

The Garden Patch

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Salt Lake Master Gardener Association

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E.T. IN YOUR YARD

By Wade Bitner
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Since water is necessary for everything in our garden, we need to determine how much water is needed by the plants and soil they are growing in. This water requirement by plants is called ET, short for Evapotranspiration and means the sum total of all water required by the plant for normal growth.

What is ET? It is water evaporated from the soil surface, used by the plant for growth, passed out of the leaf as a gas into the air and lost into soil below the root depth. When the ET is met, normal plant growth occurs. ET is a value or figure of the amount of water needed based on climate, wind speed and direction, maximum and minimum temperatures, relative humidity, soil temperature, evaporation and solar radiation. It is a sophisticated measure of water movement each day.

ET for our area is published each week on the Internet at www.usuextension.slco.org/html/ettest.html. Turf recommendations for ET are predicted for the coming week based on a computer model and listed in inches of water needed. A calculation of water needed by the grass is also listed based on sprinkler efficiency. ET is listed as 100% and compared to 50%, 60%

and 70% sprinkler efficiency. Of course, the more efficient your sprinklers, the more water you actually save.

This means you need a water check of your own yard. How much actual water is being applied to the ground? The only way to check it is by measuring the amount of water applied with catch cups or #303 cans. Remember, you need a specific amount of water not a number of minutes of water. One-half inch of water applied to the plants per watering is the minimum.

We frequently are not aware of the amount of water a plant needs when we place it in our yard. Junipers can live on normal rainwater or only be watered once a month during the hot part of the summer growing season. If over-watered, junipers frequently develop root-rot and die. Annual flowers may need water every other day during the hottest part of the summer. Meeting all of these water requirements at the same time may be very difficult, especially if these plants are growing in the same area of the garden.

Grass roots may be trained to grow deep enough to allow watering of turf twice a week during the hottest part of summer. The roots may grow as deep as twelve inches allowing the plant a large (twelve inch) reservoir of water to draw from. Turf with roots of five inches have less than one half of the reserve of the deeper root system and need water twice as often. Turf watered once or twice daily for a short time may not even have roots in soil, but on the surface.

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ET in Your Yard, cont. from page 1

Miss a watering and these plants are in serious drought stress during hot weather.

*Grouping plants according to their water requirement will mean better plant growth and water savings at the same time. Setting the sprinkler clock to water zones according to their needs will also save water. Sprinkling may not be the most efficient form of water distribution, however, it is better than flood irrigating. Sprinkler efficiency is not 100%, so we must apply more water than the ET or plant requirement is to meet the ET of that plant.

*Plants need about 30 inches of water during the season from April to October which is called the water year or season. If the sprinkler is 50% efficient, 60 inches of water needs to be applied to meet that plant need. Many of us are watering 150% - 200% of plant requirement which is a waste of this precious liquid.

Check the sprinkler system before it is needed. Heads on each zone should be aligned so they place a uniform amount of water on that zone. Check the water applied by using soup cans placed at one, two and three steps from the sprinkler. Extension offices also have a measuring cup for sale that is easy to read and is not expensive. Run the system for ten or fifteen minutes, measure the water in each can. If there are differences, adjust the system to distribute water more effectively. Broken nozzles, tipped heads and mis-aligned heads all cause poor distribution.

Water applied during an average irrigation should be about one-half inch and may be more if it does not run-off the surface. Sprinklers may be cycled to water for a time-period, turned off to allow water to soak into the ground and then watered again to meet the ET or water requirement for that plant. This is a common way to treat slopes or clay soils where water may be wasted. Anyway you look at it, water is a precious commodity, one that we need and do not need to waste it. Landscapes can look very attractive and use a minimum amount of water if basic landscape principles are applied correctly.

Local Extension offices and the UNLA (Utah Nursery and Landscape Association) have

been working with water suppliers to further define how much water is needed to maintain our beautiful landscape which has become a part of our Intermountain heritage. The effort needs everyone in the green industry as well as home water users to work in concert to save water. Remember, it is up to you.

ADVERTISING POLICY FOR THE GARDEN PATCH FOR SALT LAKE MASTER GARDENER ASSOCIATION

Because the monthly newsletter of the association is funded by membership dues, the executive board has made effective the following policy for advertising in the Garden Patch.

There will be no ads accepted for any commercial establishment, or any member of the association to the Garden Patch. This includes display, help wanted or any *for sale* ads.

Association members may request that an announcement be made at the general meeting. They can make a request to the president of the association for time at the general meeting. This should be done at least two days prior to meeting time. This time will be limited to no more than three minutes. The president will have the right to refuse any request from any member.

Policy adopted on June 13, 2002 at the June 2002 monthly board meeting.

Gilgal Continues to Earn Praise

Lynn Christensen, Treasurer of Friends of Gilgal Garden recently wrote, "I had a chance, about a week ago, to go through the garden. I was astonished at the difference that you and the Master Gardeners have made.

"When we met with the city, I felt they were also impressed with what is happening. This was expressed by their willingness to work with us, and their spirit of cooperation. There was a noticeable change in a positive direction."

Thanks to all who are helping on this project!

What a difference a month makes! Remember the freeze on the 9th and 10th of May? My garden had recovered from that one quite well. The grapevine was growing well again. I was able to cover most all my tender plants up so they survived.

Now let's fast forward to the 9th and 10th of June. The weather was cold, but a low of only 38 degrees at the airport was forecast. It was time to cover up again. This time the plants had grown larger. I used all the same methods I used in the first frost. I put 5-gallon buckets over my cucumber plants. I put buckets over the Sweet Basil. Then with a combination of plastic and blankets, I was able to cover every other tender plant except the corn. There was a hard freeze. My corn was 1 foot high. It now has a green shaft, but all the leaves are black. The cucumbers inside the buckets froze. There are a few green leaves left on them, so they may recover. I have black Basil - that's not a good sign. The grapevine that froze the first time is now frozen again. The tomatoes froze back five to six inches, but they will recover fast.

On the morning of the 11th the Channel 5 weather showed 48 degrees as the current temperature. My backyard thermometer showed 30 degrees. A lot of my friends had all of their gardens freeze to the ground. Well, enough about Old Man Frost's last visit this spring. I hope he doesn't come back this summer. The last of May I cut nine large heads of broccoli and now the cauliflower is filling the refrigerator. It is time to start on the cabbage and to replant the area that had cauliflower in it. I started cabbage the third week in May and it is about ready to plant.

The fruit trees are doing quite well. I was

Golden's Garden

By Wm. Golden Reeves

afraid of the heavy blossom set early in the season, but with the frost and windy June, drop has taken place, and the trees have a good crop set. The two grafts on my seedling Apple tree have grown 4 inches already, so I removed the tape holding the graft together.

I have been running the leftover leaves bagged last fall through the chipper/shredder, and with the green lawn clippings added, have a nice compost pile cooking. I used a lot of the leaves to mulch around the plants in the garden and that has really cut down the amount of water needed.

My tomatoes are setting real well. With the heat late in May and early in June, I have a good crop set on. I am eating tomatoes from the 'Glacier' and 'Stupice' plants. The 'Sun Sugar' plant is loaded. I should be eating some before the end of June. I used my old cages on the tomatoes this year, then put a fence of concrete wire on both sides and pulled it to gather on top. I have plants that are growing out the top of the fence already. If this doesn't work well for me this year, I will make cages out of them for next year.

My peas have finally started to blossom. The sparrows and house finches have been eating the leaves and tops of the plants and keeping them from growing. I put trimmings from my apple tree into the ground to support the peas as they were growing. The birds used them to land on and slide down for their meal time. They say there is no free lunch, but the birds have found one in my garden!

Springtime Casserole

1 large slice of ham, cubed (about 2 cups)
6 cups cubed new potatoes
2 cups milk
1/4 tsp. pepper
chopped onion to taste

2 cups fresh (or frozen) peas
1/4 cup butter or margerine
1/2 cup flour
1/2 cup grated medium cheddar cheese

Boil potatoes and peas until tender. Meanwhile, in a saucepan melt butter, stir in flour to make a paste. Add milk and stir until smooth. Stir in cheese, salt, pepper, onion. Add ham. Combine all ingredients in a large casserole dish. Bake 30 minutes at 350 degrees or microwave on high 3 minutes to ensure that all ingredients are hot.

Seed Germination Chamber/Greenhouse

By Sherman Brough

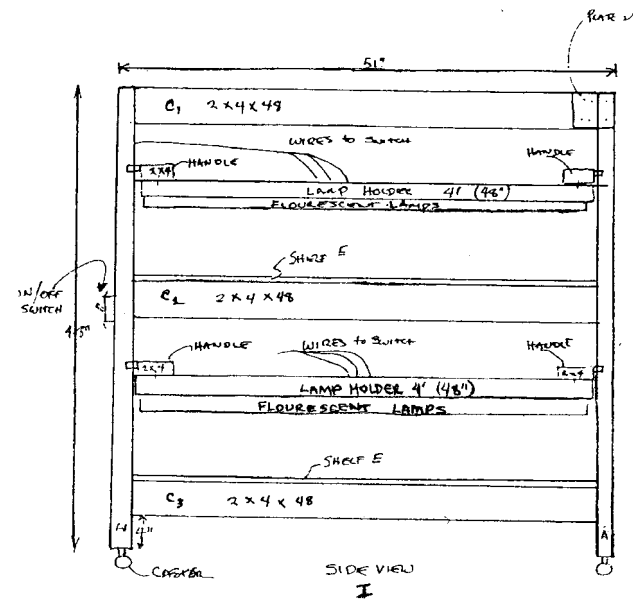
Here's a great little summer project to help you enjoy next winter more - a light shelf that will fit just about anywhere. This greenhouse will hold eight 11 x 21" standard size plant trays. Fluorescent light transformers provide just about the right amount of heat to keep temperatures around 70 degrees F. It stands 48" tall, is 51" wide, 27" deep, and has casters so you can easily move it.

1. Construct two ends. Materials needed: 4 - 2 x 4 x 48 (legs A); 6 - 2 x 4 x 24 (cross pieces B); 24 - 3.5" carriage bolts, nuts, and washers. Lay out two legs. Lay three cross pieces on top, one (B1) level with the top of the legs, one (B2) 4" up from the bottom of the legs, and the third (B3) 17" down from the bottom of the first cross piece. All three cross pieces will extend halfway across the width of the leg. Drill 4 holes through each cross piece and through the leg. Attach with carriage bolts, washers, and nuts. (See view IV) Make sure you have the space to attach the 2 x 4 front and back rails at right angles to the cross pieces. Repeat for second set of legs. Make sure the rails are attached at exactly the same distances on the second set.

2. Attach 3 front and 3 back rails. Materials needed: 6 - 2 x 4 x 48 (rails C), 12 - 4 x 4 x 1/2" plywood plates, 48 - 1 1/2" screws. Attach the 3 front and 3 back rails (C) to the two sets of legs at right angles to each of the cross piece ends. Attach by making a 4 x 4 plate from 1/2" plywood and attach where each front and back rail fit into legs, each plate with 4 1 1/2" screws. (see view IV)

3. Attach casters to bottom of legs. Materials needed: 4 casters and screws. Pre-drill screw holes. Attach each caster base to end of each leg.

4. Construct two moveable fluorescent shelves. Materials needed: 6 - Striplight fluorescent fixtures (two lights per fixture), 4 - 2 x 4 x 26 (24 will work but a little larger is easier to do) (handles D), 24 - 1" screws. Attach 3 Striplight fixtures for each pair of 2 x 4 x 26 (handles D) with short screws through the back of the metal lamp housing and into the handles. Make sure the 3 Striplights are centered and lined up on each handle so all three can fit between the two legs. Each pair of handles must be able to move up and down within the legs, so outer, long edge of the handle must not be even with the Striplight fixtures but slightly less than even. If needed, attach 1 x 1 x 20" rails on each handle to help keep them centered. Repeat for the second



moveable Striplight fixture unit.

5. Measure and cut two shelves and place frames for the two shelves. Materials needed: 2 - 27 x 48 1/2" plywood. Lay on middle and lower cross pieces and front and back rails.

6. Drill holes in legs to stop fluorescent lamps at desired height. Materials needed: 4 - 3 1/2" nails. Drill holes in legs. Insert long nails through holes to hold moveable handles of light fixture at desired height. Drill holes 2" apart starting at 5" above each shelf. Make sure holes are all level with holes in other legs, and that they catch the movable light fixtures handle.

7. Wire lamps to switches. Materials needed: Three-wire cable, 6 Four-wire Twist-on connectors. 2 on/off switches. One dual box for the two switches. 1 switch cover for box. 1 three-pronged male plug. One automatic timer. Connect three black wires from the three Striplight fixtures to white wire on cable. Attach one bare copper wire (ground) to the back of each of the three fixtures and connect the three bare wires to the bare wire (ground) of cable, with twist-on connector. Thread cable into electrical box, then connect black, white and bare wires of cable to on/off switch. Repeat for the second set of Striplight fixtures.

8. Wire switches to male plug. Install fluorescent tubes. Materials needed: 1 three-pronged male plug, Three-wire cable. Attach three wires from cable to both switches. Attach plug.

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Seed Germination Chamber/Greenhouse, continued from page 4

9. Cover greenhouse with Reflectix or Astro-Foil. Materials needed: 48" wide roll of Astro-foil or 10 ft. of Reflectix. Make a fold-down curtain in front and two sides. Attach with long wood strip. Because my unit is in front of a window, I used clear plastic on the back side to allow more light in. One 4 x 10 foot roll is enough to cover only the front, two sides, and top.

List of Materials

8 - 2 x 4 x 96 wood (\$2.05 each)	16.40
2 - 1/2" plywood cut 27 x 48 (4 x 8 = \$11.89)	11.89
6 - 4' Striplight fluorescent fixtures, 40 watt (Lithona) \$17.90	107.40
24 - 1/4 x 3 1/2" carriage bolts, washers, nuts (bolts 18cts, washers 4 cts, nuts 11 cts)	7.92
48 - 1/2" screws (box of 100 \$3.39)	3.39
4 - casters on wheel plate 2 for 4.79	9.58
Cool White 40 watt 48" Fluorescent tubes (case of 10)	\$19.50
#14 Electrical cable, 300 W, two wires and ground, NMD	4.48
6 - four-wire screw-on connectors	2.00
Electrical switch box	1.79
Electrical box cover (switch plate)	.47
2 - on/off electrical switches \$4.00 plus	8.00
11' Reflectix or Astro-foil reflector insulation sheets 4' x 10' (\$2.29 per linear foot)	25.19
Heavy duty grounded timer (accepts 3-prong plug)	12.87
Estimated total (April 2002)	\$230.88

Watch for sales on Fluorescent Striplights, fluorescent tubes, plywood, 2 x 4's, and foil insulation sheets. You could cut the cost by \$50.

