



# Pinal County Cooperative Extension Garden & Landscape Newsletter October 2008



## SUSTAINABLE, DROUGHT-RESISTANT LANDSCAPES

Southern Arizona is in the midst of a multi-year drought and, at this time, there appears to be no end in sight.

Drought in the desert is no laughing matter. Now, across the country and around the world, water managers are beginning to predict serious water shortages as increasing demand for water comes in confrontation with the actual supplies that are falling from the skies. Barry Nelson, a senior policy analyst with the Natural Resources Defense Council, recently said, "The last century was the century of water engineering. The next century is going to have to be the century of water efficiency." While a century is a long time for many of us to comprehend, the current drought here at home and across the country is enough to tell us that conservation is a good thing.

Water has always played a key role in determining what does and what does not live in the desert. Even from the earliest days, water has supported, stretched and limited all living things. Now, enveloped in this long term drought, many realize that it is essential that we work together diligently to protect our supplies of this critical resource. Because of this increasing awareness, many people are choosing to move towards sustainable, drought-resistant landscapes.

The term "sustainable" has become common today. We speak of sustainable development, sustainable agriculture, sustainable communities and sustainable businesses, just to name a few. In

almost every case, sustainable refers to the ability of a concept, effort or object to endure over time in a relatively stable, environmentally safe manner.

When we talk of sustainable landscapes, what we are really saying is that we expect those plants to thrive with little or no extra water, fertilizer or care. Just as we do not worry about the survival of our native plants under normal desert conditions; in sustainable desert landscapes we seek to enjoy an outdoor living area filled with plants that require little or no extra care. If a sustainable, drought-resistant landscape interests you, let's take a moment to review the basic concepts that govern their successful installation and management.

Foremost of importance is plant variety selection. Native plants common to our area like the honey mesquite, creosote bush, foothills palo verde and the stately saguaro will, with a little rainfall, need little or no water once established and can do quite well in most local soils. In drought situations, some irrigation may be necessary.

Of course it is possible to create a successful desert landscape with non-native species, but some have higher water requirements than native plants and their needs must be factored in. Before adding any plants to your shopping list, it is important to know their water use requirement and have a plan to meet those needs if they exceed the local rainfall average, especially in these times of drought.

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## NUTSEDGE CONTROL IN LAWNS

Both purple and yellow nutsedge are considered to be two of the top ten “world’s worst weeds” and each can become pests in lawns, gardens and commercial fields.

Although nutsedge causes huge problems in farm crops each year, it can also be a tough weedy pest in flower beds, vegetable gardens and lawns. It is easy to identify nutsedge in turf, because just one day after mowing, nutsedge usually will stand taller than the turf grass, giving the lawn an unkept appearance.

In Arizona, there are just two species of nutsedge: purple nutsedge, *Cyperus rotundus*, and yellow nutsedge, *Cyperus esculentus*. Yellow nutsedge, at maturity, tends to be somewhat taller than purple nutsedge and has clusters of leaves near the base of the plant which are often longer than the flower stem, while the leaves of purple nutsedge are about the same length as the stem. The seed heads of yellow nutsedge are colored yellow to golden brown while those of purple nutsedge are dark brown to purple.

Both species are extremely competitive with other plants for nutrients, sunlight and growing space. The struggle for survival can be so keen that garden plants, in the face of heavy nutsedge infestations, may be seriously stunted or even die from the competition.

Nutsedge species do produce seeds, but these usually do not produce new plants in Arizona. Both species, however vigorously propagate from underground storage structures, called tubers. These tubers, or “nutlets” as they are sometimes called, are the organ for food storage in the plant. These tubers are also the source of new underground stems, called rhizomes, which produce the new plants in the spring. A healthy tuber can send five to six rhizomes to the soil surface in the spring, each of which can produce a new healthy plant. In addition, these new plants also send out underground runners which, in turn, establish more new plants. Soon, where once there was only one plant, an entire community of nutsedge will be in place.

The two species are not equally distributed in the state. While yellow nutsedge tends to be more prevalent in cooler climates and purple nutsedge tends to be more common in the hot deserts, both species are found throughout most of Arizona.

Purple nutsedge occurs mainly at elevations between 100 and 4,000 feet. Yellow nutsedge can be found at elevations up to 8,200 feet.

Nutsedge plants look a lot like, and are sometimes mistaken for, a weedy grass, but they are actually a sedge. Closely related to grasses, they can be quite difficult to control.

Sedges can be distinguished from grasses by the shape of their stems. Sedges always have triangular-shaped stems, while the stems of grasses are always round. To tell the difference quickly, twirl the stem of the weed between your index finger and your thumb. If the stem turns easily and no ridges can be felt, it is a grass. If the stem turns with difficulty and ridges are evident, it probably is a sedge.

Nutsedge is difficult to eradicate because of the way it grows. It is a perennial, meaning that it lives from year to year, and perennials are usually more difficult to control than plants that germinate, grow, produce seed and die in one year. One reason for this is that perennials can store and draw from food resources in the underground parts of the plant. Nutsedge is one of these. To eradicate nutsedge successfully, not only must the foliage of the plant be killed, but also the underground storage tubers.

Another key to nutsedge control is to know when it is most susceptible. Since nutsedge is a warm season perennial that begins growth early in the spring, the best time to attack it is when it is in an active growing state. This will be the period when it can absorb weed control products, transfer it to the underground tubers and give it time to kill the various parts of the plant.

The following herbicide products are referred to by their active ingredient name. The reason for using this name is dollars savings to you, the consumer. Each pesticide product that is sold is usually best known by its trade name, the name in big letters on the front of the container, but the chemistry that does the work, the active ingredient, is a better name to work from when selecting a pesticide product because price comparisons between products with equal chemistry can often provide fairly significant savings.

A manufacturer selling a specific trade name will charge a set price for the product. Another supplier may package the same active ingredient in the

## BROWN DOG TICKS

Brown dog ticks can be a troublesome pest for dog owners, not only because they sap the vitality and energy of pets, but also because they can carry disease.

Eight-legged creatures that attach themselves to dogs to feed on their blood, ticks can be a tremendous nuisance in, and out, of the home. Even though they rarely bite humans, preferring almost exclusively to feed on dogs, no one wants to share their home or their yards with these animals.

Female brown dog ticks lay large masses of eggs in protected places, such as behind a wall picture if they are inside the house. The seed ticks, ticks that hatch from the eggs, seek out an available dog for a meal. After feeding they leave the dog for a short time. This rest period gives them time to digest the meal and molt to the next size. The cycle is repeated one more time. The next molt produces an adult that is ready to reproduce.

The female adult brown dog tick attaches to a host, mates, and then proceeds to engorge itself with a huge blood meal. This meal is so large that the body becomes swollen beyond what seems possible. As the eggs in the ovaries mature, they change color from brown to dark purple, a result of the blood meal.

The female deposits the eggs in one big group, after which she dies. One batch of eggs, if ignored, can result in a tremendous number of new seed ticks from which the life cycle can begin anew. The offspring of one pair of ticks can create an intolerable infestation in a short period of time.

Because the tick comes in so many different forms, people have a difficult time recognizing this species. The small hatchlings are hardly as large as the head of a pin, but get larger when they feed. Adults start out a little less than a quarter-inch long but the females swell to more than half an inch when they take on a full meal and start maturing their eggs. The best way to identify a brown tick is to look at the color. These ticks are generally brown, but the swollen female shows mostly dark purple from the blood in her extensive digestive tract.

Since dogs are social animals, they come in contact with other dogs frequently or may lay down in an area where an infested dog may have previously been. The opportunity to pick up ticks is as endless as the places dogs go.

The best and easiest solution to solving brown dog

tick problems is to avoid them completely. Unfortunately, this is rarely possible. If, or more likely when your dog shows up with a healthy supply of ticks, there are a number of things that can be done.

First, keep the lawn well mowed and free of debris in or under which ticks may hide. Outdoor areas can be treated with a standard garden insecticide to keep the pest populations down. This can be done either by the dog owner or by a pest control operator. In either case, be sure to dust or spray lower portions of trees, shrubs and around the base of walls and fences; places where ticks tend to hide. If there is no place for them to hide, it is much easier to keep outdoor, off-host populations under control.

Next, check your pets regularly and remove any ticks as soon as they are found. Do not let them complete their life cycle on the dog or the problem will only get worse. Ticks can be removed with a tweezer. Place the tips of the tweezer as close to the site of attachment as possible and pull gently on the tick until it releases. Destroy the tick immediately so that it has no chance to escape.

Extra heavy populations of ticks on an animal can rapidly drain a dog of energy. Dogs with heavy populations may need to be treated with a standard pet pest insecticide obtained from a pet store or through a veterinarian. Ticks are not just disgusting to look at, they can cause serious problems for pets.

It is important to remember to treat all of the areas accessible to the dog at the same time. This means that all outdoor living areas; the inside of the home, if the dog is allowed indoors; and the dog itself. If this is not done, the animal will quickly become re-infested from the non-treated areas.

If the ticks are inside the home, different options exist. To treat indoors, apply a residual insecticide, especially formulated for indoor use, to baseboards, cracks and crevices where these ticks may be hiding. A residual insecticide will kill the larvae as they crawl over the deposit after hatching, and the nymphs and adults as they move from their hiding places in search of a host.

When a heavy infestation is present, it is advisable to move furniture and to vacuum up visible ticks. Subsequently, sprays should be applied to areas frequented by the dog, paying particular attention to baseboards, the dog's sleeping quarters, doorways, window casings and under rugs.

## GROWING YOUR OWN VEGETABLE GARDENS CAN BE REWARDING

The planting window for fall gardens is fast slipping away and many have not yet planted their vegetable gardens. It is not too late.

A few weeks ago, we discussed some really good reasons for growing fall, spring and summer gardens. We agreed that fruits and vegetables straight from the garden taste much better than produce that has been sitting in refrigerated boxes or placed on a grocery shelf for a period of time. We also discussed the increased nutritional value of fresh produce by mentioning the fact that vitamins and minerals begin to degrade as soon as produce is harvested. The fresher the produce, the higher its nutritional value.

Home grown produce provides many positive benefits. Not only is it tasty and nutritious, you also know how it was grown and treated after harvest. Plus, growing part of our own food supply gives us reassurance that we could get by if there were, for one reason or other, a breakdown in the food supply.

As far fetched as it might seem, there is always the possibility that a crop failure could occur from drought or plant disease. Transportation of food from the growing areas to supermarkets could be interrupted by cost of fuel or damage to the highway infrastructure. The US Department of Agriculture is well aware of, and continually planning for, bioterrorism. While all of these events are not likely, they are not unheard of. A home garden, like the victory gardens of World War II, are a buffer against a weird and wacky world.

For these and other reasons, I believe that it is always a good idea to have a home grown vegetable garden. A garden does not have to be big and elaborate. It can be as simple as a planter box outside the back door. It can be in raised beds or planted directly into the native soil. In my opinion, everyone should be growing something, just for the fun of it. So drag out the gardening tools, pick your style and your spot and let's go to work! Let me share a few tips that you might find helpful.

Soil preparation is critical to enjoying success in the garden. Before planting, the soil should first be well tilled with a mechanical tiller, or by spading. Make sure that all of the clods are broken up and that the soil is leveled to allow irrigation water to flow evenly between the plants.

A heavy application of compost or decomposed steer manure during soil preparation will improve water penetration, soften the soil and reduce the number of clods that have to be dealt with later on. It is also a good idea to add one half pound of ammonium phosphate (16-20-0) fertilizer before tilling the soil to ensure plenty of nutrients for the tender young plants once they begin to grow.

It is essential that germinating seeds and young seedlings not be stressed for water during their early stages of growth. Regular, light irrigations with a misting hose attachment or with a sprinkler will apply water uniformly to the garden without washing out the seeds. Later it will be important that the entire root zone of established plants be flushed with sufficient water to dissolve the salts so prevalent in our desert soils to flush them down below the root zone. For most garden plants this should be between eighteen and twenty-four inches. Irrigate frequently enough to keep the plants fresh, but not so frequently that the soil stays sloppy wet all the time. The roots need oxygen from the air as much as they need water.

If you are wanting to save water and minimize your water bill, plan on using tried and proven drip irrigation technology. Most garden stores carry the parts needed to install a good drip irrigation system and can provide the knowhow so that you can do the work yourself.

All plants should be planted following the instructions on the seed packets. Many vegetable and flower plants have different planting depths. Placing seed at the correct depth is critical to the success of all gardens.

Insect and weed pressures can be a problem during the fall garden season. Aphids and other piercing-sucking insects can be a problem. Make sure that you check your garden plants often for these pests and either wash them off with a strong stream of water or treat them with a garden insecticide. Do not use a systemic insecticide, one that is absorbed into the plant, on edible plants. You really do not want to be eating the stuff yourself, but systemic insecticides are excellent in controlling aphids on ornamental plants, like flowers.

You will need to also remove any weed seedlings early on. Do not let them hang around for long

## —DROUGHT RESISTANT PLANTS, Continued from Page 1

Another consideration in plant selection is to decide what kind of landscape “look” that you would like to achieve. By selecting specific combinations of plants it is possible to achieve four different landscape styles. The selection of plants common to the Sonoran desert, such as saguaro, cat claw Acacia, palo verde, and jojoba will give a decidedly different look than if plants common to the Mediterranean area are selected. Common Mediterranean plants include Aleppo pine, sissoo, desert Hibiscus and the sterile, non-allergenic “Swan Hill” olive. Selecting plants such as the desert willow, mesquite, shoestring Acacia and the red bird-of-paradise will provide a greater Southwestern flavor while plants native to Northern Mexico give a Tropical Mexico, South-of-the-Border feel. Plants from the latter list include the orchid tree, jacaranda, Mexican fan palm and bougainvillea. When planting a desert landscape, there is definitely a choice that should meet your needs. If you would like a complete list of plants from these different areas, please come by the extension office for a free copy.

All desert plants have inside of them some mechanism, some way, to survive periods of below average rainfall. Some, such as the ocotillo, lose their leaves until the rains resume. Many protect themselves by shutting down active growth and development and rest until conditions improve. The creosote bush, for example, will look yellowish, thin and spindly during times of drought but become lush and dark green during times of plentiful water.

One rule of managing sustainable desert landscapes, then, is to learn to tolerate plants that may not look their best during times of drought with the full expectation that they will eventually return to their normal, vibrant selves when rains return. Of course, there are also plants that cannot survive without at least some additional water. These will need to be efficiently irrigated to keep them alive.

Yes, I know that Arizona native plants and their desert-adapted cousins should be able to survive times of extended drought fairly well, but there is always that breaking point beyond which a particular species will begin to suffer damage and eventual death. There are few plants that can go indefinitely without water. Even if you are planning a landscape filled with native plants, an irrigation system should be considered to effectively care for plants during times of stress. You won't run it often, but it could come in handy.

Desert-adapted plants, just like any other plant, must be planted correctly. There are new rules to follow. New research has shown that a majority of tree and shrub roots lie within the top two feet of soil and extend one and a half to four times the width of the crown, the aboveground portion of the plant. The best planting hole, then, is not deep, but wide; three to five times the diameter of the root ball, but only as deep as the plant is located within the container.

Do not mix in any organic matter or other amendments into the soil because desert plants do not need it. If compost or forest mulch is available, a layer of decomposed organic matter can be layered on the surface of the soil after planting to help slow water evaporation from the soil and to help keep the roots cool. Do not forget to water the plant during back filling to prevent the formation of harmful air pockets within the root zone and to make sure that all of the roots do not dry out during planting.

Correct plant selection, proper planning for irrigation needs and good planting habits will help you install and manage an effective, sustainable, drought-resistant landscape that will leave you completely satisfied that you are doing your best to conserve water and still have the type of landscape that will bring joy and value to your outdoor living space.

Trade names used in this publication are for identification only and do not imply endorsement of products named or criticism of similar products not mentioned.

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## —NUTSEDGE, Continued from Page 2

same concentration under a different trade name and charge a different price for the same product. By checking the active ingredient label for the chemical name and concentration, it is possible to shop around for the best price.

When fighting nutsedge in flower beds and vegetable gardens, the best and least expensive herbicide choice would probably be glyphosate. Glyphosate is an active ingredient of many garden weed killers and works well when only unwanted weeds are present because it works as a nonselective herbicide. Being nonselective, it kills any plant that is green.

In lawns, however, a nonselective herbicide would not be a good choice. Not only will a nonselective herbicide kill the weed, but it will also kill the lawn. In this situation, a selective herbicide is needed. Fortunately, there are several herbicides that will take nutsedge selectively out of turf grasses without harming the grass.

Halosulfuron is a good choice for nutsedge control in lawns because it is safe on all turf grasses, and works well on both purple and yellow nutsedge. There is a new label for halosulfuron which allows three full applications at the full rate each year. Previously, fewer applications were allowed.

Another choice would be imazaquin. This active ingredient provides much better control on purple nutsedge than it does on yellow nutsedge. It is safe on Bermudagrass only, however. If it is used on ryegrass or fescue grass, it will turn the grass yellow and slow its growth. In severe cases, it can kill the turf grass outright. If this mixture also contains MSMA, a mixture that can also be purchased off the shelves, it provides much better control of nutsedge.

Another choice contains the active ingredients of 2,4-D and carfentrazone. Carfentrazone is good for both yellow and purple nutsedge control.

New chemistry is on the horizon for nutsedge weed control in lawns. Sulfentrazone and trifloxysulfuron are two active ingredients that are not yet on the shelves but may soon be on the shelves to help carry out our war with the world's worst weeds.

Species of nutsedge truly are world class weeds because they are so difficult to control. By carefully using the proper tools, depending upon the place and level of infestation, nutsedge weeds can be controlled, if not eliminated, from area gardens and landscapes.

## —TICKS, Continued from Page 3

For wall-to-wall carpeting, a one-foot barrier of insecticide should be applied on the carpet next to the wall around the entire room. It is not necessary to lift the carpeting, as any tick below the carpeting or in the walls will have to cross this barrier in order to find a host. It may be necessary to treat the furniture, especially couches and overstuffed chairs, if the dog is allowed to lay on them. Remove cushions and treat all crevices and seams.

For effective tick control, all treatments may have to be regularly repeated for several months if inspection shows a re-infestation of the dog or its living quarters. Because the ticks, especially in their early life stages, are so small, one treatment cycle may not be sufficient to eradicate pest populations.

While no tick infestation is fun, either for the dog or its owner, pest populations can be kept under control for a happy, healthy and peaceful pet-owner relationship.

## —VEGETABLES, Continued from Page 4

because they will end up stealing the water and nutrients from your garden plants. When they are small, at the seedling stage, they are easy to pull up by the roots or cut with a hoe or knife. Herbicides will not work well in vegetable gardens because most, like glyphosate, is broad spectrum, meaning that it will kill any plant that is green, the good and the bad. A hoe, knife or fingers are the best way to control weeds in the garden.

The fall is also a great time to plant trees and shrubs. The high temperatures of summer can cause a young plant to give off more water through the leaves than the young roots can provide. This effect often throws the plant out of balance and leads to a condition known as "transplant shock". Once the summer heat starts to melt away to the up and down temperatures of September and October, however, trees and shrubs in containers can usually be planted with good success.

A major benefit to planting trees and shrubs during the fall growing season is the chance the additional time they have to establish a good root system before the winter dormancy period. Then, in the spring, the plants still have plenty of time to continue root and top growth before the onset of the hot, dry temperatures of early summer.

If a plant is to survive the difficult climatic challenges of June, it will be because there is a root system sufficiently large enough to provide water and nutrients during that stressful time. A root system that is too small will not be able to provide sufficient water to prevent damage or death to the young plant.

Gardening does not have to be backbreaking or painstaking. With proper care and good timing, fresh, homegrown vegetables can provide a healthy addition to the dinner table. Most perceived obstacles can be easily overcome with a little know how, and, it is possible to work smarter, not harder. This will translate into fun for all ages. So, come on! Even if it is just one seed in one pot, let's plant a fall garden today!

If you have questions, you can reach one of the Master Gardeners at the Cooperative Extension office, 820 E. Cottonwood Lane, Building C, in Casa Grande. The telephone is (520) 836-5221. The author's email address is [gibsonrd@ag.arizona.edu](mailto:gibsonrd@ag.arizona.edu)

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