA 70117	(504) 381-4033
Too Tall Nursery	2817 N. Roman, New Orleans, LA 70117	tootallfarm@gmail.com
Nice Plants Good Pots	Pop Up and Online Sales	Etsy.com/shop/NicePlantsGoodPots
Plantery NOLA	Pop Up Locations	www.planterynola.com
Canopy Plant Co.	Pop Up and Online Sales	www.canopyplantco.com
New Orleans Succulent Boutique	Online Sales	https://sites.google.com/view/nolasucculentshop/home
Root Life Mobile Plant Nursery	Pop Up Locations	https://rootlifeplantnursery.com/
New Orleans Green LLC	Online Sales	www.neworleans-green.com
Plaquemines		
Southern Gateway Garden Center	107 Timber Ridge St., Belle Chasse, LA 70037	(504) 393-9300
Belle Danse Orchids	14079 Belle Chasse Hwy., Belle Chasse, LA 70037	(504) 419-5416
St. Charles		
Plant & Palm Tropical Outlet	10018 River Rd., St. Rose, LA 70087	(504) 468-7256
Martin's Nursery & Landscape	320 3 rd St., Luling, LA 70070	(985) 785-6165
St. Bernard		
Plant Pricks	Pop Up Locations	https://plantpricks.com/
St. Tammany		
The Boho Being	1184 Front St., Slidell, LA 70458	(985)707-1623



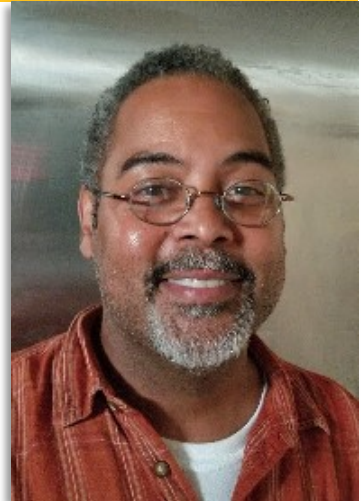
In the Kitchen with Austin

Potato Leek Soup

There is nothing more satisfying on a cold day than a hot bowl of soup. This recipe is quick and easy with loads of flavor.

Ingredients:

2 Tbs olive oil	3 cups veg. stock
2 leeks, cleaned & sliced	1 cup water
1 ½ lbs. russet potatoes, peeled & cubed	salt & pepper, to taste.



A bowl of potato leek soup.

Directions:

Remove root end and tough dark green tops of leeks. Cut stalks down the middle and slice into 1 inch sections. Wash thoroughly in a large bowl or under running water. Heat olive oil in soup pot over medium heat. Add drained leeks and cook for 10 minutes, stirring often. They should soften without browning. Stir in the remaining ingredients. Bring to a boil then lower heat and simmer for 20 minutes, until potatoes are tender. Carefully transfer to a blender and whiz until smooth.

Bon Manger!

Farmers Markets in the GNO Area

Jefferson Parish

Gretna Farmer's Market

739 Third Street, Gretna
Every Saturday, except the Saturday of
Gretna Fest, 8:30AM-12:30PM

Nawlins Outdoor Market

1048 Scotsdale Dr., Harvey
Every Saturday & Sunday, 9AM-5PM

Old Metairie Farmer's Market

Bayou Metairie Park,
Between Metairie Lawn Dr. and Labarre
See calendar on their website for dates and
times: [https://
www.oldmetairiegardenclub.com/](https://www.oldmetairiegardenclub.com/)

Westwego Shrimp Lot

100 Westbank Expressway at Louisiana St.,
Westwego
Daily Mon-Thurs 8AM-6PM, Fri 8AM-7PM,
Sat 7AM-7PM, and Sun 7AM-6PM

Lafreniere Park Market-Metairie

3000 Downs Blvd.
Wednesdays, from 2-7PM

Laughing Buddha Farm Hub-Clearview

4516 Clearview
Store Pickups, preorder online at [https://
www.laughingbuddhanursery.com/buy-
groceries-1](https://www.laughingbuddhanursery.com/buy-groceries-1)

Jean Lafitte Town Market-Lafitte

920 Jean Lafitte Blvd.
Last Saturday of the month, 9AM-1PM

Harahan Farmer's Market

6437 Jefferson Hwy., Harahan, LA
Sundays, 10 Am—2PM

Good Time Guild Farmer's Market at St. Martin's Episcopal Church- Metairie

Metairie Rd.
1st Thursdays monthly, 2PM-7PM
3rd Saturday monthly, 10AM-3PM

St. Charles Parish

German Coast Farmer's Market at Westbank Bridge Park

13825 River Road, Luling, LA
Wednesdays, from 1-5PM

German Coast Farmer's Market

13786 River Rd., Destrehan, LA
Saturdays, from 8AM-Noon

Farmers Markets in the GNO Area

Orleans Parish

Crescent City Farmer's Market- Mid-City

500 N. Norman C. Francis
Thursdays from 3-7PM
Walk-up and curbside pre-orders at
www.crescentcityfarmersmarket.org

Crescent City Farmer's Market- City Park

Tad Gormley Stadium parking lot at
Marconi and Navarre
Sundays from 8AM-Noon
Preorder contact-free drive through only,
info at www.crescentcityfarmersmarket.org

Crescent City Farmer's Market- Uptown

200 Broadway
Tuesdays from 8AM-Noon
Walk-up and curbside pre-orders, info at
www.crescentcityfarmersmarket.org

SPROUT NOLA ReFresh Market-Truck Farm Table

200 N. Broad (In Whole Foods lobby or in
parking lot, weather permitting)
Walk up

SPROUT NOLA ReFresh Market-Lafitte Greenway

2606 St. Louis
Mondays from 3-6PM
Walk up and pre-orders at [https://
app.sourcewhatsgood.com/markets/refresh-
farmers-market/products](https://app.sourcewhatsgood.com/markets/refresh-farmers-market/products)

Vietnamese Farmer's Market

14401 Alcee Fortier Blvd., New Orleans East
Saturdays, 5:30AM-8:30AM

Marketplace at Armstrong Park

901 N. Rampart
Thursdays from 3-7PM

New Orleans French Market

Lower Decatur Street
Daily, 9AM-6PM

Know Dat Grow Dat Microgreens & Produce

Online Sales
<https://www.knowdatgrowdat.com/shop>

Mid-City Arts and Farmer's Market

Comiskey Park, New Orleans
Market dates vary and are on hold due to
Covid-19, check <http://midcityaf.org>

Laughing Buddha Farm Hubs

Pick up points vary, pre-orders available
Bywater, Broadmoor, Lakeview, Irish
Channel, Mid-City, Algiers Point, Uptown
Locations
[https://www.laughingbuddhanursery.com/
events](https://www.laughingbuddhanursery.com/events)

Barcelo Gardens Farmer's Market- Upper 9th Ward

2301 Gallier Street
Saturdays from 10AM-1PM

Bywater Market at Trap Kitchen-Bywater

1043 Poland Ave
Sundays from 10AM-3PM

Paradigm Farmer's Market-Central City

1131 S. Rampart
Sundays 9AM-Noon

Lot 1701 Small Business and Farmer's Market-Central City

1701 Oretha Castle Haley Blvd.
Every 1st and 3rd Saturday from 11AM to 3PM

BOUNYFUL Farmer's Market-Algiers Point

149 Delaronde St.
First and Third Sundays of the month, from
11AM-3PM

Edgewood Park Market-Edgewood

3317 Franklin Ave.
First market Sunday, May 2nd from 11AM-
3PM

New Orleans East Hospital Farmer's Market- New Orleans East

5620 Read Blvd.
First Tuesday of the Month- 3PM-Dusk
Third Thursday of the Month- Noon-3PM

Sheaux Fresh Sustainable Foods- Tremé-Lafitte

585 N. Claiborne at Lafitte Greenway
(under overpass)
Wednesdays from 2-5PM
Saturdays from 10AM-2PM
Check for current dates/times at
www.sheauxfresh.org

Holy Cross Farmer's Market- Holy Cross/ Lower 9th Ward

533 St. Maurice
First & Third Saturday of the month,
10:00AM-2PM

St. Tammany Parish

Covington Farmers' Market

Covington Police Department
609 North Columbia St., Covington, LA 70433
Saturday: 8:00 AM – 12:00 PM (rain or shine)
Covington Trailhead
419 N. New Hampshire
Wednesday: 10:00 AM – 2:00 PM (rain or
shine)www.covingtonfarmersmarket.org
General information: 985.966.1786

Mandeville Trailhead Community Market

Mandeville Trailhead
675 Lafitte St, Mandeville, LA 70448
Saturday: 9:00 AM – 1:00 PM (rain or shine)
[https://www.facebook.com/
TheMandevilleTrailhead](https://www.facebook.com/TheMandevilleTrailhead)
985.624.3147

Madisonville Market

Riverside Park South
Water St., Madisonville, LA 70447
Sunday: 10:00 AM – 2:00 PM
www.madisonvillemarket.org

Folsom Village Market

Hwy 40, one block east of Hwy 25
Saturday: 9:00 AM – 1:00 PM (weather per-
mitting)
Every 2nd and 4th Saturday
985.507.6496 (daytime only)

Abita Springs Art and Farmers' Market

22049 Main St., Abita Springs, LA 70420
Sunday: 12:00 PM – 4:00 PM (rain or shine)
[https://www.townofabitasprings.com/
farmers-market](https://www.townofabitasprings.com/farmers-market)
985.892.0711

Camellia City Farmer's Market

Old Towne Slidell
333 Erlanger St. (Corner of Third St.)
Saturday: 8:00 AM – 12:00 PM (rain or shine)
[https://www.facebook.com/
CamelliaCityMarket/](https://www.facebook.com/CamelliaCityMarket/)
985.640.7112

December Checklist/Garden Tips

Don't forget to add nature's generous bounty of leaves provided this time of year to your compost piles, or use them to mulch shrub and flower beds. You should have a 3-4 inch mulch layer over your garden soil. Mulch insulates the soil, keeps the soil moisture consistent, helps prevent plant disease and neatens everything up. Shred larger leaves with your lawn mower before adding them to the compost pile or using them as mulch. Stock pile pine straw and cypress leaves in plastic bags to use to cover low growing plants for freeze protection. Use the wand of your vacuum cleaner to remove the air from the bags to compress the material to save space. See a demonstration at the following link: <https://www.facebook.com/1030624690304124/videos/3299251646811530/>

You can also make your own home-made baler to make your own bales of pine straw and cypress leaves for future use. See my demonstration video at the following link: <https://www.youtube.com/watch?v=Fb8v9SXUAFg&t=7s>

Winterize your garden tools before you put them away. Clean and sharpen tools, apply a thin layer of protective oil to the blades, and coat wooden handles with sealer, tung oil or varnish to protect the wood and keep it in good shape. Drain the gas from lawn mowers and other gas powered equipment (see the owner's manual for recommendations).

Poinsettias are a great addition to interior holiday displays, place them near a window to give them a longer "shelf-life". Wait to water them until the soil feels dry to the touch.

If you bought tulip or hyacinth bulbs last month, plant them at the end of December. If you want to have hyacinths blooming indoors, plant them halfway into a shallow bowl with pebbles or marbles in the bottom. Add just enough water so that the bottom of the bulbs stay wet, adding water when it stops making contact. Place them someplace sunny. It takes four to six weeks for them to bloom, bringing a welcome jolt of spring into the house.

If we get a hard freeze, wait a few days to evaluate the damage. Many cole crops will bounce back, as will some landscape plants. Things usually look worse the next morning after a frost than they actually are. Waiting gives the plants a chance to recover, and you can see the extent of the true damage. Prune cannas, philodendrons, clerodendrons, and gingers back to the ground that got burned. They will be back in the spring.

Many garden chemicals are water based and can be destroyed by freezing. The loss of chemicals can be expensive and spilled chemicals can create dangerous conditions. Keep chemicals in a location that doesn't freeze, and if there are children in the house, they should be stored in a locked location.

Cut back any lingering tropical milkweed (*Asclepias curassavica*) to encourage Monarch butterflies to migrate south. Cut the plants back to the ground if possible, they will be back in the spring just in time for the return of the butterflies.

Consider creating holiday arrangements and centerpieces using plant material from your yard and gardens. Many of our most common landscape plants make excellent seasonal greenery, including magnolias, nandina, hollies, juniper, cypress, and camellias. Cut some greenery and spend some time creating arrangements for your table or mantelpiece. This can be a fun holiday activity to share with family members. The fragrance of evergreens also adds to the seasonal ambiance!

If you have any of the holiday cacti, including Thanksgiving, Christmas and Easter cacti, be sure to put it on display. Once the blooms finish, place it in a sunny window to recover and prepare for next year's flowering. Allow the soil to dry out between all waterings. Prolonged soil moisture can rot the roots. Fertilize lightly with a little water-soluble fertilizer once a month to keep it happy.

Plant cool season bedding plants now, and be sure to keep them deadheaded so that they bloom well into the spring months. Great things to plant now include snapdragons, foxgloves, dianthus, pansies, petunias, violas, columbine, delphinium, and cyclamen.

Lawn Care Do's & Don't's

Do's:

1. You may apply selective herbicides to eliminate broad leaf weeds in the lawn.
2. Cool damp weather is ideal for the appearance of Large Patch Disease in your lawn.

[Click here to find information about large patch disease from the LSU AgCenter.](#)

3. Mulch fall leaves and let them decompose in place if possible or collect them with a bagging mower and add them to your compost pile or use them as mulch in your gardens.
4. Take a soil test. Test kits are available in our offices in the Botanical Gardens, the Yenni Building, and New Orleans City Hall as well as local garden centers. Follow this link to see Dr. Joe demonstrate how to take a soil sample: <https://www.facebook.com/1030624690304124/videos/1452161988150390/>



Soil test kits can be picked up at our parish offices and at local garden centers.

Don't's

1. Do not spread fill over the lawn until it is actively growing again in the spring.
2. Do not apply fertilizer to the lawn again until April of next year.
3. Do not apply phosphorous winterizer to the lawn without taking a soil sample first. We have ample amounts of phosphorous in our soil already.
4. Do not attempt to install a new lawn until spring.
5. Do not cut more than 1/3 of the height of lawn grass at a single time.
6. Do not aerate the lawn.
7. Do not dethatch the lawn.

Your Local Extension Office is Here to Help

Contact your local extension agent for assistance.



Follow us on Facebook at GNOGardening

For more information visit LSUAgCenter.com

Dr. Joe Willis
Orleans Parish
Horticulture Agent
JWillis@agcenter.lsu.edu

Anna Timmerman
Plaquemines & St. Bernard
Parish Horticulture Agent
Timmerman@agcenter.lsu.edu

Chris Dunaway
Jefferson Parish
Horticulture Agent
CDunaway@agcenter.lsu.edu

William Afton
St. Tammany Parish
Horticulture Agent
WAfton@agcenter.lsu.edu

To subscribe to this newsletter please send a request to GNOGardening@agcenter.lsu.edu.

The LSU AgCenter is a statewide campus of the LSU System and provides equal opportunities in programs and employment.