Horticulture Hints

Fall 2014

Landscape Gardening and Ornamentals

Louisiana Super Plants Are Tough, Beautiful

The Louisiana Super Plants program is an LSU AgCenter educational and marketing campaign that highlights tough and beautiful plants that perform well in Louisiana landscapes.

Louisiana Super Plants selections have a history of outstanding performance in Louisiana or have gone through several years of university evaluations and observations. Louisiana Super Plants are "university tested and industry approved."

There are three parts to the Louisiana Super Plants program. The first is identifying outstanding plants. The second is getting the word out to Louisiana gardeners. Finally, the Louisiana Super Plants program works closely with wholesale growers in Louisiana to ensure they produce plenty of the selected plants, and retail plant sellers are kept informed of the selections and are encouraged to carry them.

Go to www.lsuagcenter.com/superplants for more information. Click on "Where to Find Super Plants" to find participating retail nurseries near you.

Louisiana Super Plants for Fall 2014

Gaillardia Mesa Series

- Short-lived herbaceous perennial
- Full to part sun
- Grows 14-16 inches tall, 16-18 inches wide
- Space 15-18 inches apart in well-drained beds
- Plant in early fall for fall bloom and spring/early summer bloom
- Plant in spring for bloom through late summer
- F1 hybrid with improved durability in the landscape, longer bloom period
- Bicolor (yellow and red), yellow and peach flower colors
- Attracts butterflies

Rabbiteye Blueberry

- Semi-evergreen shrub
- All rabbiteye blueberry varieties are included
- Full sun
- Grows 8 feet tall by 6 feet wide
- Space 4 to 6 feet apart, depending on use
- Bell-shaped white flowers appear in early spring
- Bluish-green lustrous leaves turn to an attractive red in fall
- Harvest dark blue fruit in May and June
- Demands an acidic soil with pH of 4.5-5.5 and good drainage
- Low maintenance fruiting plant that is great for edible landscaping
- Plant multiple varieties for best fruit production

Cool-season Flowers

Cool-season bedding plants can be planted now to make your landscape an exciting and colorful place this fall, winter and especially next spring.

Careful bed preparation and thoughtful planning when selecting the plants to grow will help make sure you are pleased with the results of your efforts.

The bedding plants we plant this time of year prefer cool to mild days and chilly to cold nights. Most of these plants are hardy down to at least 20 degrees Fahrenheit, and gardeners in both south Louisiana and north Louisiana have a nice selection to choose from.

Cool-season Bedding Plants	
4 to 8 inches tall	sweet alyssum, lobelia*, pansy, Johnny-jump-up, viola, primrose*, cyclamen*, petunia*, dwarf snapdragon, ornamental kale, ornamental cabbage and annual phlox
8 to 15 inches tall	medium-sized snapdragons, dwarf toadflax*, dwarf stock, candytuft, calendula*, bluebonnet, dianthus, sweet William, dwarf nicotiana* and California poppy
taller than 15 inches	Iceland poppy, peony-flowered poppy, toadflax*, tall snapdragons, stock, statice, larkspur, delphinium, hollyhock, sweet peas (vine) and nicotiana*.
easily direct seeded	alyssum, Johnny-jump-up, bluebonnet, calendula, annual phlox, nasturtium, sweet peas*, larkspur*, poppies*.
*These plants are more reliably hardy in south Louisiana. **These plants dislike transplanting and generally are best when seeded directly where they will grow.	

Cool-season Color Schemes

When you decide it's time to pull out the warm-season bedding plants and replant your flower beds and containers, lots of wonderful cool-season bedding plants are available at area nurseries.

The role these plants play in our landscapes is to provide color. What colors to plant or how you combine those colors mostly are matters of taste. But you should at least think about your color scheme and what you are trying to accomplish with color. Here are some quick tips to get you started.

Combine cool colors together or warm colors together for reliably harmonious results. The colors within each group naturally combine well and look good together. Cool colors include reds with a blue tint, burgundy, rose, pink, magenta, purple, violet, lavender, blue, navy and any variations of those colors. Warm colors include reds with an orange tint, orange, gold, yellow, rust, peach and any variations on these colors. White combines equally well with either group, and true blue flowers also look good with just about any other color.

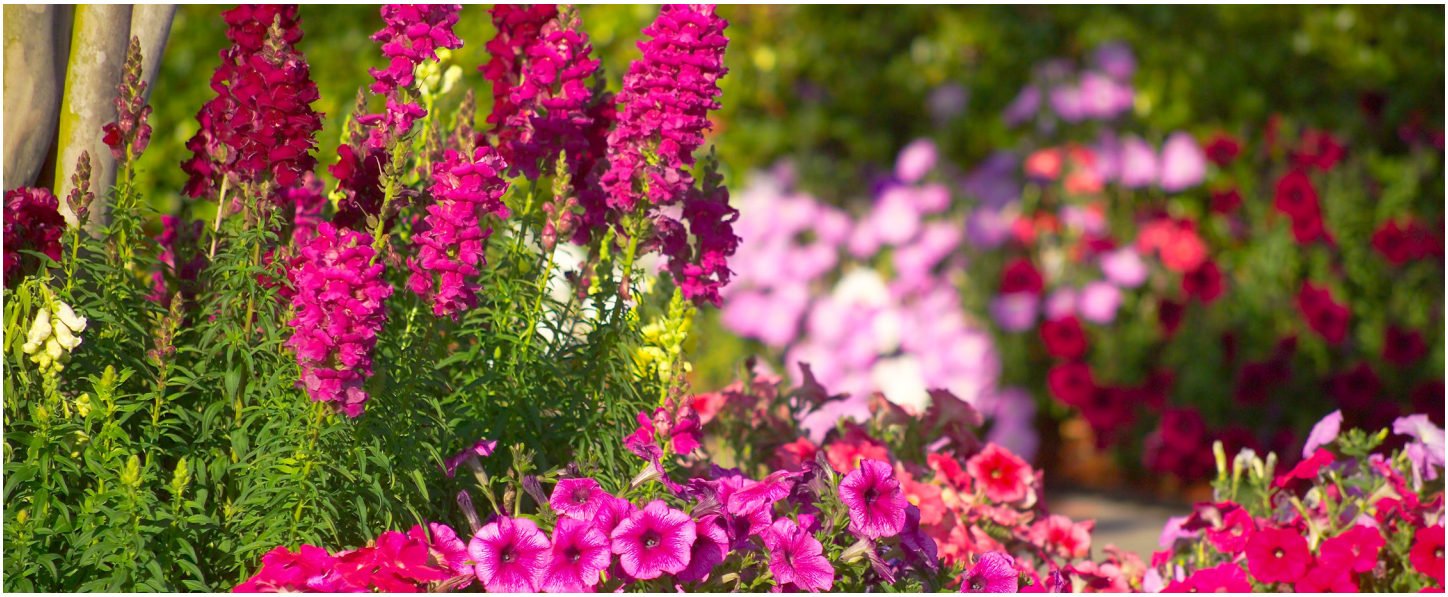
Use color where you want to focus attention. Never use color to beautify an unattractive feature in your landscape such as a fire hydrant, storage shed or trash can area. You will simply make sure everyone notices it.

Use color where you can enjoy it. Don't forget to include plantings of colorful cool-season bedding plants in beds, containers and hanging baskets around the patio and other outdoor living areas. Fragrant plants such as alyssum, stock and nicotiana are especially nice.

Generally, reduce the number of colors you use for best results. In other words, use the colors you like in combinations that you like, but don't use every color you like at the same time in the same bed.

It also is important to plant individual colors in masses or groups, especially if the bed will be viewed from a distance (as in a front bed being viewed from the street). This allows each color to be noticed.

Creating an attractive, colorful look is easier than ever. But you generally will be more pleased with the results if you do a little thinking and planning before you go to the nursery.



Selecting Trees for the Landscape

Fall is the prime time to plant hardy trees and shrubs in the landscape. As the weather cools down, think about whether you need to add trees to your landscape.

Trees are a vital part of most landscapes and can provide shade, privacy, windbreaks, fruit or nuts and flowers, and trees increase real estate value. Select and place them carefully, because trees are a part of your landscape that will be around for a long time, and mistakes are not easily corrected later on when the trees are large.

There is no one perfect tree for Louisiana. All trees have advantages and disadvantages depending on the planting location and desired characteristics. Here are some points you need to consider:

- Think about the desired mature size. Planting a tree that will grow too large for its location is one of the most common mistakes people make (along with planting too many trees). A patio might benefit from a small 15 to 25 foot tall tree planted nearby but be completely overwhelmed by a large tree. Generally, small trees are those that grow from 15 to 25 feet tall, medium sized trees grow from 30 to 55 feet tall and large trees grow 60 feet or taller. Larger trees, such as live oaks, sycamores and pecans, generally grow too large for the average urban or suburban lot.
- Think about the purpose of the tree and why it is needed. This will help you determine what characteristics the tree should have such as its shape, size and rate of growth. Ornamental features, such as flowers, attractive berries, brightly colored fall foliage or unusual bark, also should be considered.
- Decide if you want a tree that retains its foliage year-round (evergreen) or loses its leaves in the winter (deciduous). Deciduous trees are particularly useful where you want shade in the summer and sun in the winter. Small to medium size evergreen trees are useful as sound barriers or privacy screens.
- Choose trees that are well adapted to our local growing conditions. They must be able to tolerate long, hot summers and mild winters, which makes a variety of northern species you might see in catalogs unsuitable for our area. Trees that are not completely hardy are not good choices either.
- Don't forget to check the location of overhead power lines, and if you must plant under them, use small, low-growing trees. Also consider walks, drives and other paved surfaces that may be damaged by the roots of large trees. Locate large trees at least 15 feet away from paved surfaces or your house.

Digging and Storing Caladiums

Caladiums begin to look tired in late September or early October, so it's time to decide what you want to do with them. You may leave the tubers in the ground to resprout there next year, or you may want to dig them up, store the tubers and plant them again next year.

If the bed where the caladiums are planted will stay relatively undisturbed, you may simply leave the caladium tubers in the ground. But the tubers often rot in cold, wet soil over the winter and may not return. Digging and storing the tubers is the best way to ensure they survive the winter.

If you decide to dig your caladiums, do so when most of the foliage looks "tired" and begins to fall over. Do not wait for all of the foliage to disappear or you won't know where to dig. Use a shovel or a garden fork to lift the tubers, being careful not to damage them. Leave the foliage attached to the tubers, shake and brush off most of the soil and lay them out in a dry location sheltered from rain (in a garage, under a carport or in a storage room).

Allow the foliage to dry until it is tan and papery in appearance. At that time, the foliage will easily separate from the tubers, leaving a cleanly healed scar. Then the tubers are ready for storing over the winter.

Throw out any tubers that appear to be rotten or that have soft spots. Tubers you may have accidentally damaged when digging them can be saved if they have healed well and feel solid.

Gardeners sometimes have a hard time deciding which end is up when planting caladium tubers. If you like, use a felt-tipped pen to mark the top while it is easy to see where the leaves were removed, saving yourself confusion next spring.

Place the healthy tubers in an old nylon stocking, a mesh bag (such as an onion sack), a paper bag or cardboard box. The idea is that the container should be able to "breathe." Do not store the tubers in a plastic bag or airtight container because doing so may lead to rotting. Make sure you keep the tubers indoors where temperatures will stay at about 70 degrees Fahrenheit or above.

Garden Mums Are Colorful in Fall

Garden chrysanthemums are hardy, herbaceous perennials that generally bloom from October to December in Louisiana. They are short, bushy plants – about 12 to 18 inches tall – that literally cover themselves with clusters of small 1- to 1½-inch flowers in virtually every color except blue.

When purchasing garden mums, select plants with mostly closed buds and healthy foliage. Plants already in full bloom will not be attractive as long. Chrysanthemums can be quite brittle, especially the larger plants in gallon containers, so handle them carefully as you bring them home. Garden mums may be planted in containers or in beds with existing shrubs.

Depending on how far along the blooming process was when the plants were purchased and the temperatures (the flowers don't last as long when it is still hot), the flowers generally last about two to three weeks. Some gardeners use mums as temporary color in the landscape, and when the flowers fade, the plants are removed and replaced with cool-season bedding plants. Chrysanthemums will, however, bloom in the fall garden for many years.

After they finish flowering, garden mums should be cut back far enough to remove all of the faded flowers (about one-quarter their height). If the winter stays very mild, some mums will re-bloom.

Fall Is a Great Time To Plant Drift Roses

Drift roses are a great new series of low growing landscape roses that have been named Louisiana Super Plants selections. Fall is a great time to plant roses. They establish wonderfully in the cooler weather and provide outstanding color to the fall garden.

The Drift roses were bred and selected to provide all of the resilience, disease resistance and frequent flowering of larger landscape roses on much lower growing bushes. Drift roses fill a special niche in the landscape rose market. They will fit beautifully into smaller landscape spaces, provide the perfect size shrub for foundation plantings and look great in containers.

They only grow 2 to 3 feet tall, with a generous spread of 4 feet or more. The low, spreading habit, colorful flowers and long blooming season of Drift roses make them so useful in the landscape. These ground-hugging, everblooming shrubs are perfect as border or bedding plants. They make a stunning low hedge or can be used to edge a bed of taller shrubs.

The Drift rose series includes a wide variety of colors. All the colors in the Drift series of roses have been designated Louisiana Super Plant selections, including Drift Pink, Drift Coral, Drift Red, Drift Peach, Drift Apricot, Drift Sweet (pink double blooms) and the new Drift Popcorn (whitish yellow).

Some of the Drift roses produce double flowers, and some produce single flowers. All of them produce their flowers in large clusters that can virtually cover the bushes when they are in full bloom. Flower flushes occur from late spring through fall.

The cooler weather of fall makes it a joy to get out and plant roses. Be sure to plant Drift roses in a well-prepared landscape bed enriched with generous amounts of organic matter, such as compost. Good drainage produces best results, so avoid low, wet areas or plant in raised beds. Space individual plants a minimum of 3 feet apart.

Drift roses are tough and easy to grow. Appealing to today's busy gardener, these low maintenance roses are highly disease resistant. They require no spraying. Blackspot disease has been very minimal on plants grown in Louisiana.

Checklist for September, October, November

1. Begin preparing beds for fall planting.
2. Take soil samples from landscape beds and submit to the LSU AgCenter Soil Testing Laboratory for analysis. Check with your parish LSU AgCenter Extension Service office for more information.
3. Fall is a great time to plant hardy trees, shrubs, ground covers and vines.
4. Plant spring-flowering bulbs in your gardens from late October through early December. Exceptions are tulips and hyacinths, which must be refrigerated and planted in late December or early January.
5. Garden mums make a great addition for fall color. Check at your local retail garden center for availability.
6. Watch azalea plantings for early fall infestations of lace bugs. Control with acephate, horticultural oil sprays (bifenthrin, cyfluthrin or permethrin) and other recommended insecticides.
7. Build a compost pile out of leaves, grass clippings and remains from your vegetable garden.
8. September is a good time to divide and transplant Louisiana irises, if you need to. Fertilize your irises in October.
9. Many of the summer-blooming perennials are finished or finishing up their floral displays for the year. Cut back the flower stalks and old faded flowers to keep the plants looking attractive.
10. October weather can be dry. Water plants as needed. Pay special attention to any newly planted areas. It generally is best to water direct-seeded beds of flowers or vegetables lightly every day to make sure the seeds do not dry out.
11. Prune everblooming roses by early September.
12. Fall is an excellent time to plant many herbs in the garden. A few herb plants provide a lot of harvest, so don't plant more than you can use. Herbs to plant now include parsley, sage, thyme, dill, cilantro, rosemary, oregano, borage, fennel, nasturtium, French tarragon, chives, mint and catnip.
13. Trees that provide good to excellent fall color in Louisiana include baldcypress, Nuttall oak, Shumard oak, cherry bark oak, flowering pear, Chinese pistachio, ginkgo, Japanese maple, sweet gum, sumac, red maple, Southern sugar maple and hickory.

Dan Gill
Consumer Horticulture

Vegetable Gardening

Vegetables to Plant

September

Beets, broccoli (transplants or seeds through September), Brussels sprouts (transplants or seeds), cabbage (transplants or seeds), Chinese cabbage (transplants or seeds), cauliflower (transplants or seeds), collards (transplants or seeds), endive, carrots, English peas, snow peas, garlic (late September), kohlrabi, lettuce, mustard, onions (seeds, late September), parsley, snap beans (early September), radishes, rutabaga, shallots, spinach, Swiss chard, turnips and kale.

October

Cabbage, broccoli (transplants), mustard*, turnips, collards, kale, parsley, shallots, radishes, beets, spinach, leaf lettuce, Chinese cabbage*, celery, onions, Swiss chard, garlic, carrots and endive*.

November...

Beets*, shallots, garlic*, Swiss chard, spinach*, kale, radishes, mustard, carrots and turnips.

**Plant during the first part of the month.*

Fall is a great time to start a vegetable garden. Many people think of gardening in the spring because of the warm weather, but more often than not (especially in our hot and humid climate) it actually is easier to grow edibles in the fall months.

That's because insect and disease pressure decrease in the cooler temperatures… Notice it said decrease, because they don't just vanish. But you are sure to spend more time harvesting and less time squishing and spraying this season.

As always, with the start of any new season, bed preparation is critical. This is especially true in the fall season as we directly seed many crops, such as beets, radishes, turnips, mustard, collards and on and on. Seeds will germinate and emerge more evenly in well prepared soil. The more work you do now, the easier the rest of the season.

Need the skinny on soil preparation? Here it is: Remove weeds, till and build your rows. Add fertilizer, water and wait a week to plant.

Crop Highlights

Onions (Bulbing): Onion seeds may be planted for transplants from mid-September until mid-October. Keep the soil moist, because seed coats are hard. It may take two weeks for onion seeds to germinate to a stand. Onions can be transplanted into the garden from mid-December through January. Onion transplants should be the size of a small pencil or less when planted. They tend to bolt less. You also may sow directly in the row, where they will mature in late May-early June.

Short-day varieties to plant:

Red: Red Creole C5, Pinot Rouge or Red Burgundy.

White: Super Star Hybrid (All-America Selections), Candy (golden), White Bermuda or Georgia Boy.

Yellow: Granex 33, Texas Grano 1015Y, Nirvana, Savannah Sweet or Sweet Melody.

Fertilize plants sparingly prior to planting in the ground. This will prevent excessive growth, premature seed stalk development and bolting. About 2 to 3 pounds of 0-20-20, 7-21-21 or 8-24-24 per 100 feet of row are sufficient. Side-dress onions during the spring just before they bulb. Side-dress two additional times at two- to three-week intervals. (Follow the same schedule for bulbing shallots.)

Green Shallots: Shallot sets can be planted any time during the fall or winter. Replant bulbs as you harvest by separating plants and transplanting some of them again. By doing this, you'll have shallots throughout the spring. The largest shallot bulbs for sets are made by transplanting from mid-November to December.

Garlic: Separate garlic bulbs into individual cloves during October. Tahiti and elephant garlic are the largest and mildest of the recommended garlic varieties. The Italian and Creole varieties are smaller and stronger.

Check the Louisiana Department of Agriculture and Forestry Market Bulletin's website (http://www.ldaf.state.la.us/portal/News/MarketBulletinCurrent/tabid/165/Default.aspx) for possible sources of sets, or visit your local hardware store.

Plant cloves about 1 inch deep and 4 to 6 inches apart in the row. Several drills may be planted on one row. Allow 6 to 8 inches between drills. Fertilize before planting with 4 to 5 pounds of 8-24-24 per 100 feet of row. Side-dress with nitrogen after garlic is up and again in February and March just before the bulbs swell.

Lettuce: September is the best month to plant lettuce. Head and semihead lettuce should be planted so it is harvested before a hard frost. Plant heading varieties 12 inches apart in the row. They may be double drilled. Side-dress lettuce three to four weeks after transplanting and repeat two to three weeks later.

Recommended lettuce varieties include:

Semihead: Green Forest, Buttercrunch (All-America Selections), Oak Leaf or Parris.

Leaf: Simpson Elite, Red Fire, Red Salad Bowl, Nevada or Sierra.

Head: Great Lakes, Ithaca or Maverick.

Romaine: Green Towers, Bambi (dwarf romaine) and Cimarron

Lettuce seeds should be lightly covered for best germination, but some varieties require sunlight, so read the seed packet!

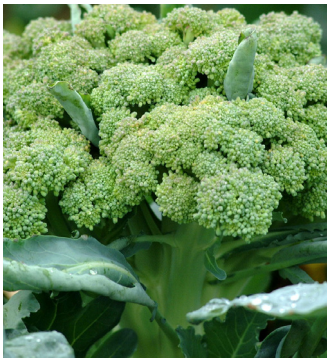
For endive or escarole, choose Ruffle, Salad King or Full Heart.

Greens: Keep the soil moist. Avoid thick plantings of greens. Space plants 3-4 inches apart. For weed control, Treflan can be incorporated before planting. Double drills may be planted on one row, allowing 10 to 12 inches between drills.

Recommended Collards: Blue Max, Champion, Top Bunch or Top Pick.

Recommended Mustards: Green Wave, Red Giant, Golden Fills, Tendergreen and Florida Broadleaf.

Broccoli and Cauliflower: Transplant in September. Space cauliflower 12 to 18 inches apart and broccoli 9 to 12 inches apart.



Both shallow-rooted crops respond to fairly high rates of fertilizer, 4 to 6 pounds of 8-8-8 or 3 to 4 pounds of 8-24-24 per 100 feet of row. Side-dress with 2 pints of calcium nitrate per 100 feet of row about two to four weeks after transplanting. Side-dress again at two-week intervals two to three more times. This will increase yield.

Recommended broccoli varieties: Packman, Windsor, Diplomat, Patron and Gypsy. Recommended early cauliflower hybrids are Snow Crown (All-America Selections), Majestic, Freedom, Cumberland, Candid Charm and White Rock.

Cabbage: Recommended varieties for fall and winter production are Bravo, Rio Verde, Silver Dynasty, Thunderhead, Emblem, Blue Vantage, Cheers and Vantage Point.

Chinese Cabbage: Chinese cabbage is an excellent crop for fall gardens. Seeds are planted in September. Solid heads form 55 to 60 days after seeding.

English Peas and Snow Peas: Plant English peas, snow peas and other peas with edible pods during September. The key to success is to plant early enough so they bloom before frost and late enough so they aren't blooming when temperatures are too high.

Space peas 1 to 2 inches apart. About 2 to 4 ounces of seeds will plant a 100-foot row. Between 70 and 80 days are required from planting until harvest. Staking or trellising peas, even the bush types, will help to increase the chances of success.

Spinach: Spinach requires a cool, fertile, well-drained soil with a pH of 6 to 7. Wait until temperatures cool for best germination.

Apply 4 to 5 pounds of a complete fertilizer like 13-13-13 per 100 feet of row about two weeks before planting. Side-dress spinach with 2 pounds of calcium nitrate per 100 feet of row. Start side-dressing about one month after seeding. This will keep it growing quickly, making it tender and improving quality. An additional side-dressing after harvest will improve yields on second cuttings.

Plant seeds about a half-inch deep and thin plants to 1 to 3 inches apart in the row. Since seeds are slow to germinate, be sure to keep soil moist. Double drills may be planted on one row. Allow 8 to 12 inches between drills.

Suggested varieties are Melody, Ballet and Tiger Cat.

Pumpkins and Winter Squash: Harvest pumpkins and winter squash after they have developed a hard rind and are the appropriate color for their varieties. If the rind cannot be easily penetrated by the thumbnail, the fruit is mature. Leave about 3 inches of stem attached to the fruit. If stored in a cool, dry place (off the ground and floor, if possible), these cucurbits will keep well for several months.

Watch out for worms. If they eat all of your foliage, you will have sunburned pumpkins (just like with watermelon).

Carrots: Start directly seeding carrots during September and continue to plant throughout the fall season. Form high, well-drained rows. Thin seedlings to about 2 inches apart.

Choose Danvers 126, Thumbelina and Purple Haze (All-America Selections). For sandy soils, use Apache, Choctaw, Big Sur, Maverick or Navaho. If you have heavy clay soils, simply cover the seeds with a loose potting mix. Clay soils tend to form a crust and prevent the seeds from emerging.

Beets: Directly seed beets from the fall through the winter. Choose Ruby Queen, Scarlet Supreme, Chariot or Solo.

Kathryn Fontenot, Ph.D.
Extension Vegetable Specialist

LouEASYana GARDENING

Fall is upon us, leaves are starting to fall, the nonevergreen plants are fading away. Oh no, the fence that hides our yard is bare! Now the neighbors can see our unkempt garden, toys and yard art that has long faded away. It's time to cover it up – and quickly.

Need a LouEASYana solution? Work up a small strip of soil right next to a bare fence or trellis and directly seed peas into the soil. What kind of peas? You have several options during the fall.

Sweet Peas

Sweet peas are primarily grown for their tiny but beautiful and sweet-smelling flowers. Sweet peas should be directly sown in the soil from September through November about 2-3 inches apart and only ¼ to ½ an inch deep since these are smaller seeds. Sweet peas must be planted near a fence or trellis. To promote additional blooms, harvest often. In other words, cut a small bouquet once a week as you're just passing by and give it to someone special! This plant will do wonders for a lifeless landscape and someone's feelings.

Sugar Snap Peas

Love to eat peas but hate to shell them? This delicate little edible pea is eaten in the pod. Like sweet peas, sugar snaps require a fence or trellis to grow on. From December through January, plant the seeds every 2 to 3 inches and no more than half an inch deep. As peas grow, they will climb up the trellis. For best flavor, harvest peas when the pods just begin to bulge

The best part of both sweet and sugar snap peas is that they require very little fertilizer. A light application of 13-13-13 a week before sowing seed or the addition of fully aged compost or manure is enough to get you through the season. Applying any more fertilizer will only reduce yields.

Enjoy the privacy of your now covered fence.

Kathryn Fontenot, Ph.D.
Extension Vegetable Specialist

Fall Lawns in Louisiana

Should You Fertilize Lawn During Fall?

Louisiana usually stays warm well into the fall, and lawns continue to grow until nighttime temperatures dip into the 50s. So be sure to mow and water your lawn, as needed, to keep it healthy.

More than likely, however, it is time to put up your fertilizer spreader. Fertilizing warm-season grasses during the fall with high nitrogen (summer-type) fertilizers or winterizing fertilizers containing nitrogen are not recommended for Deep South lawns.

Stimulating fall growth of St. Augustine, centipede and zoysia grasses with nitrogen leads to increased brown patch disease and winter kill. Bermuda grass may be fertilized into September, but I would not make any more applications of nitrogen-containing fertilizers after late August on St. Augustine, centipede or zoysia.

If you would like to extend the green color in home lawns this fall, apply foliar iron spray or spreadable iron granules. This will give you a nice flush of green color without increased growth.

The only other fertilizer that could be applied during the fall is muriate of potash. Muriate of potash (0-0-60) is the true winterizing fertilizer and it may be applied in September or October to provide increased disease resistance and cold tolerance. Most garden centers and feed stores have some form of potash. Get a soil test before applying potash to your soil, however, since there is no advantage to applying excessive amounts.

Speaking of Soil Tests…

Fall is the best time of the year to get your soil tested by the LSU AgCenter Soil Testing Lab.

Soil testing really is the first step to a beautiful lawn next spring and is the best way to determine exactly what your lawn needs to become thick and healthy. If you haven't tested your soil in the past several years, do it now.

To test your soil, submit a pint of soil to the LSU AgCenter Extension Service office in your parish. The pint should be a composite of soil samples collected from several different areas in the lawn. You only need to go about 4 inches deep. Also, to simplify the soil sampling and submission process, there are new pre-addressed submission boxes with sampling instructions at several garden centers throughout the state.

The sample results will be sent to your home mailbox and/or email in about two weeks. An LSU AgCenter extension agent can help you interpret the results from the soil sample. Sample results may indicate lime is needed to increase soil pH. If so, fall/winter is a good time to apply lime, since it takes several months to activate in the soil. Elemental sulfur may be recommended to reduce soil pH in alkaline soils.

Lawn Weed Management

Granular pre-emergence herbicides can help manage winter weeds if applied prior to weed germination. These are the same herbicides used for pre-emergence crabgrass control that are applied in late winter and early spring.

Pre-emergence herbicides containing pendimethalin (Scotts Halts), dithiopyr, (Hi-Yield Weed Stopper) and benefin plus trifluralin (Green Light Crabgrass Preventer) provide good control of annual bluegrass, common chickweed and various other winter annuals prior to their emergence. Isoxaben (Green Light Portrait) provides good control of winter annual broadleaves. Isoxaben has no activity on germinating grasses, however, so consider applying one of the previously mentioned herbicides on the same lawn for a complete broad-spectrum, pre-emergence weed control program.

Ron Strahan, Ph.D.
Weed Scientist and
Turfgrass Specialist

Fruits

Olives

The Louisiana heritage of loving great food extends to the production of many exotic commodities. The topic of the beneficial Mediterranean diet and its extensive use of olive oil brings questions of whether we can grow olives in our own backyards.

Unfortunately, olives, like so many horticultural crops, struggle with diseases in our humid, high rainfall climate. They are best adapted to the dry, mild Mediterranean climate that produced the heart healthy diet.

The olive, *Olea europaea* L., is in the Oleaceae family. This family contains about 22 genera and 500 species. Olive is by far the most economically important member of the family, but several others are valued as ornamentals: *Fraxinus* (ash), *Syringa* (lilac), *Ligustrurn* (privet), *Jasminum* (jasmine), *Forsythia* (forsythia), *Osmanthus* (fragrant olive) and *Chionanthus* (fringe tree). The genus Olea contains about 20 species, but only the olive produces edible fruits.

Varieties

Each Mediterranean country has its own unique varieties of olive, and many seedling trees are cultivated. The recently published world catalog of olive varieties lists more than 130 varieties, with more than 30 cultivated in both Spain and Italy. Some orchards (groves) are hundreds of years old, making it difficult to tell what varieties were planted originally. Different varieties are generally used for oil (e.g., 'Picual', 'Leccino', Frantoio') and for table olives ('Manzanillo' `Sevillano', `Ascolano', 'Calamata').

In California, `Manzanillo' and `Sevillano' constitute about 90 percent of olive production, with small amounts of `Mission', `Ascolano', and others. `Manzanillo' is by far the major variety, having a small fruit that lends itself to the "black ripe" olive market, but with high enough oil content (greater than 20 percent) that culls can be used for making olive oil. The `Sevillano' fruit is two to three times the size of the `Manzanillo' fruit but has low oil content and is used only as a table olive. Both were introduced from Spain in the late 1800s. `Mission' formerly was the most popular variety in California, but small fruit size, a relatively large pit and susceptibility to diseases and late frost led to its decline in popularity.

The only variety that will fruit in Louisiana and that is self-pollinating is 'Arbequina'. 'Ascolano' is considered to be the most cold hardy. There is no good research-based information about what cultivars will do best under Louisiana conditions.

Origin, History of Cultivation

The olive originated in the eastern Mediterranean area and has been cultivated by humans since ancient times. Trees are extremely long-lived (up to 1,000 years) and tolerant of drought, salinity and almost total neglect. Thus, they have been reliable producers of food and oil for thousands of years.

The earliest references of olive oil use and international trade date to 2000 to 3000 BC. Oil was used for cooking as well as for burning in lamps. Several references are made to olive oil lamps in the Bible and other ancient writings from Greece and Rome.

The olive was spread throughout Mediterranean Europe and North Africa very early, due to its ease of vegetative propagation and cultivation in dry climates. The Romans, building on earlier work on olive culture by Greeks, Arabs and Egyptians, refined olive oil extraction and improved varieties used for oil.

Today, the industry remains largely confined to the Mediterranean countries of Europe, the Middle East and North Africa, where it began thousands of years ago.

Olives were brought to California shortly after 1769, when the first mission was founded by Franciscan padres in San Diego. The California industry began in the late 1800s, as settlers planted orchards from cuttings taken from the original mission trees. By 1900, about a half million trees were being grown in California, largely for olive oil production.

Around that same time, pickling and canning procedures were developed for producing black olives, which are the primary olive product from California today. Although there is some interest in producing high-quality virgin oils in California, olive oil is largely a secondary outlet for table olives unsuitable for market.

In Mediterranean or desert climates, olives frequently are used as yard trees. They have attractive, silvery-green foliage and full canopies, are evergreen and require very little water and maintenance. The fruits will stain sidewalks and cars (black-purple, oily stains), however, and the pollen is highly allergenic. Substitute varieties that do not fruit (e.g., `Swan Hill', `Majestic Beauty', `Little Ollie') have been developed for landscape use.

Medicinal Properties

Olive oil is an important component of the Mediterranean diet and is included in the European food pyramid. Those eating the Mediterranean diet (rich in olive oil, fruits, vegetables and fish) are known to have lower rates of colon, breast and skin cancer and coronary heart disease.

The active principles in olive oil are thought to be monounsaturated fats and phenolic compounds that function as antioxidants in the body. Oleuropein, responsible for the bitterness of raw olives, is one of the phenolic compounds. Extra-virgin oils

are higher in these protective compounds than are processed oils.

Olive oil also may act by reducing the LDL (low-density lipoprotein or the "bad" portion) and raising the HDL (high-density lipoprotein or the "good" one) forms of cholesterol in the blood. Olive extracts have been shown to have hypoglycemic activity, and oil reduces gallstone formation by activating the secretion of bile from the pancreas. Olive oil may act as a mild laxative.

World Production

Total production is about 34 billion pounds. Olives are produced in 39 countries worldwide on an area of more than 21 million acres. Olives, along with grapes, probably are the most extensively cultivated temperate fruit crops in the world. Average yields are 1,610 pounds per acre but range widely from 300 to over 8,500 pounds per acre.

The leading producers of oil are the same as those for overall olive production. More than 75 percent of the world's olive oil is produced in just three countries – Spain, Italy and Greece. The vast majority of the olive crop is used for oil.

Total U.S. production is about 208 million pounds. It is produced on about 32,000 acres and represents less than 1 percent of world production. All U.S. production is in California, largely in the Central Valley. Average yields are 6,500 pounds per acre, about fourfold greater than the worldwide average yield.

Botanical Considerations

Olives are large, evergreen shrubs in their native state but are trained as stout trees on massive trunks, especially in older plantings. Most trees have round, spreading crowns, but tall, cylindrical trees are grown in some parts of Europe.

Trees in neglected groves grow almost imperceptibly slowly, whereas irrigated trees in California may reach 12 feet in just four years.

Olives have the longest-lived trees of any fruit crop. Some trees in Europe are believed to be 1,000 years old.

Pollination

Most olives are self-fruitful, but some varieties bear heavier crops when cross-pollinated. Wind is the pollinator.

Fruit

The fruit type is classified as a drupe. Some other flowering plants that produce drupes are coffee, jujube, mango, most palms, pistachio, almond, apricot, cherry, peach and plum.

The fruit is oblong with smooth, waxy surfaces. Its color is green when immature, turning yellowish-green in autumn, with red, purple or black coloration at full maturity. A stony pit surrounds a single seed. Olives require six to eight months for full maturation, but table olives are harvested earlier, when firm, and oil olives are left on trees until oil content reaches 20 to 30 percent (early winter).

Production

Trees produced vegetatively from cuttings may flower in two to three years, produce significant crops in four years and reach full production in about seven to eight years. Seedling trees have a long juvenile period and take up to 10 years to reach full cropping. Olives have a tendency toward heavy alternate bearing.

Olives are supremely adapted to Mediterranean climates and cannot tolerate high humidity due to diseases and physiological disorders. Fluctuations in humidity and temperature one to three months following fruit set cause a condition known as aseptic apical decay on fruit. Part of the fruit surface turns black, and the fruit usually separates. Even in Mediterranean climates, losses may reach 30 percent.

Chilling requirements vary among varieties. Those grown in California have relatively high requirements (more than 1,000 hours). Varieties grown in northern Africa fruit well with only a few hundred hours of chilling. Cold hardiness varies with variety and may approach 5 to 15 degrees Fahrenheit in midwinter, when fully acclimated, but foliage and fruit are damaged by frost during active growth.

Harvest Method

Olives traditionally are harvested by hand – a process that is not only tedious and laborious but also represents the major proportion of the costs of production. Hand harvest is accomplished by three techniques:

- Collection of fallen fruits from the ground.
- "Milking," or the stripping of fruit from limbs using half-open hands, so the fruit falls into picking bags or onto nets below the tree.
- Beating limbs with large sticks to dislodge fruit, which also are collected on nets.

Some table olives and high-quality oil olives are picked individually into baskets around the picker's neck to avoid damage and subsequent quality loss. Collecting fruit that falls naturally to the ground is inexpensive but seriously compromises oil quality. Thus, milking or beating are the most commonly used techniques.

Mechanical harvest of olives has been studied and attempted in various forms for years. It is used to a limited extent in more intensive orchards.

Compared to other tree fruits that are mechanically harvested, olives are problematic. Olives require about five times more shaking energy than other fruits, such as prunes and almonds, due to the willowy nature of the trees and the resistance to detachment of fruits. Using mechanical shakers designed for almond harvest in California, at best, 65 to 80 percent of the fruit can be removed from the trees. The remaining fruit is either lost or must be hand harvested.

Cullage can be four times higher with mechanical shakers. Initial costs of equipment also are high, precluding this approach for small growers.

David Himelrick, Ph.D.
Extension Fruit Specialist

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