Newsletter
Landscaping and Trails Committee

High Desert Gardening

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Questions on Drip Irrigation

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Setting up, calibrating, and understanding drip irrigation can be difficult since it is complex, especially for those of us who are using it for the first time in our new high desert landscapes. As follows are answers to a few questions that might arise as you set up your system for spring.

Question 1:

I normally water my shrubs for 30 minutes, but the recently circulated guidelines suggest watering for 1-1.5 hours once or twice per week in spring. This sounds like a lot of water—isn't it too much?

Answer 1:

That is correct—watering for 1-1.5-hour once or twice a week is a substantial amount of water compared to 30 minutes for the same time period. However, what need to be considered are: 1) how much water is being delivered (emitter nozzle size) during each cycle and 2) how deep the water is penetrating into the soil during that period of time (that depends on soil type). Once plants are established in the landscape, they thrive best with deep watering and the only way to accomplish that is to water deeply, therefore, the 1-1.5-hour suggestion. It might sound like a lot of water, but the water is being efficiently used and delivered directly to the root zone. Watering plants with frequent, shallow irrigation cycles can sometimes use as much or more water as infrequent, deep watering and makes plants more vulnerable to desiccation and drought stress after a hot, dry period, since the roots are shallow. With deeper roots, more water reserves will be available to the plant and result in a healthier root system and healthier plant. Another point that might be helpful to understanding this concept of deep, infrequent watering is to assess how much water one is applying during the 1-1.5-hour cycle by checking to see the depth that the water is actually penetrating into the soil. You might find that you need to run it less or more—or change the volume delivered by changing the emitter nozzle. Keep in mind that the watering schedule will need to be modified for each season as the water needs of the plants change.

I understand how frustrating this can be, since there is not a "one size fits all" answer and one can only provide ballpark figures, such as 1 hour, 18 inches, 2 hours, 24 inches…. These are just guidelines—they ALWAYS should be verified by direct

observations of the irrigation system in action. In fact, it is important to monitor a whole irrigation cycle to make certain there isn't any run-off during the cycle—if there is, you will need to change the nozzles to a lower gallon per hour (gph) or liter/hour (L/H) for a slower delivery that penetrates rather than run off the soil. This only needs to be done once for each type of plant—not every time, since it should be a constant as long as no changes are made to the system.

These are complex issues for which there are no simple answers. Yes, you could probably continue to run the irrigation for 30 minutes—the trees/shrubs might look okay for a few more years, but then they may likely begin to slowly decline-it doesn't happen overnight, but under-watered plants due, in part, to frequent, shallow watering, are pre-disposed to a range of secondary insects and diseases.

Question 2:
How can I help to maintain moisture in the soil around my trees?

Answer 2:
This can easily be done by adding a layer of organic mulch over the root zones of the trees. Bark mulch is an organic mulch that conforms to Mirehaven ARC Landscape Guidelines. A 2-3 inch layer of mulch can be applied to the root zone of the tree, making sure that it is kept several inches away from the main trunk. The mulch layer will help to conserve water by reducing evaporation and will help to moderate soil temperature and control weeds. Also, mulch adds organic matter that will enhance the soil as it breaks down and decomposes.

Question 3:
My drip irrigation system has only one zone for the trees and the succulents in my yard—what can I do to give each type of plant the correct amount of water?

Answer 3:
This is a common situation for most homes in Mirehaven. Without the expense of adding new zones to your system, you can modify the amount of water delivered to each type of plant by making some simple changes to the drip emitters. For example: trees require more water than succulents, but with one zone, you can't change the run time of each cycle, so for the trees, you can add more emitters, going from three 2gph emitters to five 2gph emitters per tree and/or you can increase the output of the existing three emitter nozzles from 2gph to 4 gph. The system should be checked after these changes to make certain that run-off is not occurring. For the succulents, another option is to change the emitter nozzles, either by blocking some of the nozzles or changing the drip emitter nozzles to a reduced delivery capacity, say from 1gph to 0.5gph. Yet another option is to leave the drip irrigation system for the trees the same and plug all of the emitters for the succulents and water them by hand. Clearly there are many ways to modify a one zone drip irrigation system—you just need to "ground-truth" any changes to verify that the correct amount of water is being delivered to each type of plant.

Question 4:
My landscape was installed about 4 years ago and now I've decided to install a few new plants—how can I make certain they get enough water since I read that newly installed plants need to be watered more frequently?

Answer 4:
You are correct, newly installed, or recently transplanted plants need to be watered more frequently than established plants, so this will need to be considered in your watering plan. If you have one zone for your irrigation

system, you have several options: you can put more emitters around the new plants, increase the drip emitter nozzle delivery size (from 2gph to 4 gph), or hand water the new plants between irrigation cycles to give the plants adequate water for their needs. Again, these changes to your watering program will need to be evaluated and verified.

Question 5:

My shrub has grown since it was planted, but the drip emitters are still right next to the base—is this okay or do I need to move the emitters?

Answer 5:

As plants grow, most of their functional roots (roots that absorb water) are located at the dripline of the plant—the area beneath the outer edge of the plant's canopy. They are not located close to the trunk or main stem. Therefore, the drip emitters need to be moved to concentrate around the dripline of each plant. That will help to ensure that all of the functional roots of the plant receive adequate water.