



J&L Garden Center

The All Season Gift
and Garden Center

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The Gardening Newsletter

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Summer Gardening

Plants Don't Waste Water - People Do. How Much Should You Water?

This is a very hard question to answer. In fact, there are many different answers, and many of these different answers are correct, even though they may seem contradicting. **Try asking ten gardeners this same question. You might get fifteen different answers.**

Most gardening problems can be attributed to one single factor - **WATER - Too Much or Too Little?** How much is enough and when is it too much? That is the million dollar question.

Too much water is just as bad for plants as not enough. Plants that are watered too often do not establish strong, healthy roots. When a problem comes along, the weak rooted plants are going to die before the strong rooted plants. Plants that are always kept wet cannot absorb enough oxygen from the soil so the roots start to rot and die. The symptoms of over watering are very similar to those caused by the lack of water - **The plant wilts and dies.** The reason the over-watered plant wilts is that many of the roots have died and the remaining roots cannot absorb water from the soil fast enough to support the leaves and flowers. A simple test to check for 'over-or-under' water is to watch a wilted plant. If you water a wilted plant and it recovers within a short period of time the plant needed more water. If the wilted plant does not recover it is probably dying from too much water. A simple gardening fact is: **More plants die from too much water than die from the lack of water.**



Rose and Flower Care

Fertilize roses and perennial flowers every six to eight weeks from mid-April through mid-August with **Systemic Rose and Flower Care.** This fertilizer helps stimulate new blossom development and helps kill many unwanted insect pests. Do not fertilize roses or perennials after late-August but be sure to continue fertilizing annual flowers until October.

Roses are thirsty plants. Although roses will survive with skimpy watering, they'll bloom their best when their roots are kept moist (not wet) during the growing season, especially during their blooming season. Water them once or twice a week during the hot weather but do not sprinkle them. If water gets on the blossoms, the flowers will fade and fall off prematurely. Watch for powdery mildew and the black spot disease on the new leaves and stems. Spray regularly with either **Ortho Funginex** or **Greenlight Rose Defense** if you see any signs of these two diseases. Powdery mildew is also a major disease problem for many flowers, especially zinnias, coreopsis, and phlox. Spray all your flowers at the same time you spray your roses. Roses tend to stop



blooming during the heat of summer but should put on a magnificent array of flowers as soon as the temperatures start to fall.

Spidermites are a major pest of roses and flowers this year. Spray them with **Isotox** every two weeks for two or three applications to control them. **Spidermite Tip:** wash the plants off with a high pressure hose nozzle a couple of hours before you plan to spray with your pesticide. The water helps wash the pests off the plants and helps remove any webs that might otherwise protect them from the chemical.

Summer Lawn Care

Fertilize your lawn every six to eight weeks during the spring, early-summer, and fall. Do not fertilize during July or early-August unless you absolutely have to: if you have to fertilize during the hot weather, use an iron supplement or an organic fertilizer such as Milorganite fertilizer. You should let your lawn slow down during the heat of summer. Too much fertilizer stimulates excessive growth, which is not good for the grass when it is hot. Fertilizer also makes the lawn require more water to keep it growing during the heat. Wait until Labor Day to fertilize your lawn this fall.

Lawn Fertilizer Tip: Do not fertilize your lawn at all this fall until the weather cools down into the 80's **and don't** fertilize your lawn if you have major water restrictions. If you have major water restrictions, wait until it starts to snow, in October or November, before applying any fall fertilizer. You can put your fall or winter fertilizer right on top of the snow this winter if you need to.



Lawn Weeds

Crabgrass is starting to show up along the edges of many sidewalks and driveways this time of year. Crabgrass is the name everyone uses to describe almost every kind of grassy weed in their lawn. Fortunately, true crabgrass dies each winter giving us a chance to kill its seed in the spring. However, many crabgrass preventers quit working in July and crabgrass plants start to emerge around the edges of the lawn. If you see signs of this weed you can spray with **Fertilome Crabgrass Killer** during July and August to kill these young crabgrass plants (and many other annual grass weeds in the lawn such as foxtail, watergrass, barnyard grass and goosegrass). Don't wait too long because **Fertilome Crabgrass Killer** will not work once the weed reaches a certain stage of growth. Once crabgrass starts to produce seeds it is usually too late to kill the plant with chemicals and you will just have to physically pull them out. You may have to spray two or three times this summer and fall to completely control all the crabgrass plants. Spray the entire lawn areas where



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you have these unwanted grasses. **Fertilome Crabgrass Killer** will not kill any of the perennial lawn grasses, just the annual varieties.

Do not spray your entire lawn with any of the **broadleaf weed killers** (Weedit II, Weed B Gon, Weed-out, etc) during the heat of summer. Wait until the temperature will stay below 85 degrees for 24 hours before spraying with these types of chemicals. Broadleaf weed killers volatilize (evaporate) when the temperature gets too warm and they will drift to other plants. These weed killers can damage, or kill, all the plants they contact: good or bad. If you are very careful, you can **spot-treat** certain areas of the lawn, but do it during the cool part of the day, and, don't spray the entire lawn. Clover, spurge, and oxalis are some of the problem weeds that are growing fast during this hot weather that you may want to spot treat.

Fall is the best time to kill clover, oxalis, morning glory, and many other broadleaf weeds. Until the temperature starts to cool down this fall, pull all the weeds you can and spot treat the small areas - during the cool part of the day. Oxalis is probably the hardest of these weeds to kill because its goes dormant early in the fall. Watch the weather closely and start treating broadleaf weeds as soon as the temperature will stay below 85 degrees for 24 hours. For best results, wait until after a light frost to control clover and morning glory this fall.

Lawn Grubs

The larvae of several different types of beetles and moths live in the lawn's root system and chew on the roots. During hot weather the lawn cannot keep up with the damage these insects cause and the grass dies. There are several different methods of control.

1. Apply an insecticide such as **Dylox Granules** or **Eight Granules**. Most grub damage occurs during July and August so the lawn should be treated during this time. Sod webworms and some of the larger caterpillars, are usually active in May or in September. Sod webworms are easy to find and are sometimes easier to control because the lawn is not under as much heat stress that time of year.

2. Mow the grass high; at least 2.5 to 3 inches tall. Beetles prefer to lay their eggs in short grass and tall grass withstands heat stress better.

3. Water deeply but infrequently. Beetle eggs need moisture to hatch. They will dry out and die if they do not get enough water while they hatch.

4. Stab the grubs with aerating sandals. You can buy strap-on plastic sandals with 1.5 inch spikes that will aerate your lawn and impale grubs as you walk over your lawn. Use this method in late-spring and summer, when the insects are near the surface.

Billbug larvae are the major lawn pest in July and August. These larvae will turn into a little black beetle when they mature. They love the heat and usually hatch next to a sidewalk or driveway but they can cause damage throughout the lawn. Unfortunately by the time you see the signs of their damage, the lawn is already brown. After treating the lawn with an insecticide, your lawn will continue to look worse for a while before it starts to improve. Your lawn will not start looking good again until the weather begins to cool and you can apply a fall fertilizer. You may have to re-seed or lay new sod in the damaged areas if you want your lawn to recover quickly.



Diagnosing Plant Problems

One of the biggest problems in trying to keep trees and plants alive is trying to diagnose what is actually wrong with them. Many different problems may produce similar symptoms but the corrective solution for each problem may be quite different. Once the problem is known, the solution is usually easy to apply. In order to effectively diagnose tree and shrub problems, several questions should be asked and a little investigation should be performed.



1. Determine the history of the plant and the surrounding area as best you can.
2. Check other plants in the immediate vicinity and surrounding areas. Do they show similar symptoms?
3. List the symptoms.
4. Watch the progression of the symptoms.
5. After determining the symptoms, examine the plant and surrounding areas closely for a suspected cause.
6. Find out what the possible solutions are for the problem.

Stop by for a free **Diagnosing Plant Problems** handout that will give you some additional tips about solving your plant's problems. Some of the problems to watch for this summer are Verticillium Wilt and Heat Stress in maple trees; Blight diseases in Tomatoes, Petunias, Lilacs and Euonymus plants; Borer Damage, heat stress, and 2,4-D damage in quaken aspen.

Insect Stings and Bites

If you have ever disturbed a hornet's nest or stumbled onto a beehive, you may already know how important it is to learn what to do for an insect sting. The most common stinging insects are honeybees, bumblebees, hornets, wasps, and yellow jackets. If you are stung, you will feel pain and see swelling and redness around the site of the sting. The area may also itch and burn. These symptoms can last from 48 to 72 hours.



Yellow jackets, and other wasps, don't just sting, they also bite! Yellow jackets feed on meats, sugars, fruits, and most everything you take outdoors for a summer picnic.

Life Cycle - The fertilized queen first appears in spring. By the end of summer, a nest may contain a queen and more than 200 yellow jackets. Yellow jackets are not very aggressive during the spring and early-summer. However, late-summer and fall they need extra protein and they become very aggressive. These insects are most aggressive in the fall, when an accidental encounter could bring on dozens of stings or bites. Yellow jackets will seek out and bite animals, insects, and humans to get protein from meat. During this time you need to be extra careful when you encounter them.

Control: Yellow jackets make paper-like nests, both above ground and in the soil. If you know where the nest is located you can spray the nest with **Hornet & Wasp Spray**. This insecticide kills all insects and bees on contact; they will drop from mid-flight if you have a good aim. **Be careful!** if you arouse the nest you better run because they can be mean! The safest time to spray the nest is at dusk or a little after dark when the wasps are less active; you are **less likely** to be stung.

Another control is to use a wasp and hornet trap. Hang the trap in a tree or next to a house that is being infested by these pests. The trap usually contains a hormone that attracts the

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hornets, but, hornets are also attracted to fried chicken, peaches, and most any food with a sweet smell. The hornets climb into the trap and they cannot get out. Empty the trap as often as necessary. Do not hang the trap in a hot, sunny area because the attractant may become too strong and repel the hornet instead of attracting it. If these hornets are not a pest you may just let them go about their business because they do help to pollinate some of the flowers during their search for food.

Summer Pruning

Don't be afraid to give your flowers a little haircut during the summer to help make them more bushy and to help stimulate more flowers for the fall. Petunias, marigolds, geraniums, and most flowers benefit from a light summer pruning. After trimming your flowers be sure to give them a little extra fertilizer to make them flower again quickly. Fertilize them with **Blooming and Rooting Fertilizer**. This fertilizer contains all the right ingredients to make most flowers bloom again very fast. This fertilizer also helps many "hard-to-bloom" flowers such as Martha Washington Geraniums, Gerbera Daisies, and hanging basket flowers, to produce more blossoms.

Except for the heavy pruning of fruit trees and roses, you can also trim nearly all ornamental shrubs and trees anytime during the year. Hedges benefit from several light prunings during the summer. Any deciduous tree or shrub that needs shaping can be pruned lightly during the summer. You can prune entire branches on pine trees but do not just prune the tips of pine trees and most spruce trees during the summer. Prune the tips of pines and spruce in May



Summer Fertilizer

Don't give up fertilizing your vegetable and flower gardens during the heat of the summer. They need regular fertilization to grow and bloom properly. Fertilize every six to eight weeks with **J&L 16-16-8 Multipurpose Fertilizer**. This provides a long lasting fertilizer. Stop fertilizing roses and other perennial flowers mid-August but continue fertilizing your vegetables and annual flowers until October.

If your flowers need a little extra boost, to make them bloom even a little better for a special occasion, fertilize them with **Fertilome Blooming and Rooting Plant Food**. Fertilize your flowers at least two or three weeks before that special occasion. This fertilizer is fast acting but needs to be re-applied at least a couple of times before that special occasion. **Fertilizer Tip:** Do not ever fertilize flowers during the heat of the day or if the plants are wilting. Fertilizer can burn, or kill, wilting plants. Always water your plants an hour or two before fertilizing them.



Peach Tree Borer

Spray your peach, nectarine, apricot, almond, and plum trees for the peach tree borer about the Fourth of July. Spray them every three to four weeks through September. You only need to spray the lower trunk and soil to control this borer, you do not need to spray the leaves or fruit. Use **Greenlight Borer Spray**. Another pest of the peach and walnut trees that you need to spray this time of year is called the Walnut Husk Fly. This little fly lays eggs just inside



the fruit's skin. A little worm hatches and eats the flesh making the fruit less desirable. Spray your trees with **Malathion, Diazinon, or Eight** about August 1 and again August 15 to control this pest.

Beat the Heat

If you are going on vacation and don't trust the teenager next door to give your plants the attention they need you may want to follow a few simple procedures to help your plants tough it out on their own:



Plan ahead. Don't plant sensitive plants that are going to need extra TLC when you won't be around to deliver it. Try to be back home before that bumper tomato and zucchini crop ripens.

Mulch garden beds up to 3 inches thick to help conserve moisture and keep the soil cool. Pull mulch back a few inches from the base of your plants so you don't invite rot and disease.

Wrap unglazed terra-cotta pots in aluminum foil to keep moisture from evaporating through porous surfaces. Plastic containers do not need this attention.

Create a tropical micro-climate by placing bricks in your bathtub, filling the tub with water to just below the top of the bricks, and setting your indoor houseplants on top of the bricks.

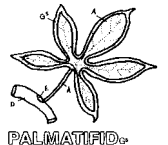
Relocate outdoor container plants to a spot where they will receive afternoon shade and shelter from drying winds. Group your pots together in clusters to help increase humidity.

Install soaker hoses hooked up to a timer.

Trim flowers and shrubs lightly just before you leave. The plants will have fewer leaves to support while you are gone, and the plants will have some fresh new growth, and flowers, when you return home.

Sunburned Plants - Leaf Scorch

Many trees and shrubs may have leaves with brown tips or edges this summer. Japanese Maples are some of the hardest hit plants this summer. They like the sun but they do not like the heat or the hot winds. This browning is commonly called "**summer leaf scorch**" or "**sunburn**". Leaf scorch is a problem this summer because many varieties of plants could not tolerate the extreme heat, or the dry winds, we had a few weeks ago. They did not like the hot weather we had during the last week of May either. I'm sure we are still going to have hot and dry weather for the next month so you will need to give your plants some TLC for the next month or two.



Many plants (especially newly planted shrubs) cannot absorb water fast enough to supply enough for the leaves during the heat, so, the leaf margins turn brown. The best way to prevent and cure leaf scorch is to soak your plants, with a slow trickle of water, every two or three weeks during the heat (newly planted shrubs should be soaked once or twice a week for the first summer.) You may need to soak your plants for several hours at a time because the water needs to soak as deeply into the soil as possible. You can check how deep the water penetrates by digging about 6" to 9" in the soil. The soil should be moist at this depth or you didn't soak your plants long enough.

Don't drown your plants. Water normally and just soak older plants deeply once or twice a month, and new plants once or twice a week, during the summer and fall. Once the snow starts to fall, *Mother Nature* usually takes care of them the rest

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of the winter. However, if you remember last winter, we did not get much snow. Many plants are still suffering the effects from last winter's dryness. Look at the older pine trees throughout the area. Many of these trees did not get enough water last fall and winter. Be sure you water your plants deeply this fall to prevent further problems.

Leaf scorch doesn't usually kill plants (except for newly planted ones). It just makes them look terrible for a while. The damaged leaves will not recover and some plants may not produce any new leaves until next year, but the older plants should be fine. Leaf scorch may affect one side of the plant and not affect the other side. Leaf scorch may also affect one plant but not bother another identical plant just two or three feet away.

Root Weevil

Root weevils are seldom seen, but their damage is very visible. This damage is one of the most common complaints of gardeners in this area. The characteristic notches that mysteriously appear around the edges of the leaves are a sure sign that these unseen pests are at work. Root weevils are a major pest on many ornamental plants and food crops in Utah. Plants particularly attacked by root weevils include euonymus, lilac, roses, raspberries, strawberries, rhododendron, privet, melons, cabbage, etc. Root weevil in both ornamental and edible plantings can be controlled by spraying, or dusting, registered insecticides at the proper time. The most important part of root weevil control is persistence. Don't give up!

You may also try using some microscopic beneficial nematodes around your plants next spring. These nematodes feed on soil insects, larvae and eggs. You will not notice a significant decrease in damage to the leaves the first year because the adult beetles do that damage. You will start to notice a significant decrease in leaf damage after one or two years as the adult population decreases because the eggs and larvae are destroyed.



Spiders - Good or Bad?

Most spiders in your yard are beneficial. They trap and kill many insects that would otherwise love to cause problems for your flowers, shrubs and trees. Spiders make a natural insect trap and as long as they stay outside it is to your benefit to leave them alone. Spiders may actually kill more insects than you can kill by spraying.

However, once a spider decides to invade your home it becomes a nuisance pest. Most nuisance pests are very hard to control such as boxelder bugs, flies, ants, and millipedes. Spiders are no different; they are hard to control. The best control for these nuisance pests is persistence. Chemical insecticides will kill all insects that come in contact with the spray. However, there is usually not a very long residual effect to control nuisance pests. If you can prevent these nuisance pests from entering your house, their control will be much simpler. Make sure your screens are in good condition. Caulk around doors and windows. Spray the outside foundation of your house, with a pesticide, regularly in the fall; spiders and other insects are looking for warmth and protection from the weather.

Once spiders enter your house, control is a little harder. Regular applications of an insecticide inside your house may help to control some pests. Vacuuming the unwanted pests is



also a safe way to eliminate them. Perhaps one of the best ways to control spiders inside your house is to use spider traps.

Most spiders inside your home are not dangerous, they are just a nuisance. Two spiders are dangerous. The Black Widow spider and the Aggressive House Spider (Hobo Spider) are two spiders that can cause serious injury. The **Hobo Spider Elimination Kit** (a spider Trap) traps and kills all different kinds of spiders; not just the bad ones. This kit contains five pre-baited cards that attracts and kills all types of spiders. You can put spider traps in several different areas of your house to catch spiders; it is an excellent way to control the unwanted spiders inside your home.



Spidermite Controls

Spidermites are a very troublesome pest to marigolds, roses, junipers, alberta spruce, and many other plants. Spidermites are not an insect; they belong to the spider family so many insecticides do not control them effectively. Spidermites are so tiny that they cannot be seen with the naked eye. The best way to test for spidermites is to place a white piece of paper under the leaves of the affected plant. Shake the plant vigorously and watch the dust that falls on the paper. If any of the dust particles start to move, your plants have spidermites.



Controlling spidermites is a major problem for most homeowners. Mite damage is costly and controlling them is difficult, time consuming, and expensive. Spidermites feed on plant tissue by sucking the sap out of the leaves and destroying the chlorophyll. The damage first appears as stipples. As feeding continues the leaves turn silver or yellow. If left uncontrolled, dense webbing will appear and the plant will defoliate and die. Even light infestations may adversely affect the appearance of both the foliage and the blossoms.

Spidermites thrive in hot climates: they are flourishing this summer! The female can lay up to a hundred eggs in her 30 day life span. One female, in one month, through successive generations, can generate a population of millions. Spidermites do not always die in the winter. In cold weather, spidermites can survive under leaves and in other sheltered places. When warm conditions return, female spidermites resume eating plants and reproducing new spidermites.

Spidermites are a stubborn pest. They are difficult to detect, very adaptable, and they are known to develop resistance to chemical controls quickly. Some pesticides that give adequate control may burn or kill leaves on some plants during hot weather, which makes control even more difficult. Other products leave a residue that makes them unavailable for use on edible plants.

The most difficult part is that spidermites feed on the underside of leaves. Good control is difficult unless the spray comes in direct contact with the mites, on the underside of the leaf. A high pressure sprayer, (hose sprayer) is more likely to make the leaves move enough for the chemical to come in contact with the mite than an aerosol container, or a small trigger sprayer.

Some general recommendations are:

Isotox is good for flowers, trees, shrubs. It cannot be used on fruits or vegetables.

Fertilome Ornamental and Evergreen Spray provides fair spidermite control for flowers, trees, shrubs. This spray cannot be used on edible plants.

Hi-Yield Cygon - Cygon is labeled for use on some edible plants and provides limited control of spidermites.

Kelthane is good for flowers, trees, and shrubs. It can be used on some edible plants such as beans and strawberries. It is not registered for use on squash or cucumbers.

Neem Oil is good for flowers, trees, and shrubs. It can be used on all edible plants. This is an oil so it may burn some leaves if applied in hot weather.

Dividing Perennials

One of the joys of a perennial garden is watching the plants grow and fill the spaces allotted to them. However, perennial flowers can out-grow their assigned areas quickly unless they are moved and divided periodically. Most perennial flowers do not know when to stop growing; you need to make that determination for them.



Dividing perennial flowers is not a bad thing for the plant. In fact, many plants are invigorated by dividing them regularly. Don't be afraid of breaking roots or plants as you divide them. This is a necessary evil when dealing with strongly rooted plants. Don't be afraid of throwing away extra or unwanted plants, or giving extra plants to neighbors. The hardy perennial flowers will take over and dominate the weaker varieties if you don't do some refereeing.

Divide spring and summer blooming perennials in the fall, as soon as the temperatures begin to moderate. Divide fall blooming perennials either in the spring or after they finish blooming in the fall, if there are still several weeks of good weather before the ground freezes hard. Divide perennials as often as the plant overtakes its assigned area. You may need to divide your Shasta Daisy or Coreopsis every two or three years. Phlox, Astilbe, and Daylilies may only need to be divided every 5 to 6 years. Peonies only need to be divided every 10 to 15 years.

Better Late Than Early

Trees and shrubs cling to the growing season even more tenaciously than we do. As we pack up our tools and move indoors, these plants continue growing longer than we think. Granted, they're downshifting and slowing down. As photosynthesis slows because of the reduced light and heat, leaf (and needle) pores contract, and less water vapor escapes into the air. But even when above-ground activity seems to have halted, there's still underground root activity. As the ground gradually cools, roots keep absorbing moisture until the soil temperature reaches 40 degrees. Because the release of water through the top growth has slowed, there's a good supply of moisture still in the system. That makes fall an ideal time for planting pine trees, fruit and shade trees, and shrubs, since there is little danger of transplanting's major cause of failure: dehydration.



You can safely plant trees and shrubs up to four to six weeks before the ground freezes solid. Prepare the planting hole just as you would in the spring or summer. After planting and watering your plant (be sure to fertilize your plant with root starter even when planting in the fall), apply a mulch on top of the rootball. This prevents the soil from cooling too fast, allowing the roots extra time to get established before the ground freezes solid. You do not need to water often, but be sure to keep them moist until it snows.

Blue Stakes

Before you start digging anything from a post hole to a basement, you need to make sure there are no underground utilities in your yard. The various underground utilities in your yard could include gas, electric, fiber optic, telephone, cable TV, water and sewer.

The Utah State Law, "*Damage to Underground Facilities Act*" requires anyone engaging in an excavation activity, with the exception of gardening or tilling on private property, to notify Blue Stakes at least 2 business days but not more than 7 calendar days before excavation begins.

The Blue Stake service is free both to homeowners and to contractors. Blue Stakes helps locate and mark the potential underground services that might otherwise be damaged during the digging process. If you damage one of the underground utility lines without calling Blue Stakes first, you could be liable for the total cost of repairing those lines. If you have Blue Stakes mark the utilities and then damage the lines, outside the marked area, the utility company is liable for all the repair costs. **Remember; Call Before You Dig, Wait the Required Amount of Time, Respect the Marks, Dig With Care.**

Be Careful

When an insect pest or fungal disease strikes a plant, beginning gardeners may grab any pesticide from the shelf and start spraying indiscriminately. More experienced gardeners know that a product must be selected to address a specific problem and used wisely.

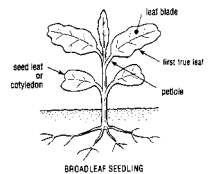


Good gardeners never forget that pesticides designed to kill insects can be dangerous for people as well. That's why it's **SO** important to select garden chemicals carefully, apply them sparingly, and always read and follow all instructions to the letter.

Now is the time to enjoy the fruits of your labors. Many insects are also enjoying your fruits and vegetables. Be careful when you spray your plants with insecticides. Make sure that you use the correct sprays and that you wait the proper length of time after spraying before you harvest. Chemical insecticides are safe to use if you apply them correctly and follow the warnings on the label. Each bottle will tell you how long you must wait after applying it until you may safely eat the food.

Photosynthesis

The process enabling a plant to grow and produce food for itself is called photosynthesis, which literally means "*to put together with light*"



A plant needs energy from sunlight, carbon dioxide from the air, and water from the soil. If any of these ingredients are lacking, food production will stop and if any factor is removed for a long period of time, the plant most likely will die.

Photosynthesis formula: Water (H₂O) + Carbon Dioxide (CO₂) + Sunlight + Chlorophyll = Simple Sugar + Oxygen (O₂).

During the day, plants store the energy from sunlight as sugars and starches, or, they can transport these chemicals to the roots where sunlight never reaches. In the roots, these chemicals are converted back to water and carbon dioxide, which produces energy for the roots to grow. At night, when there is no sunlight, the leaves also use this stored energy to grow. The

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process plants use to break down sugars so that stored energy is released is called **respiration**.

Only certain cells in stems and leaves can manufacture food energy. These cells are protected by and located between the upper and lower epidermis (skin) of the leaf. Chlorophyll, the green substance these cells contain, is the special pigment which traps light energy that can be used to manufacture sugar and starches. Plants such as sugar beets store energy-rich sugar in the root. The extraction of this beet sugar (as sucrose) ends up as table sugar, which was originally energy from sunlight.

As sunlight increases in intensity, photosyntheses also increases resulting in greater food production. Many garden crops, like tomatoes, respond to maximum sunlight and only a few varieties of tomatoes will produce any fruit in greenhouses, or in late fall and early spring while sunlight is minimal. As sunlight decreases in the fall, the chlorophyll molecules die and the leaves begin to change color, depending on what other types of pigments are contained within the leaves.

The second component needed for photosyntheses is water, which enters a plant through the root system. Its importance is three-fold. 1. Water is one component in manufacturing sugars. 2. Water helps to maintain a plants turgor. (Turgor is the firmness of plant tissue & water pressure within the plant) Turgor is needed in plants cells to provide growth, a wilted plant has no turgor pressure. 3. Water provides nutrients and moves needed minerals to the photosynthetic sites. Water also transports sugars and hormones to other areas within the plant

The third component of photosynthesis is carbon dioxide, a natural component of the air we breathe. Carbon dioxide enters the plant through the stomates. It provides carbon for the formation of plant sugars.

Temperature, while not a direct component of photosynthesis is still an important factor. In the temperature range of 65 to 85 degrees F. photosynthesis is the greatest. Night temperature does not affect photosynthesis.

Rhododendrons And Azaleas

Rhododendrons and Azaleas are some of the most spectacular blooming shrubs available. They are prized as ornamental shrubs throughout the world. Rhododendrons are known for their spectacular flower clusters and are available in many varieties and colors. Besides their flowers, Rhododendrons have handsome foliage in the garden and are available in many different sizes and shapes. Rhododendrons grow throughout the world, usually in the cool, humid regions. The largest Rhododendron found is fifty-five feet tall with a six foot diameter trunk. This plant produces eight hundred flowers each year.

Growing Rhododendrons in Utah is much more difficult than growing them in other areas of the United States such as Oregon, California, Washington, and the Eastern States. Several cultural practices must be followed in order for them to survive, flower, and be rewarding in your garden.

The Wasatch Front is a "**Desert**" and has a "**Freeze - Thaw - Freeze - Thaw**" cycle in the winter. During the summer rhododendron leaves do not wilt like other plants, they just turn brown around the edges, so it is hard to know when the plant is suffering from the lack of water. Keep your plants moist but do not keep them soggy wet. Rhododendrons can also suffer from root rot in our area because of our high soil pH and the tendency to



over-water them. To help keep your plants moist cover the ground around them with mulch. Do not cultivate the soil near the plants. Apply soil sulphur around the plants twice each year to help lower the pH (March and September).

During the winter many Rhododendron's leaves naturally curl and wilt at 20 degrees, to reduce the surface area and to conserve water. When the temperature rises above 20 degrees the leaves uncurl and need to take water from the soil to replenish that which was lost. If the soil is frozen, or dry, the plant cannot replace the water and winter injury occurs. Rhododendrons actually use a considerable amount of water during the winter, especially those varieties with large leaves.

Some winters provide adequate water with rain and snow melt. However, most winters we need to provide additional water at least once or twice. Azaleas are not as susceptible to winter dehydration (winter kill) because many of them drop their leaves each fall. Evergreen azaleas may shed some of their leaves in order to survive a dry winter.

Winter preparation begins early fall. Start withholding water (just like roses) mid-September to help the plants harden off for winter. Your objective is to slow the rate of growth and to increase the carbohydrate content of the sap, which helps prevent the sap from freezing during the winter. Water your rhododendrons as soon as the ground begins to freeze, but before the ground is frozen solid. After the soil is completely frozen, cover your plants with six to ten inches of mulch (leaves, bark, soil pep, straw). If you apply this mulch before the ground is frozen solid you are not helping the plant harden off and may cause other problems for your plants. Mulching helps minimize water loss and helps prevent the shallow root system from freezing too hard. You may also want to spray the leaves with **Wilt Prufe** sometime during November. Wilt Prufe is a wax that seals the leaves, preventing unwanted moisture loss during the winter.

If extra water is required during the winter, water your plants when the ground isn't frozen solid and when the plants will be able to absorb the water. Watering in subfreezing temperatures will not help. Brown leaf margins in the spring are a sign that your plant did not get enough water during the winter. One of the best ways to water a plant in the winter is to **CAREFULLY** shovel snow under or around your plants, do not pile the snow on top of the branches. When the snow melts it provides the necessary water. Add more snow each time the snow melts.

Mystery Squash

Do you ever get a *Mystery Squash*? Maybe a big, round, dark-green squash with yellow spots scattered over the entire surface?



Squash plants cross very easily. The fruit may resemble the mother plant (the plant the cross is growing on) or it may resemble the father plant (the plant where the pollen came from) or it may be something totally different. As long as both parents are edible you can eat the fruit without any problem although it may have an unusual taste because of the genetics involved. If, however, one of the parents could have been a gourd do not eat the fruit because some gourds can make people sick.

Composting Tips

Composting is an excellent way to make your own organic materials from your gardens. However, many gardeners experi-

J&L's Coupon of the Month

**Free
One
Chrysanthemum
in a 4" pot
Your Choice of Color**



**Bonus Buy
Buy more
Chrysanthemums
for only
\$1.79 each**

regularly \$2.49 each

Coupon Expires September 30, 2003 Limited to supply in stock.

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ence a few problems with their compost piles. Composting is pretty simple once you learn how. We have a composting hand-out available so stop by to pick one up.

What can be composted

Leaves, Cornstalks, Straw, Hay, Grass Clippings, Chipped wood, Wood ash (wet), Weeds, Manure, Fruits, Vegetables, Coffee grounds, Tea bags, and most organic products in the yard.

What cannot be composted:

Charcoal and Coal ash, Large quantities of Pet Manure, Treated lumber, Large branches, Diseased plants, Mature weeds (with seeds), Weeds that spread through runners (morning glory, quack grass, bermuda grass), Meat, Bones, Dairy products, Salad dressing, Cooking oil, Peanut butter, Grease, and other Animal products.

Composting Problems

1. Problem Strong odor

Solution Turn the compost pile more frequently.

2. Problem Too Wet

Solution Add dry grass or straw. Turn compost more frequently.

3. Problem Not composting but wet.

Solution Add Compost Maker, grass clippings, and Nitrogen. Turn compost more frequently.

4. Problem Not composting and dry.

Solution Add more water and Compost Maker.

5. Problem Ammonia Smell

Solution Add dry leaves, straw or sawdust. Turn compost more frequently.

Chrysanthemums

As the summer flowers start to fade because of heat, cold, and other problems, the fall flowers will start to flourish. During the fall season, chrysanthemums become the dominant show in the garden. Mums naturally bloom late in the season because they are short day (long night) plants. Long nights cause flower buds to form in the fall.



From August until snowfall, beautiful shades of yellow, orange, red, purple, bronze, pink or white flowers will decorate your garden. Mums make wonderful garden plants and excellent cut flowers. Combined with other fresh and dried materials they also make beautiful indoor fall decorations. Mums are easy to grow but if you neglect them they may only produce weak stems with only a few small flowers. Do not plant florist mums in the garden. They require special care and do not always bloom in the home gardens. We have a handout available to help you grow large, beautiful plants and have a mass of color this fall. Stop by for your free copy or download it from our Web Site.

Mosquitoes

Summer garden parties can turn into a disaster if the dreaded mosquitoes are not kept in check. Several sprays are effective to prevent and control mosquitoes, both chemically and organically. You can spray your entire yard, including the lawn, with **Malathion** several days before your party. **Malathion** is a relatively safe chemical that effectively kills mosquitoes and many other flying insects. It does not have a long residual and will dissipate within three or four days. Do not spray Malathion the day of your party because it does have an unpleasant odor that may last a day or two. **Eight** is an organic chemical that is listed to control many flying insects, including mosquitoes. **Eight**, like Malathion, has a short residual and should give some relief if you spray it a day or two before your party.

You can also spray your yard an hour or two before the party begins with a **Yard & Patio Fogger**. This aerosol spray kills and repels flying insects for several hours and it does not leave an unpleasant odor to bother you or your guests. Try lighting Citronella candles an hour before your party begins. Place several candles on tables or counters to help repel many insect pests. The night breeze will determine how well these



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repellants work.

Use yellow light bulbs instead of white lights. Many insects are attracted to white lights but not to yellow lights. However, mosquitoes don't care what color light you use, they will still find you anyway.

Tree Trivia

Trees give so much: blossoms in the spring, fruit in the summer, color in the fall, and shade all year.

Trees reduce pollution and are effective smog and dust fighters.

We breathe 35 pounds of oxygen each day. All of this oxygen comes from trees and other green plants.

Trees serve as homes for birds, insects and other wildlife. Many trees attract a variety of birds and insects that prey on each other, helping to balance our ecosystem.

Trees are natural air conditioners. The evaporation from a single tree can produce a cooling effect equal to a ten-room size air conditioner operating twenty hours a day.

Tree roots hold soil in place to prevent erosion from water and wind.

Trees give us a constant supply of products: paper, syrup, adhesives, mulches; to name a few.

About 99% of the water taken up by tree roots evaporates from the leaves through transpiration. A mature tree can lose hundreds of gallons of moisture each day.



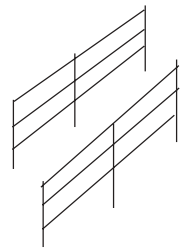
An ideal soil for tree roots is 1/4 water, 1/4 air, and 1/2 soil and other solids.

Browning, wilting, or scorched leaves after very hot or cold weather are usually caused by the lack of available water in the root system.

Double Deer Fence

We are always hearing about new or innovative ways to try to keep deer out of the yards. One gardener told us about a system he has used with some success.

He said a relatively simple and inexpensive solution to the deer problem is to erect two 3-foot-high fences around the garden. Make each fence by tying at least three strings to stakes bordering the gardens. Space the fences three feet apart. Apparently, deer are reluctant to jump over a low fence if another fence is visible just on the other side.



Dodder

Have you noticed a pretty orange groundcover that is covering many fields? This pretty ground cover is called **Dodder**. It is actually a parasitic plant that attaches itself to a host plant and then sheds its roots. It lives off the energy provided by the host plant. The only way to control this weed is to physically remove it, along with the parts of the host plants it has attached itself to. Its not so pretty after all!

Predator Urines

In the wild, the relationship between predator and prey defines the daily routine of every animal alive. The predator stalks its prey to satisfy its most basic need for food and the prey seeks to avoid the predator at all costs to ensure its own survival. It is the law of the wild. In this life and death game of hide and seek, the scent of urine is often the only warning a prey has that a predator is nearby. This scent of predator urine triggers a primal reaction in the prey. For centuries hunters have used animal urines to manipulate the movement of prey in such a way as to improve their chances for hunting success. Based upon these traditional uses the "**Leg Up Company**" has developed 100% Predator Urines as deception scents to deceive animals into believing a predator is very close by. These urines effectively camouflage human scent and deceive prey by creating the illusion that the predator is active in the immediate area. Wild animals instinctively react to the perceived threat of danger. By using the urine to mark a perimeter like these predators do in the wild you are able to replicate the predator/prey response in each animal.

We have four predator urines available; **Wolf, Coyote, Bobcat, and Fox**. The predator urines come in an eight ounce bottle. Simply apply the urine to the cotton in a dispenser and place these dispensers in several areas in your yard. We have not had any personal experience with this method of deer repellent, but the company told us that they have had very good success in several parts of the country. Listed below are the types of urine to use for the common nuisance animals.

Coyote urine repels Deer, Rabbits, Raccoons, Skunks, Squirrels, and many other Rodents.

Fox urine repels Moles, Mice, Rabbits, and many Rodents.

Bobcat urine repels Moles, Mice, Muskrat, and many rodents.

Wolf urine repels Moose, Mule Deer, Bear.

Take your pick depending on what animals are bothering your yard. Please let us know about your success or failure.

Avoid Tree And Utility Conflicts

Determining where to plant a tree is a decision that should not be taken lightly. Many factors should be considered prior to planting. When planning what type of tree to plant, remember to look up and look down to determine where the tree will be located in relation to overhead and underground utility lines.

Often, we take our utility services for granted because they have become a part of our daily lives. These services arrive at our homes through overhead or underground lines. Overhead lines can be either electric, telephone, or cable television. Underground lines include these three plus water, sewer, and natural gas. The location of these lines should have a direct impact on your tree and planting site selection. The ultimate mature height of a tree to be planted must be within the available overhead growing space. Just as important, the soil area must be large enough to accommodate the particular rooting habits and ultimate trunk diameter of the tree. Proper tree and site selection will provide trouble-free beauty and pleasure for years to come.

Before you plant, make sure that you are aware of the location of any underground utilities. To be certain that you do not accidentally dig into any lines and risk serious injury or a costly service interruption, call the **Blue Stake** service first. Never assume that these utility lines are buried deeper than you plan to dig. In some cases, utility lines are very close to the surface.

‘Fall Planting’

Midsummer is the season of abundance, when gardens overflow with tomatoes, peppers, squash, beans, cucumbers, and other warm-season rewards. With all this bounty, it's hard to think of planting still more crops. But June through August is the time to get started if you want to enjoy a long second harvest that will bring fresh food to your table through late-autumn and even into early-winter.

A fall planting offers several advantages, not the least of which is the fact that the crisp weather of fall actually improves the taste and quality of many vegetables. Green beans become more tender, Cauliflower more creamy, and greens such as Kale and Spinach sweeter still. Brussel Sprouts and Peas are barely worth bothering with until a good frost or two have sweetened them up.

June 15			
Broccoli	Plant inside	Cabbage	Plant inside
Cauliflower	Plant inside		
July 1 - 15			
Beets	50 - 65 days	Broccoli	50 - 70 days
Cabbage	60 - 70 days	Cauliflower	50 - 70 days
Green Onions	50 - 60 days	Kohlrabi	50 - 60 days
Parsnips	100 - 120 days	Summer Squash	40 - 50 days
Swiss Chard	50 - 60 days	Sweet Corn	(risky) 60-70 days
July 15 - 31			
Beets	50 - 65 days	Broccoli	use transplants
Cabbage	use transplants	Cauliflower	use transplants
Carrots	50 - 70 days	Cucumbers	55 - 60 days
Green Onions	50 - 60 days	Kohlrabi	50 - 60 days
Lettuce	30 - 40 days	Swiss Chard	50 - 60 days
Peas	60 - 70 days	Radishes	25 - 30 days
Spinach	40 - 50 days	Turnips	50 - 60 days
August 1 - 15			
Beets	50 - 65 days	Carrots	50 - 70 days
Green Onions	50 - 60 days	Kohlrabi	50 - 60 days
Lettuce	30 - 40 days	Onions	Harvest next spring
Peas	60 - 70 days	Radishes	25 - 30 days
Spinach	40 - 50 days	Turnips	50 - 60 days
September 15 - October			
Garlic	Harvest next summer		