



# Pinal County Cooperative Extension Garden & Landscape Newsletter August 2007



## TIME TO PREPARE FALL GARDENS

August is an exciting time for home gardeners because now is the time to start planting fall vegetables and flowers!

I know, I know. You who have been following this space for the past few years will recognize this as a well worn topic, but I just can't help it. It is all too exciting. A new gardening year is upon us!

In other parts of the country where frosts and freezes often come in September and October, fall spells the end of the garden season. Indian summer is a time to store the garden tools, coil the hoses, and button down the garden in preparation for the winter snows.

In the lower elevations of Pinal County, the first killing frost is usually sometime in mid- to late November, or occasionally even later. In addition, winter temperatures rarely go much below 26–28 degrees F., even on the coldest nights, so many plants grow and bloom right on through the cold weather. In other parts of the country, the fall is the end of the gardening season; in the desert, it is the beginning.

I will admit that the bulk of winter vegetables and most winter flowers should be planted during the months of September through November, but mid-August is the undisputed time for planting heat-loving squash, melons, sweet corn, cauliflower, and broccoli. The early planting date gives them plenty of time to mature a crop before the cold weather and frosts of November and December arrive.

So, where do we start? Hopefully you have already turned over the soil with a shovel or garden fork and thrown in a hefty supply of compost for good measure. If not, don't be sitting there reading this article. Let's get on with it!

Once you have a loose, well-aerated seed bed with a reliable supply of irrigation water nearby, go ahead and plant your seeds according to the directions on the package. Proper planting depth is critical and the seed package should provide you with that information.

With your early garden in, you will have plenty of time to get ready for the second half of the fall planting window, which begins September 15<sup>th</sup>. Vegetables that can be planted then include the leafy vegetables, like leaf and head lettuce, spinach, collards, and turnips for both greens and roots. It will also be a time to plant the root crops such as

radishes, carrots, and turnips. Hold off, though, on planting potatoes until December because they need the moderate temperatures of spring to mature.

Sweet corn can be planted up to mid-September, but any later, there won't be much chance of getting a crop off. Most varieties of sweet corn take between 60–90 days from planting to harvest. Sweet corn planted in mid-September can be ready to eat sometime between mid-November and mid-December. The super sweet varieties such as "Sweetie 82" have proven to be very popular in our area because of their great taste and sweetness.

Fall flowers include petunias, sweet peas, geraniums, sweet alyssum, and a whole host of other colorful annuals. Make sure to get rid of the Bermuda grass and other weeds from the flower bed before planting because there is still enough warm weather to make these weeds a problem.

Soil preparation is critical to enjoying success in the garden. Before planting, the soil should first be well tilled by using either a spade or a mechanical tiller. Make sure that all of the clods are broken up and that the soil is leveled to allow irrigation water to flow evenly through 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 dealt with later on. It is also a good idea to add one half pound of ammonium phosphate (21-0-0) fertilizer before tilling the soil to ensure plenty of nutrients for the tender young plants once they begin to grow.

—Time to Prepare Fall Gardens, Page 3

IN THIS ISSUE:	
TIME TO PREPARE FALL GARDENS	1
DIAGNOSING TURF PROBLEMS	2
WATER HARVESTING	4
WINGED HARVESTER ANTS	5

# DIAGNOSING TURF PROBLEMS

I have had some calls recently about lawn spotting and decline, so let's revisit the basics of lawn health.

Insects, fungi, bacteria, and soil problems can all cause the decline and death of turf grasses. But because the visual symptoms they cause can be so similar, diagnosing and treating these turf problems correctly are not always easy.

Brown Patch, Damping Off, Melting Out, and Greasy Spot are names of turf diseases caused by various fungi. False Chinch Bugs in large numbers can lead to a general decline as they suck water and nutrients from the plants. Caliche, compacted soil, or alkali concentrations slow down or stop the penetration of water into the soil and cause conditions within the root zone that can lead to disease.

Because the early signs of each of these problems are so similar, it is sometimes quite impossible to make a definitive diagnosis without resorting to laboratory assistance. Even the most experienced of turf professionals find diagnosis difficult. Although laboratory diagnosis is the most accurate means of determining the identity of disease agents, the length of time that it takes to run an analysis, up to 10–14 days in some cases, may cause a delay in treatment that can allow the disease to spread and become much worse.

When time is critical, there are a few quick tests that can be done on site that will often provide enough information to make quick, accurate management decisions. Still, if possible, laboratory confirmation is always a good idea just in case more information is needed.

To diagnose turf problems in the field, keep handy a screwdriver or other tool that can be used as a soil probe, a plastic, resealable bag for each sample, a shovel, a small pocket knife, and a hand lens of at least 10X magnification. The screwdriver or probe should be at least 14 inches long, and the plastic bag should be large enough to hold an intact soil sample the size of the shovel blade.

The first step in diagnosing a turf problem is to locate the healthy and diseased areas in the turf. Obviously, it will not be hard to tell the difference between green spots and brown spots in the lawn, but it is important to look for patterns. Are the spots close together or are they widely dispersed? Are the spots

fairly round and spreading, which might be caused from a point of infection that is moving outward, or is the diseased area fairly widespread throughout the lawn and not spreading, which might indicate a soil problem? Answers to these and other questions can provide valuable hints.

Find the healthiest location in the yard; that will be the spot with the darkest, most uniform green color and the most lush and thickest canopy. Use the long screwdriver or other probe to test the soil in this healthy area first by pushing the tool firmly into the soil. Where the soil is moist and the entire root system is well irrigated, the probe will slide into the soil easily, stopping only when it reaches dry soil. At this point, it will become very difficult to push the tool further into the soil.

When the probe stops sliding easily into the soil, place your fingers on the barrel of the tool at the soil level and pull out the probe. The distance between the tip of the tool and your fingers becomes the effective wetted zone of the soil. Most turf grasses prefer at least 12 inches of good rooting area but 18–24 inches is desirable. Less than 12 inches of good root area usually leads to dry spots in the lawn. In healthy lawns where the grass is dark green and lush, a probe will slide easily and deeply into the soil.

Next move to a dry, dead, or dying spot in the lawn and repeat the test. If the tool shows a wet soil of less than 12 inches, the lawn problem is probably caused by poor water penetration, a problem with sprinkler coverage, or a hard layer in the soil. In this case, the best solution is to drag a hose and flood the area carefully to deeply irrigate the location. If a hard pan is suspected, use a water pick on the end of the hose or a soil auger to drill holes down through the soil profile to loosen the soil and provide a channel for water to penetrate deeply into the soil.

If the probe test in a dead area shows no difference in the depth of water penetration, that is, if the probe slides just as easily and deeply into the soil in dead areas as it did in the healthy area, take a shovel slice of soil from the edge of the dead or dying area so that the sample has both green and diseased plants and place it in the zip-top bag. Place the sealed bag and soil sample in a warm, sunny area and watch for insects to begin leaving the sample and climbing on the inside of the bag. False Chinch Bugs in fairly large numbers could be causing the problem. Solve

## TIME TO PREPARE FALL GARDENS

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Continued from Page 1

It is essential that germinating seeds and young seedlings not be stressed for water during the warm days. Regular, light irrigations with a misting hose attachment or with a sprinkler will apply water uniformly to the garden without washing out the seeds.

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

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 yield to the up-and-down temperatures of September and October, however, potted trees and shrubs can be planted with good success. The gradually decreasing temperatures reduce the water demand by the tree and allow the roots to develop at the same rate as the top of the plant.

A major benefit to planting trees and shrubs during the fall growing season is the chance it gives them to establish a good root system before the winter dormancy period. Then in the spring, the plants have the additional 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 difficult 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.

You can get ready for the fall tree and shrub planting window by deciding now where you want to place your new plants and then by preparing the holes early. Dig a little at a time early in the morning to avoid overheating and overworking your muscles. Then, once the hole is completed, test the drainage by filling the hole with water.

Drainage is essential because a waterlogged soil can lead to plant health problems. If the hole drains within 30 minutes to an hour, the drainage should be adequate. But if it takes longer, dig a little deeper to see if you have a caliche layer or other constricting problem. For the proper size and configuration of planting holes, contact us for the brochures that will guide you in that process.

With proper care and good timing, vegetable and flower gardens can provide both food and color for the coming outdoor season.

## DIAGNOSING TURF PROBLEMS

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Continued from Page 2

False Chinch Bug problems by applying a liquid malathion spray to the surface of the grass.

If no insects are seen leaving the sample, use the hand lens and pocket knife to carefully dissect the turf sample just under the surface of the soil. In this case you are looking for the small (less than one-eighth in diameter), round, whitish bodies of the ground pearl scale insect. These insects can cause a turf, particularly hybrid Bermuda grass, to quickly turn brown in the summer. In sufficient numbers, they can cause severe problems. If they are there, they should be easy to spot. Other lawn insect pests such as white grubs, sod webworms, and billbugs are quite large and easy to spot either inside the bag or in the turf sample. A granular insecticide is best for soil-inhabiting insects.

If no insect pests are readily seen, it is fairly safe to assume that the problem is caused by a disease-causing fungus. Choose a wide-spectrum fungicide such as benomyl or chlorothalonil for disease control.

In all cases, lawn problems can be minimized by good irrigation, good aeration, and good fertilization techniques.

A healthy lawn takes time and careful attention in order to maintain its vigor. By applying a few simple procedures and carefully thinking through the various possibilities that might be causing dead and dying spots to occur, many lawn problems can be diagnosed and treated without having to wait for the results of a formal diagnosis procedure.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, James A. Christenson, Director, Cooperative Extension, College of Agriculture and Life Sciences, The University of Arizona.

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# WATER HARVESTING

While the monsoon rains fall, many people make good on the opportunity to capture and store storm water to irrigate garden and landscape plants.

For centuries, people have struggled to survive in water-scarce environments. In so doing, unique systems have been devised to manage those limited water resources. One strategy has been to capture and concentrate rainfall to irrigate crops or to supply water for people and animals. This practice, known as water harvesting, offers some excellent possibilities for the home landscape. Water is such a precious resource in the desert that those who live here are always looking for good ways to make every drop count.

Each year during the winter wet season and the summer monsoon, many gallons of water fall onto hard surfaces like roofs, carport driveways, and patios. A water catchment system to harvest this often wasted water is a good way to save money on the water bill. It also helps us be good stewards of a very precious resource.

The most important component of a rainfall harvesting system, of course, is rain. Desert environments are always short of this precious commodity and the drought cycles make it even more difficult. However, every little bit that can be captured can help keep plants healthy.

In Arizona, water harvesting for crop production is best suited in areas that receive more than 10 inches of rain annually and where summer temperatures do not exceed 100 degrees F. In Pinal County, annual rainfall averages between 8–12 inches, starting from the west side of the county and working east. Casa Grande averages 8.2 inches a year, Florence 9.8, and the San Pedro Valley between 10–12 depending upon the elevation.

Temperature is important to consider because evaporation is directly tied to how hot it gets during the day. The hotter the day, the faster water will evaporate from a surface. Closed storage systems help prevent evaporation losses while the water is being kept for future use.

The other major component of a water harvesting system is a series of hard surfaces coupled with a delivery system to bring the water to the root zones of landscape plants. In higher rainfall areas, the storage facility becomes even more important as it accumulates and protects the excess harvested water.

Water harvesting systems capture water in three principle ways: water-spreading systems, diversion/terrace systems, and micro-catchment systems. The first two probably do not apply to urban settings as they involve diverting water from desert washes and applying it to cropping areas. The early cultures of Arizona were masters at these techniques and used them to good advantage.

Residential water harvesting systems utilize variations of the micro-catchment system. The amount of water that can be collected depends upon the amount of rainfall received and the square footage of the catchment surface. There are many factors to be considered, including the influence of wind on how the rain falls and the pitch of a roof, but a good rule of thumb is to expect about 0.623 gallons of water per square foot of hard surface during a one-inch rain.

Using this conversion factor, a flat roof 1,000 feet square could collect 623 gallons of rain water during a rainfall event of one inch. This would be enough to irrigate a line of plants along a well prepared drainage channel in a desert landscape. If a drip irrigation system with a good filter and a gravity pressure system were available, it could irrigate a larger area.

A typical residential water harvesting system uses several different types of hard surfaces to collect or channel rainwater. Roof tops, garage roofs, driveways and carports, sidewalks, tennis courts or other play surfaces, and the ground surface itself can all be used.

Rainfall that is captured from roof tops can be concentrated with eave gutters and down spouts before being diverted to garden or storage areas. If the storage tank is at a high point on the property, a manual outlet valve could be opened to drain water by gravity flow, but if this is not possible a small sump pump will help deliver water to where it is needed.

Another benefit of roof top water harvesting is the cleanliness of the water. Roofs are usually fairly free of sand and other debris that could clog emitters in drip irrigation systems. The water coming from the roof should be checked, however, to make sure that it has not picked up anything that could damage the system. If so, the water will probably require just a minimum of filtering before it is used.

Surfaces at ground level can be constructed so that water can be directed to appropriate locations

# WINGED HARVESTER ANTS

So far this year, I haven't received that one special telephone call that tells me the monsoon season is for real; but it could come at any time.

The telephone call, with a somewhat panicky voice at the other end, will usually go something like this. "My house (door, car, shed) is covered with flying ants? What shall I do?" In case you are the one that ends up with this unnerving experience, let's talk just a little bit about ants and their habits.

With the arrival of the summer rainy season, strange things start to happen in the dens of the usually quiet, hard-working harvester ant. Some of the workers grow wings and start flying about. If you have ever seen this happen, you will have truly experienced one of the wonders of the animal world.

Harvester ants are the large red, black, or brown ants that so commonly set up housekeeping in the soil throughout the area. They are about three-eighths of an inch long and they have a painful sting that immediately gets one's attention. They are so common and the sting so painful, that most people have learned to give them a wide berth and leave them alone.

Unfortunately, they seem to have a knack for building their dens in the most inconvenient spots. Dens located in the children's playground, under a clothesline, or next to an entrance of the home make them a nuisance and a hazard that most of us simply will not tolerate.

To make matters worse, during the rainy season, all of a sudden, these ants grow wings and begin to fly about, oftentimes settling on homes or other structures and placing themselves in direct conflict with our everyday activities. It is not uncommon for the flying ants to cover doors, walls or roofs of houses, or fill up tree canopies where they seem to delight in falling off of the leaves onto anything, or anyone, underneath. For those that have this experience, it can get interesting fast.

When dealing with flying harvester ants, the first step is to calmly relax and remember that this is all normal. It is part of nature and it is part of the natural life cycle of these insects. The next step is to realize that it is also temporary. It will not be a permanent situation.

Like honeybees, harvester ants take advantage of the rainy season to split up their colonies. They staff

each new group with a queen and a large number of workers and send them out to start a den of their own. It is this natural process of dispersal that allows these animals to keep their species alive.

The increasing humidity from the rains seems to trigger the winged response, and worker ants that are destined to be part of the new colony grow wings and prepare themselves to follow their queen. As the new colony leaves the old home, they travel in a group until they find a suitable new location and begin to create the den. Once they have established their new home, the ants shed the wings and return to their normal, ground-based, work-oriented schedule.

Sometimes when the colony is on the move, it will stop at a convenient spot and take a rest. It may also take the opportunity to send out scouts to look for a new building site. It generally is at this time that we see a large mass or accumulation of these flying ants, and the experience for some can be unnerving.

One reason for our worry is because we know how painful the stings can be. Another reason is that there are so many of them, they seem to be everywhere, and they seem to be agitated as they move quickly around.

In the highly unlikely event that one of these colonies chooses your property to take a rest, again, remember to take a deep breath and relax. Remember that it is a vulnerable time for these ants and they are driven to find that new home and get moved in. So many things can go wrong while they are exposed and they sense that they are at risk. Given a little time, they will get things worked out.

What can we do to protect ourselves. First, be aware. Watch for winged ants and if you do see them, make sure that pets are protected and that people are forewarned. A swarm of harvester ants will usually remain exposed and resting for not more than 24-48 hours before they disappear.

Second, remember that these colonies want to get established and back to normal as bad as we want them to. If you have a colony appear close by, just ignore them and wait for them to do their thing. Once they have established a nest, and if it happens to be in one of those areas where they cannot be tolerated, treat the nest with a common ant bait. It works very well and it is a lot safer environmentally than spraying the winged colony with insecticides that probably won't work anyway.

## WATER HARVESTING

Continued from Page 4

within the landscape, such as the beginning of a water channel or to the wells around trees and shrubs. The complexity of the system will be directed by the terrain and type of plants in the landscape.

Land surfaces can be shaped and contoured to encourage runoff during rainstorms. If the planting is some distance from the collection area, planning and careful engineering can take the captured water to the desired location.

Micro-catchment systems offer excellent possibilities to the home gardener, and variations allow a diverse range of applications depending upon the particular need of the location. Water catchment can be as simple or as complicated as the landscape requires, but good planning will always be a key to success when installing these systems.

Effective water harvesting concentrates rainwater runoff for use in irrigating landscape plants. Not only are they fun projects to occupy part of our gardening time but, once in place, we get the added benefit of seeing our landscape plants get watered automatically while we sit in our easy chairs and watch it rain.

## WINGED HARVESTER ANTS

Continued from Page 5

Third, check the weather stripping around doors and look for gaps in window seals or other possible places of entry where winged ants in the exploring mood could get inside. Some people keep a roll of duct tape around for emergency, temporary sealing of possible entry ways.

Fourth, to easily be rid of ants that do get inside living spaces, use the vacuum cleaner. The insects are usually severely hurt or killed by their trip up the vacuum tubes, and vacuuming quickly and safely separates the animal from people.

Other insects also use the same monsoon period to divide up their colonies. Honeybees and termites are good examples. Although honeybee swarms are easy to identify, it is sometimes a little more difficult to tell the difference between flying ants and flying termites. Here are the key characteristics to separate the two species. Termites have relatively straight antennae, whereas ants have elbowed antennae. Termites have two pairs of wings, one set in front and one set in back that are almost equal length and twice the length of the body. Ants also have two pairs of wings but the forewings are much larger than the hind wings. The termite's abdomen is broadly joined to the thorax, whereas the waist of the ant is much narrower.

Although harvester ants can make a nuisance of themselves during the monsoon season, a little patience and a few simple self-preservation techniques on our part can help us through this potentially difficult time.

For more information on harvester ants or other animals that invade our living spaces, or wish to have a publication sent to you, please call one of our Master Gardeners at the Cooperative Extension office at (520) 836-5221 ext. 204 or visit 820 E. Cottonwood Lane, Building C, in Casa Grande. The author's email is [gibsonrd@ag.arizona.edu](mailto:gibsonrd@ag.arizona.edu).

If you wish to have this newsletter emailed to you, please send Theresa an email at [tellswor@ag.arizona.edu](mailto:tellswor@ag.arizona.edu) and include *G&L Newsletter* in the subject line. This newsletter is also now available to view on our website at: [www.cals.arizona.edu/pinal](http://www.cals.arizona.edu/pinal).

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Extension Agent, Agriculture

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MINOR CHANGES TO THE SADDLEBROOKE  
GARDEN & LANDSCAPE SHORT COURSE SCHEDULE

**SADDLEBROOKE G&L SHORT COURSE WILL BE HELD IN THE  
PRESERVE CLUB HOUSE  
INSTEAD OF THE MOUNTAIN VIEW CLUB HOUSE  
Originally scheduled to begin on Thursday, August 9, 2007  
has been changed to August 30, 2007  
from 9:30 am to 12:30 pm.**

**For more information or to sign up, please contact  
Hedy Grysza at (520) 818-3899**

**U OF A MARICOPA AGRICULTURE CENTER in Maricopa  
Thursday, August 16, 2007 6:30 pm to 9:30 p.m.**

**U OF A COOPERATIVE EXTENSION in Casa Grande  
Tuesday, August 28, 2007 6:30 p.m. to 9:30 p.m.**

**ROBSON RANCH, near Eloy  
Wednesday, January 9, 2008 9:30 am to 12:30 pm.**

**For more information or to sign up for Maricopa, Eloy or Casa Grande  
locations, please call Theresa at the U of A Cooperative Extension office at  
(520) 836-5221 ext 202 or toll free (866) 836-5221 ext 202.**

**MASTER GARDENER VOLUNTEER ADVANCED TRAINING IN SADDLEBROOKE  
PUBLIC WELCOME!**

**Advanced training for Master Gardener Volunteers is scheduled for the following dates  
below. All classes will be held at the Mountain View Club House in SaddleBrooke from  
1:00 pm to 4:00 pm. CLASSES ARE OPEN TO THE PUBLIC. For more information,  
please call 866-836-5221.**

<b>Tuesday, 08/14/07</b>	<b>"Bugs In Your Yard"</b>	<b>Gail Hughes</b>
<b>Tuesday, 09/11/07</b>	<b>"Winter Garden Vegetables"</b>	<b>Rick Gibson</b>
<b>Tuesday, 10/09/07</b>	<b>"Harvesting Rainwater"</b>	<b>Gail Hughes</b>
<b>Thursday, 11/08/07</b>	<b>TBA</b>	<b>TBA</b>