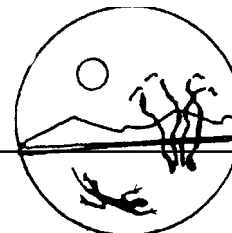


High on the Desert

Cochise County Master Gardener

Newsletter



The University of Arizona and U.S. Department of Agriculture cooperating.

What I've Learned About Irrigation— Have You Probed Your Garden Lately?

Watering plants is probably the most confusing issue facing the desert gardener. I was born and raised in the Pacific Northwest where, when, and how much to water was the least of our gardening concerns. I irrigated by a hand-held hose the first year in my garden desert. I lost a lot of plants but gained a new friend called drip irrigation. One would think that a hose would be great watering device—a garden hose delivers water at a rate of between 5-7 gallons per minute. Knowing that one gallon of water penetrates my soil structure at 10 inches then watering a plant for one minute should give it at least 50 inches of water—right? Unfortunately this is not the case. Watering the soil with a hose for one minute penetrates my soil to about 1½ inches.

Eventually, after a while, it will penetrate into the soil to the desired root depth but by then gallons and gallons of water have been wasted. And since I have over 250 plants in my garden I don't have the time or energy to water with a hose.

This brings us to **Xeriscape Principle #6** – 'Irrigate Efficiently.' Modern drip irrigation methods are the most efficient way to irrigate the landscape combined with the correct amount of water applied at the right time and at the right place—the root zone. Here are some words of advice—do not install your system during the heat of April through August. For one thing, EVERYBODY seems to be installing their drip systems during that time and you can be certain that irrigation part you need will be out of stock. Install the system now!

The most common question I am asked is how often and how long should the gardener water. Factors

affecting plant water requirements are plant type, plant maturity, soil type, season/climate, microclimate/exposure, and soil cover/mulch. The only way I know how to determine irrigation frequency (when it is time to water) and duration (how much water to apply) is to use a soil probe. A soil probe is a ¼ to 3/8 inch diameter metal rod that is at least three feet long with a pointed end. I prefer a soil probe that is four feet long so I can tell if I've over-watered. Probe the garden for one year and keep track of the results. You will become much more knowledgeable on how your garden behaves and with the results will be able to set up a tailored irrigation schedule to meet the needs of your plants.

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HOW TO DETERMINE WHEN IT IS TIME TO WATER:

1. Push the probe into the soil around the drip line of plants as deep as it will go.
2. The probe will stop when it hits dry soil.
3. Measure the depth the probe has penetrated. A good rule of thumb is it's time to re-irrigate when 1/3 to 1/2 of the root zone is dry:
 - Turf, groundcovers, vegetables, annuals – irrigate when probe depth is 4 - 6 inches
 - Perennial flowers and shrubs – irrigate when probe depth is 8 - 12 inches
 - Trees (and very large shrubs) – irrigate when probe depth is 12 - 18 inches

HOW TO DETERMINE WHEN ENOUGH WATER HAS BEEN APPLIED:

1. Push the probe into the soil and measure the depth the probe has penetrated. Apply water using your usual irrigation method for one hour.
2. Wait for 30 minutes after irrigation then push the soil probe into the soil.
3. Measure the depth the probe has penetrated. Subtract the before irrigation soil probe depth to arrive at the actual one hour irrigation penetration rate.
4. The proper irrigation depths for plants are:
 - Turf, groundcovers, vegetables, annuals – 12 inches
 - Perennial flowers and shrubs – 24 inches
 - Trees (and very large shrubs) – 36 inches
5. Once it has been determined how long it takes to wet the soil to the proper rooting depth, adjust the irrigation time, and water this same

duration every time irrigation is required.

I've kept a gardening calendar for the past four years and here are my observations regarding season/climate factors that affect my garden and the irrigation schedule:

April – June: Usually a windy, dry hot period – irrigation may increase.

July – September: The rainy season – irrigation may be reduced or stopped.

September – October: The summer rainy season ends. Watch plants for signs of wilt and resume irrigation as humidity disappears and causes the air and soil to dry out.

November – March: Winter rains usually supply sufficient moisture to sustain plants through the winter months unless it's unseasonably dry.

My tailored irrigation schedule for Zone 2 & 3 established (plants require an “establishment” period of regular watering for 1 to 3 years before they can be slowly weaned into the zone watering requirements) plants are:

- I always irrigate once around the last week of April/first week of May when our heat and hot, drying winds begin.

- Zone 2 plants may require one irrigation during mid-June depending on the weather. I watch plants for signs of stress.

- I always irrigate once around the last week of September/first week of October as our summer rains end and the heat and dry air saps the ground moisture quickly.

- If our winter rains (November, December, January) are poor I will irrigate once at the

end of January—especially the evergreen shrubs and trees.

- In Zone 2, if there are no early spring rains (January, February, March) I will irrigate the Penstemons and Salvias once so they will have a great blooming period for April and May.

- I always watch plants year-round for signs of water/drought-related stress and spot irrigate with a soaker hose when necessary.

I now know that in a “good” year with sufficient summer and winter rainfall five irrigations are needed and during a “poor” year the garden will require up to eight irrigations.

To take a look at the dizzying array of different types of irrigation systems available to homeowners point your web browser at www.ewing1.com

Next time: A Tale of Two Landscapes – what can be learned from their irrigation system design, soil penetration rates and plant selection.

*Cheri Melton
Master Gardener*

[Editors Note: The article in November 2000 Master Gardener Newsletter *Garden Basics: Popular Irrigation Systems* should have been attributed to Cheri Melton.]



Robert E. Call
Extension Agent, Horticulture
Carolyn Gruenhagen
Editor

Cuttings 'N' Clippings

◆ Cochise County Master Gardeners Association will hold their next meeting January 3, 2001 in the Mona Bishop Room of the Sierra Vista Library at 5:00 p.m. Mr. Mark Fredlake from the BLM will speak about the San Pedro Beaver Project.

◆ On January 6 from 9:00 to 11:00 a.m. a landscape tree pruning workshop will be held at the Sierra Vista Public Library Sara Gibbs Botanical Garden. This is a free workshop with certified arborist Deryl Smith from the Plant Sciences Center demonstrating how to assess the need for pruning, correct pruning techniques, and tool care. This workshop is part of a monthly Water Wise Workshop Series. For more information call the Water Wise Program at 458-8278, Ext. 2141.

◆ The Plant Sciences Center (PSC) needs baby food jars for seed storage. If you have any to recycle, please come to the PSC located between the University of Arizona South and Cochise College on Colombo in Sierra Vista. You

can leave them outside the PSC gate.

◆ Cochise County Master Gardeners donated a decorated live Christmas Tree to the Sierra Vista Regional Health Center's Foundation Fund Raiser held at the Mall

at Sierra Vista December 1 - 3. Thanks to Gwin Garcia (and Nick!), Helene Wingert, and Carolyn Gruenhagen for their efforts.

(continued on back page)

High on the Desert

The Cochise County Master Gardeners Association (CCMGA) is awarding up to five full scholarships to the 2001 High Desert Gardening & Landscaping Conference to be held at the Lakeside Activity Centre located on Ft. Huachuca, AZ, on February 15 and 16, 2001. Applicants are invited to submit an essay on one of the following topics:

- Gardening for food production
- Landscaping with native plants
- Environmental stewardship

Essays must meet the following criteria:

1. 750 to 1000 words in length.
2. Double spaced and typed on plain bond paper.
3. Represent original scholarship and be suitable for publication. All references and authorities cited must be properly attributed.
4. Entries must be accompanied by an official cover sheet obtainable from the Cooperative Extension Office at the University of Arizona South campus.
5. Entries must be received at the Cooperative Extension Office at the University of Arizona South campus not later than close of business on January 15, 2001.

Entries will be judged by the Cochise County Horticultural Extension Agent and a committee of Master Gardeners appointed by the President of CCMGA and the names of awardees announced not later than January 28, 2001.

High on the Desert

The 8th annual High Desert Gardening & Landscaping Conference is scheduled for February 15 & 16 at the Lakeside Activity Centre, Ft. Huachuca, AZ. Watch for registration forms in next month's newsletter and on our web site!
We hope to see YOU at the conference in 2001!!!

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Cuttings 'N' Clippings continued

- ◆ Remember Sierra Vista's Tree-cycle program. After the holidays the City of Sierra Vista will collect your cut tree and use it to make mulch and compost, or if you buy a live tree, you can donate it to the City and it will be planted in one of their many City Parks.
- ◆ Coming soon . . . the City of Sierra Vista's award-winning phone book recycling program. It will run from December 4 to January 12. Watch your local paper for details.
- ◆ Rob Call, Extension Agent, has finished his sabbatical and is BACK! Look for *The Agent's*

Observations in next month's newsletter.

Call's Classic Comments

Living Christmas trees add to the holiday season. Their freshness, scent, little needle drop, and the opportunity to plant the tree after the holidays make them very attractive. Trees that will do well include the Eldarica pine, Allepo pine, spruce, and some firs. After the holidays remove the ornaments and lights and move the tree to a cooler but sunny location. This

will allow the tree to acclimate slowly for a couple of weeks to outdoor conditions. Water to maintain health and growth, but do not water so much to cause root rot. If weather permits, meaning warm days during the first weeks of January, planting can be done. If the weather is poor, wait until the cold weather of January, February, and the first weeks of March is over. Plant the tree as recommended and water to establish. Planting recommendations are available at the Cooperative Extension offices.

Source: December 1997 *Cochise County Master Gardener Newsletter*

*Robert E. Call
Extension Agent, Horticulture*