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U of A Cooperative Extension, Pinal County 820 E. Cottonwood Lane, Bldg. C., Casa Grande, AZ 85122
(520) 836-5221 **http://extension.arizona.edu/pinal**

Using Barriers and Hedges in the Landscape

Large and small shrubs and trees can be quite useful in the landscape when a hedge or barrier is called for.

A hedge or barrier is usually a line of shrubs or small trees, all with dense canopies of leaves, that perform a variety of purposes in the landscape. Hedge plants are mainly those of short to medium height, while barriers are generally composed of larger plants, usually taller than our heads.

Hedges and barriers are commonly part of most landscape designs and play an important and fundamental role in them. In addition, they add both texture and structure, key elements in serviceable and attractive yards. As we better understand the proper uses of hedges and plant barriers, we can achieve all of these goals in any landscape.

Hedge and barrier plants come in many shapes and sizes. For this reason, they offer a great deal of flexibility in the creation of any landscape design. They come in various sizes, colors, leaf shape, water demands, and flowering characteristics. By choosing carefully, any desired appearance or function is possible, and that kind of flexibility can be quite valuable in figuring out how to get the best use out of our yards.

For example, a hedge or barrier can be tall and dense for privacy or wind protection, or it can be short and relatively loose. This latter can be good for allowing light to enter through windows and, while defining space or softening a wall, they do allow breezes to pass through to help cool an outdoor living area.

There is flexibility in shape also. Most are probably familiar with the formal hedges in European gardens. Pruned correctly, these squared off plants look neat and uniform as they perform their work. Others will prefer the more natural look as these same plants are allowed to grow into their natural shapes and forms.

The choice in size and appearance will be dependent, of course, upon the specific nature of the landscape, the tastes of the person caring for the plants, and limitations placed upon the plants by soil, water, and neighborhood concerns. All of this requires careful planning, correct installation, and good management after the plants are in place.

Using Barriers and Hedges in the Landscape. . . Continued on Page 2

In This Issue:

Using Barriers and Hedges in the Landscape ... Continued from page 1

We mentioned earlier that hedge and barrier plants can fulfill many different purposes in the landscape. One of the most common uses is to hide walls and the foundations of buildings. The visual line at the point where a vertical wall meets the horizontal soil surface can be stark and abrupt in appearance, and many choose to soften the lines and improve the appearance by using plants placed near the foundations of buildings to hide the jarring lines and transition the walls gently to ground level. Taller plants, either by their own natural growth habit, or by pruning style, are similarly used to hide the corners of walls. Many different plants can be used to accomplish these missions and the variety prevents the humdrum and repetitive. Selecting carefully, each yard in the neighborhood can quite unique.

Barrier plants are usually on the tall side and planted close together most commonly to serve as a windbreak, but some people also use them for privacy. Oleanders are quite often used as barrier plants, but there are others that work equally well. Some use citrus trees carefully spaced to perform the same function.

Hedges and barriers can also help define property lines. Many use a front hedge to separate the yard from sidewalks, or the street, or the alley. A hedge can make an excellent alternative to a fence that some might find ugly or alienating. Defining spaces can be a valuable way to enhance property value and provide an esthetic sense of order to a yard.

Another use of hedge plants is to direct traffic. Some choose to line the edges of a sidewalk or driveway to help people know where walking is easiest and safest. In some yards, or in specific places in yards, such as near a cactus garden or next to a swimming pool, protection and safety can be of great concern.

Other uses for hedge and barrier plans include the division of gardens and landscapes into sections or into completely different areas. These divisions help in transitioning from one part of the yard to another and are often important when one wants to establish a specific mood or feeling in a given section of the yard. For example, if both a tropical Mediterranean garden and a Sonoran Desert garden, each with their own totally different palette of plants, is desired, a hedge can help define the limits of each garden and make it easy for a person to make the transition as they move from one section to another.

The types of plant used to create hedges and barriers can be broken down into many different subgroups, such as size or color, but I would suggest that the most important category that most would want to consider is water demand. Some may desire to keep the water bill relatively low and thus decide to go with low water use plants, such as the jojoba, cassia, or Texas ranger. Others may opt for color or interest as the most important characteristics and decide to use plants with a moderate water demand to achieve those goals. Euonymus, privet, and other similar hedge plants are good examples of this. They offer deep green leaves and foliage that can be quite dense which makes them great hedge plants. They may take a little more water to keep healthy, but the diversity may be worth it.

There are many other possible candidates, of course, some with colorful flowers or a unique structure. A good reference will help create a list of plants that will be just right for your particular needs.

Given some careful thought and a good design, hedge and barrier plants can play valuable roles in any yard. Using the right plant for the job at hand can bring variety and interest to the landscape while helping create an attractive yet functional yard.

Native Predatory Mites

While plant-feeding mites can cause great problems for both indoor and outdoor plants, there are other mites that are really quite helpful.

Just what is a mite, and what does it do? First of all, a mite is not an insect. An insect, by definition, is an animal with six legs. The arachnids, including ticks, spiders, scorpions, and most mites, all have eight legs. Yes, the insects and the eight-legged critters are closely related, but there really is quite a bit of difference between the two groups.

Compared to most insects, mites are tiny; the largest being less than 1 millimeter long. A millimeter is the space between two lines on the metric ruler. Because they are so small, it is necessary to use some form of magnification, such as a microscope or hand lens, to see them. Since they are not easily seen, they are often ignored in the garden. While it may be a case of "out of sight, out of mind" more often than not, both the harmful and the beneficial types are often there, unnoticed.

Like insects, most of the damage caused by mites is through the process of feeding. While their mouthparts are quite small, large populations of them by sheer volume can remove a lot of energy from a plant. For that reason, mite-infested plants tend to be slow-growing and weak. The leaves are often discolored and spotted at the feeding sites. Some mites, like the spider mites, weave webbing that protects them, but also attracts dust and debris that gives a plant a dusty, unkept look. To check for mites on a plant, I like to take a branch and dust it into the palm of my hand. Then, I wait for the dust particles to start moving.

Just as there are beneficial insects that attack plant pests, there are also beneficial mites, we call them predatory mites, that attack harmful mites and some insects. Almost everyone knows how lady beetles feed on aphids and other soft-bodied insects, but relatively few know about Galendromus occidentalis, and the good that it does. Unfortunately, we do not talk much about the predatory mites, but they can be a big help to us when we are facing small pests, such as the spider mite, the two-spotted mite, and even some insects, like thrips. I recognize that the subject is sort of complicated, even multi-faceted, but at the risk of over simplifying, lets take a look at some general principles and rules that govern the use and protection of beneficial mites, and insects for that matter.

When attempting to manage all plant pests, especially mites, it is important to remember to use an integrated approach. In other words, we should strongly consider all of the available methods of control and use as many as possible before grabbing a bottle of chemical and attempting to eradicate everything on the plant. We need to remember that the beneficial mites, if present and protected, can often times do the job themselves without us doing a thing. When we do feel the need to lend a hand, we should implement those steps that will slow down the pests while protecting and enhancing the ability of the natural predators to do their jobs as much as possible.

For example, washing plants with a strong stream of water, sometimes laced with an insecticidal soap solution, is usually our first line of defense. Still, we have to remember that it will knock not only the targeted spider mites off the plants but also the predatory mites. Insecticides applied to target the two-spotted spider mite will probably have a more harmful effect on the beneficial mites than the plant pests because existing and available chemistry does not work very well on this type of animal. For this reason, we give the predators all the time they need to do their jobs and only get involved when pest populations explode beyond their capacity to keep up. Careful and regular study of your plants will help you decide when to step in and do something different.

Next, it is important to remember that because mites do not have wings, it is difficult for them to move from one host to another. They all have to crawl from place to place or be moved by wind or some other method. Here is the challenge. If a harmful spider mite arrives on a new host plant and there are no predators waiting, or cannot follow along, the populations of the harmful mite can quickly explode to harmful levels. That is one reason why pest populations can quickly get out of hand, and why we need to constantly be watching.

How do we ensure that the predatory mites are available to give us a hand? That can be a challenge of course. In the face

Native Predatory Mites . . . Continued on Page 4

NATIVE PREDATORY MITES . . . CONTINUED FROM PG.3

of a heavy spider mite infestation, it may be necessary to introduce predatory mites to the plant after we have washed the plant off and treated it with an insecticidal soap solution. We can do that in two ways by 1) pruning off an unneeded branch of a similar plant with no signs of heavy populations and placing it into the canopy of one with a heavy population, or 2) by purchasing a supply of predatory mites and introducing them to infected plants. While the first may be hit and miss, and maybe more miss than not, it is the cheapest. The second method is more sure, but it is also more expensive.

If we decide to purchase, which one should we choose? It depends upon the targeted pest. Some predatory mites work really well on one while others do better on another. Some prefer eggs over the adult forms while others fiercely attack adults. Some will even feed on small insects, like the thrips. Thrips are small insects that attack some of more well-known plants, such as the western flower thrips on roses, and the citrus thrips on our oranges, grapefruit, and lemons. It is important to know what pest you have, and what you need to provide control. A qualified supplier can be a big help with this.

Environmental conditions will also affect selection. The predatory mites, like most other animals, have preferred ranges of temperature and humidity. Some predatory mites that live in more humid or cooler temperatures, may not survive in our hot and dry conditions. When selecting and ordering predatory mites, if that is your choice, it is important to purchase product that has been shown to thrive in Arizona. For that reason, it may be best to look for Arizona sources when placing an order.

Some of the predatory mites that have shown promise here in the desert include members of the Amblyseius, Neoseiulus, and Galendromus genera. A. cucumeris and G. occidentalia are two that are commonly sold locally. Most prefer a little higher humidity level than is generally common in our outdoor gardens. For that reason, and because of the cost, most predatory mites that are purchased are used in greenhouses. Some, however, do well outdoors.

By understanding that not all mites are bad for our garden and landscape plants, we can begin to understand why it is important to manage our plant habitats carefully so that we can best employ the help of both beneficial mites and insects.

That brings us to the old, outdated, and completely wrong adage, “The only good bug is a dead one!” We have spoken in this space about the beneficial insects, or those that feed or otherwise prey on the insects that really do cause harm in our gardens. It is through the efforts of these beneficial insects that we are able to keep the pest populations naturally in control and minimize the amount of chemical controls that we need to apply. The beneficial insects, like preying mantis, assassin bug, and the lacewings, are our friends. The same is true of the mite world.

It is important to correctly identify mites from insects because the methods of control between these two groups can be different, depending upon their structure. I know, you would rather not get close enough to count legs, but I would still submit that it is important so get yourself a good magnifying glass or hand lens, at least 10X, and start checking your plants regularly, especially if you start suspecting that the populations of the bad ones might be building up.

There are some important key points related to this.

When we see a plant that is heavily infested with harmful mite populations, 1) we can assume that there are insufficient or even no balancing populations of predatory mites to keep them in check. Likewise, if we do not see infestations of harmful mites on a given plant, it could mean that there simply has been no mites present to give start to an infestation, or, that there is a balancing population of predators helping keep them in check. A good hand lens will help you know which of the two situations is occurring in your garden. If you see a spider mite here or there on your leaves, but the populations are fairly low, then the second condition may be true. However, keep checking regularly because if the ones you are seeing have just arrived, there simply may not have been time for a harmful population to develop. Vigilance is ever important.

Foliar-Applied Fertilizers

Foliar-applied plant fertilizers are a popular way to feed trees and shrubs but to get the best results, it is important to know when and how to use them.

Most people familiar with plants know that nutrients needed for growth and development are generally acquired from the soil, with the roots doing the heavy lifting. Because this, our first thought many times is to spread a soil-applied fertilizer. There is nothing wrong with that. It is a good way, but there are other ways that in certain situations make a lot of sense. Foliar feeding, or feeding through the leaves and stems, is one of those ways.

When it comes time to feed the plants, it may be worthwhile to stop and think a moment about the benefits of one method over another. Let me start that discussion with a local example.

We did a nutrition study years ago on anemic-looking pyracantha bushes growing along a wall in Arizona City. The plants were deficient in iron and showed the classic yellow leaf symptoms of iron chlorosis. In addition, the plants were slow-growing and sickly. All of these are common symptoms of iron deficiency in plants.

For our test, we applied both foliar and soil-applied iron fertilizers in different amounts to separate plants. Half were treated with varying rates of foliar fertilizers and half were treated with varying rates of fertilizers applied to the soil. Then we waited for any plant responses.

Interestingly enough, the fertilizers sprayed onto the foliage greened up the plants faster than those applied through the soil but the foliar-treated plants remained green for much less time than those who received their nutrients through the soil. We demonstrated that both types of fertilizers have their place and can play an important role in helping struggling plants recover. A fast acting foliar-applied fertilizer can help perk up a plant in the short term but for long term benefits, there should also be an accompanying soil application.

In addition to the length of time necessary to see a response, it is important to remember that there are other factors to consider when choosing between a foliar and a soil-applied fertilizer. Timing and frequency of applications, formulations used, and nutrient complex presented are also important considerations. As an example of the latter, nitrogen, phosphorus, zinc, and other nutrients in addition to iron have been successfully fed to plants through the leaves using different formulations .

When correctly formulated, nutrients can enter the plant through the leaf stomata, or the tiny holes in the leaf through which water, oxygen, and carbon dioxide vapors can enter and exit the plant. Some nutrient formulations can also be absorbed directly through the cell walls of the plant. Because the nutrients are being absorbed into tissues that either house or are close to the structures that use the nutrients, they are readily available for use. Offered these treats, the plant does not hesitate quickly shows improvement. However, since the application was a one time event, the nutrients can also be quickly used up.

Soil applied fertilizers, on the other hand, tend to be absorbed over time, resulting in a steady supply of nutrients trending upward through the roots and stems to the leaves. This steady parade generally takes a little time to move from one point to another within the plant, and as a result, the plant shows the benefits of the nutrients for a longer period of time. The take home message here is that, if we have a severely deficient plant, we may need the quick fix of a foliar feed, but it needs to be followed up with a soil-applied to sustain long term benefits.

Yes, multiple applications of a foliar fertilizer could keep a plant health and strong through the growing season but it takes vigilance to make sure the timing is correct. In addition, foliar fertilizers tend to be more expensive than the soil fertilizers, and for this reason, most people will want to use a combination of the two types.

Foliar-Applied Fertilizer . . . Continued on page 6

Foliar Applied Fertilizer . . . continued from page 5

Zinc is a different matter all together. In high pH soils, like many of our desert soils, zinc and other nutrients become less soluble in the soil. In so doing, they become less available to the plant. Solubility simply refers to the physical state of the elements when impacted by unfavorable soil pH conditions. In general, the higher the pH, the more difficult it is for most plants to extract the element from the soil. Some plants have extra troubles above and beyond that of other plants when this occurs. Pecan is one.

In the desert, pecan trees struggle to pick up zinc from the soil. The element may be there in sufficient amounts but the high pH prevents the tree from picking it up. In our area, all zinc applications to pecans are made to the leaves in multiple applications. Each spring, as the new leaves are developing, producers are running high volume sprayers through their orchards three, four, or more times, and a week or so apart, to provide the zinc the plant needs to produce quality nuts. In this case, foliar application is not only the best way, it is the only way to give the tree the nutrient that it needs.

When applying foliar fertilizers, it is important to make sure that the leaves and stems are covered completely with the fertilizer and in even amounts. Both the tops and the bottoms of the leaves should be covered. This usually means that the spray applicator should be directed to deliver the spray to both sides.

Once the fertilizer is delivered, it is important not to irrigate with a sprinkler or other above ground irrigation system for several hours, perhaps until the next day, to give the plant time to absorb the nutrient through the leaves. A premature irrigation could wash off the fertilizer before the plant can safely move it inside.

Timing of applications can also be important. Research has shown that plants receiving fertilizer applied to the leaves do better when the nutrients are applied in the morning rather than the afternoon. Foliar feeding may be a task that you might want to add to your morning chores. It is cooler then and it gives a sense of satisfaction at having accomplished something important before the day even gets started.

Careful selection and application of foliar-applied fertilizers can help maintain plant health and allow our plants to do their best all year long.

Purchase Unique Desert Plants at Boyce Thompson Arboretum

The Boyce Thompson Arboretum annual fall plant sale will begin October 10, 2020, with a "members only" preview on October 9, 2020 from 8am to 5 pm. If you would like something different to fit into your yard, this is the place to visit.

For complete information, their website address is https://www.btarboretum.org/, or simply search for Boyce Thompson Arboretum on the web. While the sale begins on Saturday, October 10th for the general public, the sale will continue through October 25th. If you are a member of the Arboretum, you will receive a discount of 20% off the plant sales. I have checked in with them and they still have plenty of stock from which to choose, so don't worry about that. If you do not have access to the internet, or would like to ask a question that is not answered on the website, please feel free to contact their gift shop at 520-689-4546. You will not have to pay an entry fee to shop at the sale.

I think you will be impressed with the wide variety of desert-adapted plants available. I am always impressed with the rich diversity of desert-adapted plants, including cacti and succulents, that they offer. Succulents are plants with thick leaves and stems that store water for those dry times. Among the succulents that are most commonly represented in our landscapes are the cacti and members of the *Agave* and *Yucca* species. There are many others, less common, that many people like because they are so unique. If you interested in something beyond the common, the Arboretum is a good place to shop.

The Arboretum plant sale will also include many types of plants, not just succulents. Desert trees and shrubs, flowering plants, some fruit trees, and other unique and interesting plants are often available for sale. Chances are that when you arrive, one of our Pinal County Master Gardener volunteers will be on hand to show you around. Look for helpers wearing our distinctive green badge and feel free to visit with them about any of your gardening questions.

While you are there, take time to tour the grounds and view the wide collection of interesting desert-hardy plants there. The Arboretum is located just 45 minutes east of Mesa. Founded in 1925 and dedicated to instilling in people an appreciation for plants, this 323 acre botanical collection includes a wide range of habitats along nearly two miles of paths.

Especially exciting, the famed Wallace Deserts Garden plant collection that previously were located in north Scottsdale, have come to Boyce Thompson Arboretum. Some of the plants have already been put into the ground and others are being planted as we speak. Many others are in boxes waiting for their chance to enjoy their new home. When you arrive, ask any of the staff or volunteers and catch their excitement and enthusiasm for the project. The official opening of the new Wallace Gardens is scheduled for next spring when all of the work will be completed.

The Wallace Desert Gardens previously belonged to the H. B. and Jocelyn Wallace family. Because of hard financial times since 2008, the Wallace family and Garden leadership decided to move the collection to the Boyce Thompson Arboretum. The project has been in full swing for over a year and completion of the project sometime next year will see a tremendous increase in the number and diversity of plants at the Arboretum. The additions will push the Arboretum into the top echelon of arboretums worldwide.

Many Arizona residents have come to love the existing cactus gardens, the Australian forest of towering Eucalyptus trees, and the fragrant varieties of the herb garden which are only a few of the many displays that can inspire, awe and encourage the plant enthusiast. I have been there many times and still come away with a greater appreciation for the desert-adapted plants that can enrich our landscapes and our lives.

If you go, take time to stroll through the collection of desert plants unique to the desert, where exotic species from around the world thrive alongside native Sonoran Desert plants. Short trails lead through the Sonoran and Chihuahuan desert areas, a cactus garden, several rich riparian areas, an Australian forest, and the herb and rose gardens. Even in the driest of winters, you almost always can find spring wildflowers at the Arboretum. In a winter when rains fall on a regular basis, such as this one, an impressive wildflower season can result.

Boyce Thompson Arboretum. . . Continued on Page 8

BOYCE THOMPSON ARBORETUM. . . CONTINUED FROM PAGE 7

Several trails branch off from the first part of the Main Trail, so you don't have to walk far to see the highlights, and much of the trail system is wheelchair-accessible. The Curandero/Sonoran Desert Trail showcases traditional herbal medicines of the Sonoran Desert. Curanderos are traditional healers in Mexico.

The historic Smith building, a short walk down the main trail, contains botanical exhibits and displays; and two display greenhouses feature cacti and other succulents that might not otherwise survive winter cold at the park's 2,400-foot elevation. The Smith Interpretive Center, between the display greenhouses, has exhibits on plants and the natural history of this corner of Arizona.

Many people get new landscaping ideas from the 2.5 acre Demonstration Garden. It shows various plants in the context of a functional landscape, complete with patios, walls, shade structures, vine arbors, walkways, and rockwork. Interpretive signs help guide the homeowner through the processes of site analysis, basic design and plant selection, while introducing important concepts such as water harvesting, the mini-oasis and the challenges of salinity.

Forming a scenic backdrop and towering over the property at an elevation of 4,400 feet is nearby Picketpost Mountain. While there is no public access from the arboretum trails, there is information available at the park about this historic area.

More than 200 species of birds and 72 terrestrial animals have been seen about the grounds. Ayer Lake, and Queen Creek on the Main Trail, are good places to watch for wildlife; and you may even see endangered species such as the Gila topminnow and desert pupfish. If you are into wildlife, the Arboretum is a place you must visit.

If there is a low traffic area in your yard that needs a little extra pizzazz to give it the right look, consider planting a desert-adapted succulent, tree or shrub to give it that finished look. The Boyce Thompson Arboretum plant sale is a good place to find just what you need.

If you have questions about this newsletter, have any plant related problems, or wish to have a publication sent to you, please call (520) 836-5221 x204 or (520) 374-6263 and leave a message. If you have a plant problem and are able to email a picture, please send a picture with any information you can provide about the plant and your contact information to our diagnostic team at macmastergardener@gmail.com and a Master Gardener will contact you.

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Richard D. Gibson

Emeritus

RDG/te/aw

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