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Cooperative Extension



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GROWING VEGETABLES IN CONTAINERS

The current and growing interest in healthy foods is encouraging many to grow some of what they eat at home.

For some people that might mean a full scale vegetable garden. For others, who do not have space for a garden, that growing vegetables in containers may be the answer. Either way, gardening can not only be a rewarding and healthy venture, but also fun. The whole family can get involved.

There are several reasons that people like to grow their own vegetables at home. The first is freshness. When harvested right at home, those who eat the produce will know exactly how fresh it really is. A second reason is that many people like to know where their food comes from and how it was handled in the garden, during harvest, and in preparation for the table. Many today want to know just their food's history start to finish.

The last common reason mentioned is the satisfaction and downright fun of producing their own salad, garnishes, and fruit. They enjoy the process, start to finish. They find satisfaction in growing their own food in their own gardens, and they look forward each year to putting transplants or seeds into the ground. If you do not have room for a garden, growing vegetables in containers may be the answer.

Container gardening can work for those who live in apartments, duplexes without yards, and other residences either forbidden by regulation or just do not have the space. Growing vegetables in containers generally requires a minimum of space and just one or two containers may be sufficient to regularly provide a fresh salad. They can be placed indoors in a sunny location, or outdoors in a protected spot. The number and size of containers will be dependent upon the amount of produce you want at one time, and your ability to take care of the garden appropriately. That is one of the nice things about gardening in containers. The entire system can be quite flexible.

Just about any vegetable plant can be grown in containers. Plants that grow rapidly seem to do best in containers. Tomatoes, eggplant, peppers, melons, and leafy vegetables like lettuce and chard are some that flourish in containers.

Container gardens require a good potting soil. Regular desert soil, dug right out of the garden, will carry weed seeds and disease pathogens. These problems will be magnified in pots. Most potting soils purchased commercially have either been well composted to eliminate weed seeds and disease organisms or have been sterilized. A good potting mix would combine equal amounts of compost, peat moss, and either vermiculite or pumice. I like to add heaps of

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earthworm bedding out of my worm composting system. This adds organic matter plus plant nutrients released by the worms feeding on food scraps. While expensive, pumice is useful because it holds water well and helps provide drainage and aeration. It also can help prevent compaction as the mix dries. Regular sand can take the place of pumice but make sure that it is well washed before use.

Every container should have good drainage out the bottom. Drainage is essential because of the root's need for air. A good mix will be about 50% solid material and 50% water and air. The spaces between the solid matter is where the water and air are found. Obviously, when we water, most of the air in the mix is driven out. As the plant uses the water in the soil or as the water evaporates from the surface of the mix, air will follow down through the spaces. Ideally, there will be both water and air sufficient to maintain the good health of plants.

If you are planting vegetables from seed during these cooler months, you will get your young plants up and growing more quickly if you cover the container with thick, clear plastic. The clear plastic allows the sun to warm the soil around the seeds for quicker germination and emergence from the soil. It is important to not seal off the edges of the container with the plastic. This will prevent the entry of air so critical to the growth process. Lack of air can seriously injure or kill young seedlings, especially in plastic containers whose solid sides prevent air from entering from the sides and bottom of the container.

Potted plants dry out more quickly than those planted in the ground. Proper timing of irrigations is critical. It helps to group plants of similar need together and then hook up a drip system on a timer to deliver the amount of water at the frequency necessary to maintain good plant health. Many problems associated with container plants can be solved by careful management of water.

Plants in containers also need adequate fertilization. Because the root system is confined to soil within the pot, available nutrients are more frequently mined from the relatively small area. With the exception of cacti and succulents, such as the agaves, add a diluted water soluble fertilizer with each irrigation. The constant but light application will provide the plant with the necessary nutritional needs required for good growth in the containers.

Make sure that the fertilizer applied contains all three of the major nutrients commonly provided by commercial fertilizers. These are nitrogen, phosphorus and potassium. Artificial container soils will not provide large amounts of nutrient and the use of a complete fertilizer will be necessary. The label of the product will tell exactly what nutrients are provided.

When beginning to garden in containers for the first time, it is advisable to start small and work up. There is a knack to growing good plants in containers. To avoid major failures, it is a good idea to work with one or two pots until you are confident that you maintain the plants in good condition. If you have a plan in mind, and work your plan, you should be able to grow plenty of produce for your dinner table right in your own yard.

Vegetable gardening in containers is a good way to not only have vegetables fresh for the table but to have fun in the garden, no matter where you live.

LANDSCAPE DESIGN IS AN ART

If you are thinking about upgrading the landscape in your yard, you may want to brush up on your art skills.

I know that sounds really weird but creating a landscape that meets all of your needs, that is functional, and that looks good, requires the application of not only basic principles of science but also basic principles of art. Mixing art and science together can bring about a marvelous transformation of any yard or outdoor area. Please, let me explain.

When designing a landscape there are many critical steps that must be taken and a lot of important decisions that have to be made before the first plant is placed into the ground. Some of those will require a scientific evaluation of soil characteristics, water supplies, micro climate needs, and so forth. Other decisions will, such as balance, use of space, plant function, and so forth, fall more into the realms of art. A careful consideration of all essential elements is critical to the overall success of the project.

First and foremost, in most cases, it pays dividends to first create a written landscape plan that incorporates and integrates all of the various information available. A good plan will involve and demonstrate both the science and the art elements needed for success. You may decide to have a design created by a professional landscape artist. In so doing, you will work together to come up with a workable design. Or, you may elect to make the design yourself. Many people do. Whether you do it yourself, or hire it done, there are several questions and considerations that will need to be answered or addressed as the project goes forward.

Perhaps one of the first, and most important, questions will be this. What is the main purpose of the landscape? There will be as many answers to this question as there are people making a design. Shade, privacy, color, and a whole host of other reasons are often cited as major reasons for planting a tree, a hedge, or a garden. I would submit, however, that no matter what other reasons we consider, the bottom line, down-to-earth purpose is to improve the looks of the property. In so doing, hopefully, all of those other goals get met along the way.

The way the yard looks either complements the home, or it makes it look tacky. It either enhances the value of the property or it detracts. For our own peace of mind, and to improve our bottom line, we want to have a nice looking yard. To plan for that, we need to think in terms of how it will look when it is finally finished and grown to full stature. That is the basic and overall reason why everyone upgrading a landscape needs a design, and why the design should incorporate principles of art.

When you speak to an artist about the art they create, they often will communicate in terms of the basic components that make up the painting or sculpture. They will speak about line, shape, texture, and other elements that, grouped together, are the elements and principles of art. One of the first that they will mention, and one of the most important in landscape design, is balance.

Balance relates to how the various pieces of the design are linked together. Sometimes, looking at the property, one can draw a line down the center so that the proposed landscape is split in half, generally with both sides being equal in area. In most properties, the door of the house or building is the starting point for the division. The design then ensures that the two halves of the landscape balance one another.

In a balanced design, if there is a tree on the left side, it is usually mirrored by a tree on the right side. If there is a hedge on the right, there could be a hedge on the left. Some landscape arrangements could be symmetrical while others could be asymmetrical, meaning that it would not necessarily have to be the same tree or shrub on both sides of the yard. The bottom line is that there should be a harmony or rhythm in the landscape that gives a sense of serenity or peace because of the way the plants are arranged.

Another art principle that is important in landscape design is variety. Variety is a measure of the complexity of the landscape. Simple landscapes with just a few plants or features in place may be scientifically easy to take care of but in

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the long run could end up being boring or monotonous. More interesting landscapes are those that have a larger variety of plant mixes, colors, textures, and so forth. It is possible to overdo variety, that is for sure. We do not want an overgrown jungle, by any means, but a good design will take all of that into consideration and provide an interesting, balanced contrast of light and dark colors, smooth or rough textures, and large and small plants.

Another key element is proportion. In art, proportion has to do with size or amount of the various features in relationship to the entire work of art. In landscape design, this can get a little tricky, but in general, it refers to the how one part of the landscape relates to another part. In art, if we draw a picture of a cat and a dog together, we would want the cat to be proportional in size to the type of dog featured. Likewise, in a landscape, we usually do not put large trees in front of other, usually smaller plants. The large plants tend to hide the smaller plants and give the illusion that the landscape picture is out of balance in some way. This is not to say that large plants cannot be used but it does mean that they must be placed carefully to maintain the unity of the view.

The final art principle that we will consider is that of harmony. Harmony relates to the selection and placement of the various pieces that comprise a painting or a landscape in such a manner that the mix provides an overall visually pleasing effect. Sometimes this is a function of color, such as when the variety of plants provides different shades of green that, when placed next to each other, provides an overall pleasing effect. Harmony can also be expressed in the placement of one plant next to another. A saguaro and a mesquite, for example, when placed together in a nurse plant relationship give a natural, harmonious feel to a landscape. Placing the same saguaro next to a citrus tree gives a jarring, non-harmonious feeling that just doesn't work in the landscape. They just do not fit together.

There are other principles of art, of course, and a good landscape design will incorporate all of them. This discussion should, however, be sufficient to demonstrate the need to take them into consideration when we decide to install, upgrade, or renew an existing landscape design. The bottom line is that a landscape properly incorporating both science and art should look good, both from a distance and up close and personal. It will have a polished, natural, and pleasing feel that satisfies a viewer no matter from what perspective they be viewing the landscape.

Brushing up on art skills may not require you to pull out your artist's palette and a fresh canvas, but becoming conversant with many of the concepts and skills used by artists may be a good way to ensure that your new landscape looks as good as it possibly can.

THE NURSE PLANT

When it comes to creating authentic looking desert landscape gardens, we cannot afford to overlook the nurse plant.

The unique relationship between established desert trees and shrubs and newly germinated plants has long been recognized and studied by scientists. These relationships are not a hidden secret by any means since they have been seen and recorded in many deserts around the world. Close to home, we see them in the Chihuahuan Desert over in New Mexico and northern Mexico, up north in the Mohave Desert, and right here in our own Sonoran Desert. The phenomenon is often called the nurse plant hypothesis.

It goes something like this. Underneath the canopy of established trees and shrubs, such as creosote bush and palo verde, newly germinated plants find conditions that are somewhat less harsh than conditions perhaps just a few inches away out from under the canopy of the protecting plant. These improved conditions might include greater availability of plant nutrients, cooler temperatures, more available moisture in the soil, protection from small animals that might be looking for a free lunch, or other critical necessities for good growth. Whatever the slight edge might be, it is noted that the survival of younger plants is often higher for those growing under the canopies of existing plants over those that germinate out in the open. These protecting plants are called nurse plants.

Interested in learning more about nurse plants? A web search will bring up a host of references that will describe the nurse plant complex. To really understand, and visualize, what a nurse plant relationship really looks like, however, I would recommend that you take a walk out into a desert area near you and look closely at the plant communities. Nurse plants are not hard to identify, once you see your first one. Perhaps the easiest to recognize is a saguaro cactus growing underneath, or up through, a palo verde tree. Look for the trees first and then for one that has a saguaro growing inside the canopy of the tree. Then, look for other similar relationships. Pretty soon, they are almost everywhere you look.

Besides the saguaro, the night blooming cereus, several shrub species, and a broad array of annual plants are commonly protected in a nurse plant situation. When you see them, notice the way that the plants are arranged, and how the young plants look in relationship with the nurse plant. As you do this, you will begin to appreciate the overall structure and complex interrelationships of these desert plant communities. This is important because later we will talk about how to design an authentic looking landscape using the nurse plant principle.

In addition to the creosote and the palo verde, there are a number of plants that can serve as a nurse plant. I mentioned the palo verde trees because it is most common in our area but ironwood and mesquite trees, plus even smaller shrubs can also play a role. Just about any larger, established plant can do the job.

The nurse plant in the wild plays a key role in the development of healthy desert communities. The arrangement of plants, and the complexity of the landscape is often due to this relationships. As we work to develop authentic-looking desert landscapes, and for the same reasons that nurse plants are important to wild communities, we should consider incorporating one or more of these nurse plant relationships into urban landscapes.

Just think about it for a moment. If we want a truly natural-looking landscape, do we really think that one or two plants plopped down in a yard is going to give the same authentic feeling that one gets from designing a more complex landscape that truly mimics the desert around us? I believe that we can see why the answer to that question is no. If we are going to enjoy the real thing in our yards, we have to go the whole way and mirror the same kind of diversity and complexity of the natural desert. This includes adding a nurse plant relationship or two into the mix.

So, how do we go about doing that? We have to do our homework, and then make a commitment to doing the job right. It is going to take a good plan, a carefully selected mix of landscape plants, an irrigation system that can accommodate the needs of all the plants in the design, and careful management and care through the coming years.

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A good plan must include the proper use of plants according to the basic rules of landscape design. For example, tall, rangy trees or shrubs are normally planted off to the sides of the property to form an edge that leads the eye toward the central feature of the property. That central feature is usually the home. In the design, it is important to ensure that the trees are scattered, not planted in a straight line. In the desert, all plants are randomly scattered out, and never in a line. We want to mimic that arrangement in our basic design.

Then, in the design, the nurse plants should be carefully designated. I would think it best to consider not more than one or two nurse plant situations in a given landscape because we do not want to overdo it. If we add too many, then the landscape may look more cluttered than we want. One, placed in a high visibility area, could become an eye-catching focal point. If a more subtle look is desired, then one or more could be placed in less conspicuous areas, probably using plants towards the perimeters of the landscapes.

One of the most dramatic landscape arrangements that I have seen is a saguaro growing up through the canopy and poking above a short tree or large shrub. A cactus growing in the midst of a clump of several jojoba plants would also be interesting, as long as the shrubs are allowed to keep their natural shape. The same cactus planted in the midst of shaved shrubs would just not have the same feeling. Careful thought and planning could create many different scenarios, all of which could work well.

In creating nurse plant arrangements, it seems most appropriate to use native trees and shrubs, or their near relatives. The reason for this is that the eye is good at catching phony counterfeits so, at least to start, stick with those plants that are well known and are desert-adapted. A saguaro sticking out above a Chilean mesquite would probably work fine since the import and the native mesquite trees look so similar. A saguaro growing out a citrus tree just would not have the same mystic.

Don't forget to water your plants appropriately. Desert-adapted plants will not take a lot of water but they will need some to help them get through the warm, dry summer seasons. If you have an automatic irrigation system, don't forget to check the various parts regularly to ensure that they are working correctly. While a missed irrigation or two will not seriously impact desert landscape plants, long periods of drought could have negative impacts on the landscape.

Good care will be necessary also. For example, branches of the nurse plant could damage the young plant, such as a saguaro, growing through the canopy as the branches sway back and forth in a wind. Some light pruning may be necessary to minimize damage. Remove just enough to protect the tree, but not enough to harm the appearance that was desired when the nurse plant relationship was created. The best rule of thumb is to give just enough care to keep the plants healthy but not enough to create a landscape feature that looks unnatural.

In natural desert plant communities, especially in the Sonoran Desert, the nurse plant plays a critical role in the survival of several vulnerable plant species. If we want to have the appearance of a bona fide Sonoran Desert landscape around our homes or in public spaces, one or more nurse plant displays could make the difference between the spectacular and the blah.

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HIDE AN UGLY WALL WITH LANDSCAPE PLANTS

“What do you do with a wall that is six feet high, one hundred feet long, and boring as they come?”

This was a question once asked by someone in a Master Gardener class. It is a very interesting question and that requires some thought. This question, and other similar questions, describe those tough spots in yards that defy easy landscape solutions. Let's look at some of the basic rules that govern good landscape design and then look at possible answers to this particular question.

One of the great challenges in landscape design revolves around knowing what plants to place where to solve a specific problem. Some locations, such as most home foundations and corners, are relatively easy problems to solve. An appropriate hedge here or a well-placed shrub there and the problem is easily solved. Some situations are less easy to deal with and extra thought and care may be in order. A particularly tall corner, such as one might find on a multi-storied home or a long, blank wall are two good examples.

The rules of landscape architecture help us decide how to address landscaping issues. One of the most basic rules governs straight lines. Straight lines are a standard feature of buildings and walls. Just think about it. The corners of buildings are built to create a change in direction of architectural structures. The corner just reeks of straight lines, the most prominent of which is the perpendicular, straight up and down line that is the corner itself. Such lines are harsh to the eye and jarring to the view. Landscape architecture principles seek to soften and hide such lines, generally with plants. A tree or shrub placed at the corners of buildings tend to soften and even hide the abrupt change that comes from walls making 90 degree turns.

Building foundations are another source of straight lines. Think about the point where the ground leading up to the building meets the building's walls. That point where the level ground in front of the building meets the upright wall creates an abrupt change in perspective that is, again, harsh and jarring to the eye. A hedge or series of shrubs can hide that transition and provide a more visually attractive arrangement.

Going back to our question, a long, bare wall has many such straight lines. The bareness of the wall is, in itself, harsh and boring. Just think about the straight line of the top of the wall. The straight line where the wall turns a corner, and yes, the straight line where the soil meets the wall. If that were not bad enough, brick walls, in particular, have those long straight lines formed by the layers of the bricks themselves, and the lines created by the mortar that seals those bricks together. Long, bare walls are one of those architectural necessities that demand attention in a well designed landscape.

The solution to long walls would seem to be fairly easy: put up a shrub or tree here and a hedge there and call it good. While the simplicity of such a plan is attractive to consider, there may be other problems that complicate the picture.

The first challenge is the water bill. Some landscape plants require more water to stay healthy than others. The desire for water conservation, and a minimal water bill, may affect the list of possibilities for consideration.

Another challenge is the overall use of the space connecting with the bare wall. If the wall is part of a building, the list of possible actions may feature several choices. We for sure would not want a tree whose roots could damage the wall. If the wall surrounds a hub area of outdoor activities, plant choice may also be limited. Consider a backyard dedicated to outdoor sports, such as soccer or basketball. Just think what would be the result if an inflated ball, or a person for that matter, ended up in a cholla bush or prickly pear cactus plant. Thinking about these two situations makes it easy to see why circumstances could limit the plant palette.

The last major consideration is the scheme of the landscape. Some people may prefer a tropical Mexico look to their landscape while others may really be into the Mediterranean style. The style of the garden is the source of the “feel” that the landscape gives when one is outside and enjoying the landscape. Proper selection and arrangement of plants plays a major role in this and long, straight walls often must be taken into consideration.

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To address the long, straight wall question, it is first essential to answer each of the above questions and settle in our minds the various challenges. If we desire a wide open yard sufficient to support outdoor activities, like the soccer example, badminton, touch football, or a large swimming pool, then the long wall will probably be hidden best with plants that do not take up a lot of room. Climbing vines come to mind quickly, or foundation plants that can be pruned to hide lines but take up little space. If a more formal garden design is desired, then the regular plants for each of the various landscape themes can be considered.

What about those pesky corners? Tall, upright trees, cacti, or shrubs would work well in these situations. Italian cypress uses moderate amounts of water and fits well into a Mediterranean style, while a saguaro cactus strategically placed can perform the same function in a low water use landscape. Trees or large shrubs can also work well in these situations.

I would shy away from long, unbroken ranks of hedge plants up against these types of walls. Long stretches of any plant against a structure quickly gets boring to the eye. It makes better sense to break up hedges into segments by either planting a different shrub or tree at regular intervals along the hedge to shorten the field of view and provide contrast to the row of plants. An artist might think about placing statues intermittently along the wall to break up the hedge. More simply, one could just allow one plant or section of the hedge to grow taller than the rest to fulfill the same task.

While we are at it, let's not forget fruit trees and flowering trees and shrubs. Fruit trees, like citrus and low chill deciduous apple, apricot, plum, and other varieties make great foundation plants if the required space can be allotted. They look good too.

Flowering trees and shrubs, such as salvia or Mexican elderberry, help break up boring walls and provide color and interest to the landscape. Many people find the various types of rose to also be helpful. A climbing rose on a trellis, such as the Lady Banks rose, can hide a lot of space quickly without taking up too much room. The choices on the plant palette are endless.

Developing attractive landscapes is a task that many of us face. We want something that is easy to care for, simple to manage, and look attractive. Fences and bare walls can be particularly difficult to address, but a knowledge of plants and the right management scheme can work wonders in beautifying even the most challenging of architectural features.

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