



J&L Garden Center

*The All Season Gift
and Garden Center*

620 North 500 West Bountiful, Utah 292-0421

The Gardening Newsletter

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December 2004

Winter Gardening

Gardening is a year round job. However, winter gardening is different than summer gardening, thank goodness. First, we need to get the outside plants ready for winter. Once we have protected the outside plants from the extreme cold, from heavy snowfall, and from deer damage, we need to switch our attention to the indoor plants. They need some extra attention during the winter. Many insects are active on houseplants during the fall and the winter. Some even come home with you when you buy new houseplants. These pests need to be eliminated during the winter.



After that, it's a good time to put a few logs on the fire and cuddle up with a good book, hopefully one about gardening. Winter is an excellent time to get a jump on spring with a few new ideas for the yard. The winter months give us a chance to step back and look at our yard, organize a plan of attack, and when spring arrives, resume our gardening. Try to add one new idea to your gardening plan next year. Hopefully, we will give you an idea or two in this newsletter.

We also have a few more articles contained in our website version of this newsletter than are contained in this printed version. It contains articles on Household Ants, Insect Pests in Firewood, Humic Acid, and a few other topics. You can print a copy of this newsletter from our website www.JLGardenCenter.com. You can also sign up to receive our weekly gardening tips by email.

Snow - a mixed blessing

Snow is a mixed blessing in the yard. When snow comes early, before the leaves are raked and the gardens are roto-tilled, it is a nuisance. When it comes at the right time it is one of the best, and cheapest, winter protectors available. Fluffy and light, freshly fallen snow is an excellent insulator. Snow contains millions of tiny air pockets that trap soil warmth in and keep cold weather out. Snow helps protect perennials, bulbs, groundcovers, strawberry plants, and most other low growing plants from



the alternating freezing and thawing cycles. Snow can also help prevent tender shrubs, such as azaleas, rhododendrons, hydrangeas, and other borderline-hardy shrubs from struggling, or dying, during extremely cold temperatures. It provides insulation from the cold weather and supplies the much needed winter moisture that most evergreen plants require.

Plants that have stems above the snow line may suffer winter injury on those exposed parts. Some winter injury may be simply the lack of spring flowers. The first part of a plant that dies are the flower buds, then the leaf buds, next the stems, and finally the roots.

Mulch is often used for the same purpose that snow provides, to help insulate plants from extreme temperatures, to help prevent the soil from heaving during the winter, and to help keep moisture in the soil. If we don't get enough snow to protect your plants then you need to provide some extra mulch.

Amaryllis Bulb Care

Amaryllis are one of the popular winter blooming flowers. They are very striking and colorful. Amaryllis bulbs are extremely easy to grow, even for people that normally kill their other houseplants.



Amaryllis bulbs make the perfect gift to help keep your family gardeners busy during the winter. They also make great gifts for friends and neighbors. Amaryllis bulbs are easy to take care of and you can almost watch them grow. With the proper care you can have your amaryllis bulb bloom year after year.

Amaryllis are available in many different colors ranging from white to pink to red. **Red Lion** and **Orange Sovereign** are two of our most popular varieties, but we also have 12 other varieties to choose from. Amaryllis bulbs are available in different bulb sizes ranging from 26cm to 40cm size. This year we even have some 44cm size bulbs available - they are big! The number of blossom stems and blossoms will vary with each amaryllis bulb, but you can expect more blossoms with bigger bulbs. One or two blossom stems are common on the small

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(28cm) size bulbs, while three or four blossom stems are usual on the medium size (34cm) and four or five blossom stems are possible on the larger size (40cm) bulbs. **The blossoms will not be any larger on bigger bulbs, you will just have more of them.**

We have an Amaryllis Care sheet available. Stop by and pick one up, or download a copy from our website.

Christmas Tree Care

Fresh cut Christmas Trees are a common holiday tradition. With the proper care they can stay fresh and be safe through Christmas. However, you need to remember that a **Christmas tree can always be a fire hazard.**



Always put your tree in a water stand. Be sure to cut off at least one inch of the trunk and put it in water within 10 minutes of making your cut, or you will have to make another cut.

Never let the water stand run out of water. Check the stand daily. The tree will use more water when you first bring it in the house than it will use a week later. A tree can use up to a gallon of water per day. If the water stand runs out of water you will need to make another 1" cut before the tree will absorb water again.

Spray your tree with Wilt Prufe. This spray prevents moisture loss from the needles. Wilt Prufe will help your tree stay fresher longer. It is a nontoxic, odorless spray that really makes a difference.



Do not put your tree near a fireplace or in front of a furnace vent. Do not put a Christmas tree in the same room with a fire; even a small fire in the fireplace can dry a tree out fast. Try to keep the tree as cool as possible.

Always use miniature lights; never C7 or C9 lights.

Spray your tree with Fire Retardant.

Potted Christmas Tree Care

Many gardeners buy a potted spruce or pine tree, use it for their Christmas Tree, and then plant it in the yard after Christmas. As long as you follow a few simple guidelines you can have a successful experience with a **potted Christmas Tree.**



1. Do not keep a potted tree in the house more than 10 to 14 days. A tree may start breaking dormancy or start growing when it is kept warm.

2. Water your tree regularly while inside the house and water it thoroughly when you take it back outside. Do not let the rootball dry out.

3. Spray your tree with **Wilt Prufe** to help prevent

moisture loss. Spray the tree again just before you put it back outside.

4. Put your tree in a protected area when you take it back outside. The tree may have started to grow so it needs to be climatized before putting it directly in the cold.

By following these simple guidelines you can have a healthy tree to plant after Christmas.

Christmas Tree Critters

Insects, spiders, and other creatures are sometimes brought into the home for Christmas. Both real and Artificial trees occasionally have these pests. A careful inspection of your tree will help detect these little friends early, and may prevent an unwanted infestation later. Some of the most common insects found on Christmas trees are aphids, bark beetles, earwigs, and spiders. None of these pests are detrimental to your home but they are sometimes an unwanted addition to your Christmas decor.



Gift Ideas

For The Gardeners In Your Family



J&L has a good assortment of gift ideas perfect for the gardeners in your family and for the gardeners in your neighborhood. What does your gardener want for Christmas?

- | | |
|-------------------------|------------------|
| Amaryllis Bulb | A New Shovel |
| Windchime | Gardening Books |
| Slogger Gardening Shoes | Candle Warmer |
| Gardening Gloves | Wild Bird Bell |
| Gift Certificate | Wild Bird Feeder |
| Pruning Tools | Plant Stand |

A Load of Manure - delivered next spring of course.

Poinsettia Care

Poinsettias are perhaps the most popular house plants in the United States. Most everyone has at least one or two poinsettias in their home during the Christmas season. Unfortunately, most poinsettias get thrown away right after Christmas. Poinsettias will grow and stay pretty through April and May if they are properly cared for. They will also grow and bloom year after year, if you have the patience to take care of them. The first thing to remember is that the red color you see are bracts, not the flowers. Poinsettia flowers are the small yellow features in the center of the bracts. Poinsettia flowers only bloom for three to four weeks. The bracts however, can maintain their color until the beginning of spring, if the plant is properly cared for.



Most people that throw their poinsettias away right after Christmas wonder why all the leaves turned yellow

and fell off a week or two after they bought them. **Several conditions may cause poinsettias to drop their leaves, most of which can be prevented.**

1. Poinsettias need plenty of light. They have been grown in greenhouses under optimum conditions. Reducing the amount of light makes the plant drop some of its leaves.

2. Poinsettias need plenty of fertilizer. They have been fertilized every few weeks in the greenhouse so you need to keep it up. Fertilize your poinsettias every two weeks with **Blooming and Rooting Fertilizer** while they are under your care.

3. Poinsettias need plenty of water, but they do not like to stay wet all the time. Give your poinsettia plenty of water; enough to fill the saucer. Let your plant sit in water for 30 minutes then drain any excess water still in the saucer. Do not water your poinsettia again until the soil feels dry. The pretty foil pot cover acts like a saucer, be sure to drain excess water left in the pot cover after 30 minutes. Too much water will kill your plant as quickly as not enough water will.

4. Poinsettias do not like drafts; neither hot nor cold. Keep poinsettias away from doors and away from furnace vents.

We have a **Poinsettia Care Sheet** available that gives you more information about growing and keeping your poinsettias looking good. Stop by and pick one up, or download a copy from our website.

Winter Lawn Care

"Don't Leave The Leaves." Rake all the leaves from your lawn. Try to remove the leaves within three to four days after they drop. Some trees drop their leaves all at once while other trees may drop their leaves slowly all winter. Sycamore trees, oak trees, beech trees, and willow trees, are probably the worst at dropping their leaves. Leaves left on the lawn may cause fungus or mold problems in the lawn that are much easier prevented in the fall than cured in the spring. Snowmold is often caused by a layer of leaves left on the lawn too long. If snowmold is a yearly problem, you should apply a fungicide to your lawn after you rake the leaves, after you mow it for the last time, and just before a long-lasting snowfall. If it does snow before you have a chance to apply your fungicide, you can apply it on top of the snow, or wait for the snow to melt to apply it.

Cut your lawn short the last time you mow in the fall. By cutting the grass a little shorter in the fall you reduce the chance of it laying down and creating a snowmold problem during the winter. Do not cut your lawn short



until the last time you mow it for the year.

Container Plants in Winter Weather

Many gardeners want to grow plants in containers for their decks and patios. Unfortunately, many of these containers will not offer your plants enough protection to survive the winter. Example. In many areas Japanese Maples are used extensively in containers on the porch or patio. In our climate they do not survive without some major winter protection. Many Japanese maple roots die if the soil temperature drops below 14 degrees F. If you can protect your Japanese maple, in its container, from getting below 14 degrees F., you can usually have Japanese maple trees grow in pots on your patio. You may have to move the pots into an unheated shed, put them next to the house, bury them in straw, or make a structure to hold straw around them during the winter. This straw may help to keep them above the critical temperature, if not, your tree will die.

Another important part of winter protection is water. Do not let the container completely dry out during the winter months. Water it when it starts to dry out. The best way to water plants in containers during the winter is with snow. As the snow melts just give the container another shovelful.

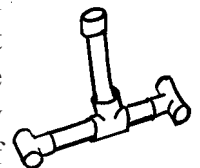
Winter Pond Care

During the freezing winter weather fish may die in a garden pond if a few simple precautions are not taken. Fish do not die simply because a pond freezes over. However, it is a good idea to prevent the surface from freezing solid. A solid layer of ice prevents the exchange of gases from the water to the air. Fish can die from the lack of oxygen if the pond remains frozen too long. Fish can also die from the build up of toxic gases in the water. Organic material on the bottom of the pond (leaves, fish waste, etc.) decomposes during the winter, producing toxic gases. If these gases cannot escape into the air the fish will die.

Fish don't mind a frozen top layer, as long as there's nothing rotting on the bottom layer to poison them. However, just to be safe, try to keep the surface from freezing solid. Use an electric pond de-icer to keep a small opening in the ice or run a small water pump to circulate the water near the surface.

Mice, Gopher & Vole Problems

Last winter was a good example of what happens when we get a snowfall that lasts for an extended time. Rodents love it, it makes their life much easier. They can dig tunnels through snow instead of frozen dirt. They tunnel between the



snowline and soil line, eating the grass crowns as they tunnel. The lawn recovers from this damage quite easily but flowers, shrubs and trees are not as forgiving. Mice, rabbits, gophers, and voles can do a considerable amount of damage during the winter and you will not notice the damage until the following spring when the snow starts to melt.

If you think you might have a rodent problem this winter you should put some rodent bait out early. Do not put it where cats and dogs will find it. You should put it somewhere that it will not get wet. Rodents will not eat spoiled rat bait when there are fresh grass roots or peony roots nearby.

Build a bait station out of PVC pipe to protect your rodent bait from the weather. The bait station will keep the poison dry and it will attract the rodents. They will think they have just found a place to make a home. Buy 3 pvc tees, 1 pvc cap, and 3 feet of PVC pipe. Any size pipe from 1" to 2" will work because rodents are not claustrophobic, they like to live in tight places. Do not glue any fittings together, just push them together. Put the bait inside the pipe and place the bait station in the yard near the shrubs and trees you are trying to protect. You may want to make two or three of these bait stations.

Salt or Ice Melters?

Do not use fertilizer, salt, or any ice melter on concrete less than 1 year old. Use sand, kitty litter, or sawdust to control ice on new concrete.



De-icing salts are a vital part of winter road maintenance, but they can be harmful to most trees and shrubs along the roadside or even along your driveway. You would be amazed how much salt you bring home with you on your car every time you go to the grocery store or to work. This salt has to go somewhere, just try to make sure it doesn't end up in your flower gardens or on your shrubs.

Unfortunately, we have no control over the amount of salt used on the streets or how much salt gets plowed onto the parkstrip. We can, however, control how much salt or ice melter that we use on our own sidewalks and driveways.

The most common ice melter used, the type used on most roads, is sodium chloride (table salt, rock salt, water softener salt). This salt is very effective and inexpensive. Sodium chloride will melt ice even on the coldest days of winter. The sodium in this salt is harmful to plants and can also damage the soil structure. This salt can damage concrete if used excessively. Just look at many of the sidewalks and porches in your neighborhood and you can

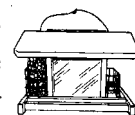
see the damage caused by salt.

Some people like to use fertilizer to melt ice. Fertilizers are safer for plants but some fertilizers are more damaging to concrete than salt is. If you use a fertilizer for melting ice make sure it does not contain any iron. Iron will make rust spots on cement that takes a long time to go away. **Urea** is probably the safest garden fertilizer to use to melt ice. It does not damage concrete, in fact, airports often use Urea on their runways because it does not harm the concrete or the airplanes. Urea has a drawback though, it will only melt ice when the temperature is above 11 degrees Fahrenheit. Below this temperature Urea will not melt any ice. **Ammonium Sulphate** is another common fertilizer that is often used as an ice melter. This fertilizer melts ice until the temperature is -25 degrees Fahrenheit. However, you must be very careful using Ammonium sulphate, because it is very harmful to concrete. It reacts with concrete to create a mild acid that can damage your concrete. Ammonium sulphate can actually damage concrete worse than table salt does, so be careful applying it to melt ice on concrete.

We recommend **Ice Fighter Plus**. It is an excellent alternative to plain rock salt even though it does contain sodium chloride. The salt in this product is coated with a polymer, **Propolyce**, which prevents damage to concrete by inhibiting water from penetrating into the concrete. By keeping the water out of concrete, the freezing-thawing damage caused by salt is reduced. If used correctly, this ice melter will not harm concrete nor will it kill most plants. We have a handout that goes into more detail about the advantages of salt and other ice melters. Stop by for a copy or download a copy from our website.

Wild Birds

If you are one of many bird feeding enthusiasts be sure to take time to learn more about the birds you are feeding. Feed your birds high quality food and food that is also beneficial to them. Most birds love sunflower seeds. They are a 'Bird's Dessert', but they are not always the best food to feed them. If you have too many birds and you want to reduce the quantity, be more selective about the types of seed you put in your feeder. Sunflower seeds will attract all types of birds; safflower seeds and nyger seeds attract only a few types. Nuts and berries attract some of the larger birds. Try different mixes until you attract the birds you want to come to your yard.



Birds are particular about the food they eat. Some birds will scatter all of some types of seed just to get to the sunflower seeds, wasting most of the food in the feeder.

If this is a problem, separate the sunflower seeds from the other wild bird seed. Put out one feeder of just wild bird seed and one feeder with just sunflower seeds. You will have less waste from your feeder and you can control when you give them 'dessert'. Feed your wild birds suet or peanut butter once in a while, they love it and it is good for them. Many birds also enjoy nuts, berries, and fruit.

There is little or no regulation with regard to wild bird food products. This makes it difficult to know exactly what the bag of bird food contains. Are you purchasing the cheaper milo or millet seed or the more expensive vitamin-enriched seed. The **Wild Delight Company** packages several high quality wild bird mixes. Each of their mixes contains vitamin enriched seed. They even have one mix that all the seeds are completely shelled, so there is no mess to clean up. Moldy seed and bread are not beneficial to birds so do not just throw out table scraps to feed birds.



During cold winter weather, one of the best ways to attract birds is to have an unfrozen source of water for the birds to drink. Water will attract wild birds faster than food when the ground water is frozen.

Imagine a fast food restaurant where nobody cleaned the kitchen or tables. Now think about your bird feeder. When was the last time you cleaned it? Salmonella can grow in moldy, wet seed, and in bird droppings. While you don't have to wash your feeder daily, you should clean it regularly. Now is a great time to check your wild bird supplies and make sure they are ready for the coming winter season.

Wild Bird Questions

Q. What do I do about all the seed on the ground?

A. 1. Many seeds have hulls that the birds crack open. They eat the meat and then drop the hulls - Sunflowers, Nyger, Safflowers. To prevent this mess either put a catch tray under the feeder or buy seed that has already been shelled.

A. 2. Check your seed mixture. If the mixture contains a lot of milo or millet many birds will simply drop this seed to the ground. In general, the cheaper the mix the more waste you will have. Try purchasing a waste free mix such as **Total Quisine** or **Nut N Berry** mix.

A. 3. Cook your wild bird seed at 100 degrees for twenty minutes to prevent the seed from germinating. This doesn't reduce the amount of seed on the ground but it does prevent 'weeds' next spring.

Q. How much will birds eat?

A. Birds have a very high metabolic rate and have a body temperature of 109 degrees. They need to eat constantly in order to maintain energy for cold winter weather. Some birds will consume more than their body weight every day.

Q. Will bird's feet stick to metal perches in winter?

A. No, Birds do not have sweat glands in their feet so they will not stick to metal surfaces.

Q. What about moths and insects in the bird seed?

A. Birds love them! Since wild bird seed is not a high priority seed for many companies, it is not cleaned as thoroughly as other food products. Wild Bird Seed is often stored in warehouses that are hot and perfect to breed meal moths, weevil and other seed loving insects. Unfortunately there is not an easy way to keep insects out of Wild Bird Seed. The only real caution about Wild Bird Seed is not to store it near your other foods. These moths will migrate from wild bird seed to Wheaties, Cornflakes and brand new flour.

If you don't like these unwanted additions in your wild bird seed try to buy fresh, high quality seed in clear plastic bags. Make sure there are no insects already in the bird seed. You can store your seed in air tight containers, in cold areas of the garage or shed, or inside your freezer. We, at J&L, try to keep our wild bird seed in the freezer during the hot summer months and in a cold warehouse during the winter, to reduce the amount of these insects, but they still find their way into Wild Bird Seed occasionally.

Protect Your Tender Plants

Plants that do not lose their leaves in the winter (evergreens) need more winter protection than deciduous plants (plants that drop their leaves). Junipers and pine trees may suffer during long, dry periods but they are fairly tolerant of cold and drought. Broad-leaved evergreens (**rhododendron, laurel, oregon grape, etc.**) are affected by extreme temperatures and by moisture loss because of their large leaf surface. When the sun shines on a plant's leaf, the temperature can get as high as 70 degrees, yet the root system remains frozen. As water evaporates from the leaf no water is able to replace it. The leaves may 'freeze dry'. If enough leaves die the entire plant could die also. **There are several things you can do to prevent this type of winter damage.**



(1) Don't let the soil dry out. Water your plants occasionally during the fall. Don't keep your plants wet, just keep the soil moist. A plant that freezes with moist soil will be much healthier than a plant that freezes dry.

(2) Put mulch around the base of your plants to help insulate the soil from hard freezes. Mulch also helps keep moisture in the soil. Wait until the ground freezes to mulch plants with **Soil Pep**, leaves, or with compost. You want the ground to actually freeze lightly, to help the plants become dormant, before you cover the ground with mulch. Do not use grass clippings because they may cause fungal

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or disease problems. Apply one or two inches of mulch around hardy plants and up to six to eight inches of mulch around your tender plants. Newly planted shrubs need more protection than your older shrubs.

(3) Spray your plants with Wilt Prufe. Wilt Prufe is an anti-desiccant; it seals moisture inside the plants and it stops evaporation from the leaves. Wilt prufe is not poisonous and will not harm animals. Spray Wilt Prufe when the temperature is above 40 degrees and will stay above freezing until the spray dries, usually one to two hours. Wilt Prufe is good to use on all plants, especially on 'Broad-leaved Evergreens' and all newly planted shrubs. Wilt Prufe is also great to spray on your Christmas trees to prevent them from drying out so fast inside the house.

(4) If you need to cover your tender plants, cover them with burlap or with a bed sheet. Do not cover plants with plastic. Black plastic absorbs the heat while clear plastic traps the heat. Excessive heat variations during the winter are often fatal to the less hardy plants you are trying to protect.

Lucky Bamboo

The Chinese say that Lucky Bamboo will bring good fortune to your home or business. In Asia, it is given as a gift to those starting a new business, or to someone moving into a new home, or to anyone at any time of celebration. Since Lucky Bamboo requires no natural light it is especially nice in a home or office; in an area where no other plants can grow. It is very easy to grow and will live for many years. Unlike its name, Lucky Bamboo is not a bamboo at all; it just looks like bamboo. Lucky bamboo is actually a dracena - *Dracaena sanderana*.

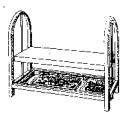


Ancient Chinese tradition has it that the number of lucky bamboo stalks in a container have different meanings and bring different beneficial factors into your life. Everyone loves to receive good luck and beautiful decorations for the home or office. Lucky bamboo is the perfect gift, it represents good luck and it is extremely easy to care for. Give one to your friends and neighbors.

We have a Lucky Bamboo Care sheet available, stop by and pick one up, or download a copy from our website.

Indoor Plant Lights

The gardening season is far too short for many gardeners. By using indoor plant lights, the gardening season can continue despite the weather conditions or the light limitations. You can use plant lights to start seedlings and cuttings, to overwinter tender plants, or to grow a special collection of plants such as succulents, orchids, or African Violets.



The basic requirements for indoor plant lighting are

either fluorescent light tubes or incandescent light bulbs. The fluorescent lights are much better than the incandescent bulbs. Always buy full-spectrum light tubes when possible. These tubes are more expensive than the common fluorescent tubes but they have the full complement of light rays that plants utilize during their growth cycle.

You can buy pre-built light carts. We have many styles to choose from, ranging from table top fixtures to moveable carts on wheels. You can also build your own light cart to meet your specific needs. Be sure you can adjust your light fixtures whether you buy a pre-built cart or build your own. You will need to be able to change the light placement for different kinds of plants.

You must consider the light requirements of your plants to determine the correct light placement. The closer plants are to the light source the higher the intensity of the light they receive. Seedlings and other plants with high light-intensity needs, such as blooming plants and cacti, need the light to be within four to six inches of the leaves. Foliage plants, tolerant of lower light levels, will tolerate the light being a foot or more away from the leaves and still grow well.

Wherever you choose to place your plant lights, make certain the air temperature is suitable for the plants you're cultivating. It would be futile to grow tropical orchids, which like warmth, in a cold basement even with lights. Annual seedlings may germinate more rapidly in a warm environment, but their growth will be stockier and healthier if the temperature is kept cooler after germination.

Since plants require a period of darkness for good health it's wise to put your lights on timers, otherwise you may forget to turn them on and off as needed. **Plants need fourteen to sixteen hours of light and they need eight hours of darkness.**

Boxelder Bugs

Boxelder bugs, elm beetles, and root weevils are all looking for a nice warm home for the winter. Most insects are harmless, but they can become a nuisance. They often congregate in large numbers on the south side of your home and then try to migrate inside, where it is a little warmer. As the temperature gets cold they will find any crack, hole, or open door to crawl through to find warmth. Prevent these bugs from getting inside by making sure all the cracks and crevices are properly caulked or sealed; the door threshold is notoriously a major entry point for many insect invaders. Check your screens to make sure they are secure. Unfortunately you cannot keep unwanted insects from entering open doors so you will still have to contend with

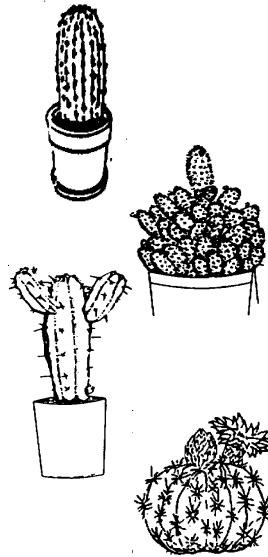


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Your Choice of Variety**



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the occasional visitor.

Chemical control for these types of pests is difficult because they are not feeding on anything and they are preparing to hibernate for the winter. All chemicals must come in direct contact with each bug to kill them, and there is no lasting effect for controlling these nuisance pests. You have to spray often to kill boxelder bugs. One of the best chemicals we have found to kill these unwanted pests is **Eight**, a fairly safe, organic insecticide. This chemical kills insects fast and does not stain your siding or brick. **Sevin** and **Malathion** are also effective in controlling these insects and most other nuisance pests. Spray weekly until the insect numbers are reduced and then spray monthly to keep any stragglers under control.

White Paint

Many gardeners wonder why fruit farmers paint their tree trunks white. Why not black, or some other color that attracts heat?



Plants do not produce heat. Each plant's temperature is at or near the air temperature all the time. Paint, tree wrap, and blankets serve a different purpose for plants than for animals. These protective devices help prevent the plant from getting too warm in the winter, not too cold. If a plant gets too warm in the day and then gets too cold at night there is a much greater risk of winter injury than if the plant stays cool all the time. You will often notice that

more plants die on the south side of a house than die on the north side, for this very reason.

The purpose of white paint, or white tree wrap, is to reflect rather than absorb the sun's warmth. Snow reflects the sun's rays onto the brown tree bark, making the bark warmer than it should be. Your goal is to reverse the effect of the snow and reflect heat away from the tree trunk.

Wrapping Trees

The only time wrapping a tree is really necessary is when your tree is young - that's when it's most vulnerable. Wrapping a tree helps protect it from winter sunburn. Even though the temperature is cold, young trees can get sunburned on a sunny day. If you have ever been ice fishing or skiing on a bright, sunny day you know how easy it is to get sunburned. Thin-barked trees such as peach, nectarine, locust, flowering cherry, linden, and some Japanese maples are especially sensitive to sunburn, even when they are older. The best time to apply tree wrap is in the late-fall. Remove the tree wrap early in the spring to allow for new growth during the season. If you leave your tree wrap in place year round, it can hinder growth. It can also become a home for insect pests.

Houseplants that Clean the Air

Do you remember what you learned about plants in your high school biology class? The part where you learned that all plants absorb carbon



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dioxide and produce oxygen?

Besides absorbing carbon dioxide, many houseplants can also absorb other chemicals that are common inside houses. **Formaldehyde, Benzene, and Trichloroethylene** are three of the most common chemicals found inside our houses. These chemicals, if present, are usually only found in very small quantities. They may not even be detectable in most homes, especially during the summer months when the windows and doors are open. Winter, when the doors and windows are kept closed, is the most likely time these chemicals may build up in the air. Many houseplants can absorb these chemicals and eliminate them.

Formaldehyde may be found in particle board, plywood, insulation, paper products (paper bags, paper towels, tissue paper), and in permanent press fabrics.

Benzene may be found in inks, paints, oils, plastics, rubber products, dyes, pesticides, detergents, pharmaceutical products, and in gasoline.

Trichloroethylene may be found in inks, paints, lacquers, varnishes, and in adhesives.

Some of the most popular houseplants are excellent air fresheners. Poinsettias can help remove formaldehyde. Chrysanthemums can remove benzene. Spider plants,

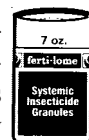
Philodendrons, Aloe Vera, and Dieffenbachia can all remove formaldehyde. English Ivy, Pothos, and Dracena can remove Trichloroethylene.

It's hard to imagine that something as simple as a houseplant can keep your home a little healthier; but it can. Of course, houseplants by themselves can't make your home completely chemical free, but they can make a difference. The more plants you have in the home the cleaner the air will be. The longer you keep your plants inside your house the more effective they will become. No matter where you live you can breathe a little easier when you surround yourself with **Mother Nature's Natural Air Fresheners - Houseplants.**

Fungus Gnats - A Nuisance Pest

Controlling insect pests in houseplants can be aggravating and frustrating, especially fungus gnats. Fungus gnats generally do not kill houseplants. The adults are considered a nuisance pest because they just lay eggs, torment people, and die; they do not feed on the plants. Before they die, however, they do make themselves a nuisance. Adult fungus gnats are attracted to sources of carbon dioxide, which is why they like to fly around your mouth and nose. Fungus gnat larvae are the main problem and they feed on fungus that naturally grows in soil and in plant saucers.

The first step to get rid of adult fungus gnats is to eliminate



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the source. The adults will eventually disappear if you eliminate the larvae. Wash all your plant's saucers and the outsides of all your pots with a disinfectant of 10% clorox and water. Put a penny in the saucer after you clean it. The copper in water will sometimes control this insect. You can also apply an insecticide in the potting soil to kill the larvae. Some people will mix an insecticide, such as Permethrin, in the water and drench the soil every two or three weeks. We recommend spreading **Fertiloame Systemic Houseplant Insecticide Granules** on the surface of each pot, covering it with a thin layer of soil, and watering it in. Both of these treatments produce an undesirable odor that may linger around the house for a few days so be sure to move the plants to an appropriate area before treating the plants.

Sometimes you can control fungus gnat larvae by just letting the soil dry out between waterings. The larvae need moisture to survive. Another method of fungus gnat control is to cover the soil with a 1/2" layer of coarse sand or fine gravel to smother the eggs and young larvae. This covering also prevents adults from laying more eggs in the soil.

Don't Forget the Lawnmower

Before you are finished for the year, be sure you check your lawnmower, lawn edger, chain saw, and any other gas powered equipment in your shed. If you do not drain the gasoline from the engine, or put fuel stabilizer in the gas, you will be making a quick trip to the lawnmower repairman next spring. The gasoline will plug up the carburetor and the lawnmower will be extremely hard to start.

How Plants Avoid Freeze Stress

Have you ever wondered how trees and shrubs can survive minus 40 degree F temperatures and still come through in the spring with a flush of green growth. 'Mother Nature' has a well designed plan for everything, including the winter preservation of trees and shrubs.



Our native trees and shrubs are acclimatized to our local environment. They respond to day length and to temperature changes as an indicator of when they should go dormant. A tree newly transplanted from Oregon or Southern California may not survive our climate simply because they are not synchronized with our local growing conditions or seasons. Plants growing in each location are governed by the day length and temperature of that area. When planted outside their area, they must adapt to the local growing conditions as quickly as possible to survive. If they don't respond in time to the dormancy indicators, they may not survive, even though they are hardy for the new location. That is why the first winter is the hardest on all newly planted shrubs and trees. Once they are acclimatized to local growing conditions they survive the winter conditions much better.

Adaptation of plants to certain regions has developed over a long time, thousands of years. If we were to take the same type of tree that grows naturally in Oregon and plant it in our region, the tree from Oregon may not survive our much colder climate. For example, a Noble Fir will not survive in Utah while a Concolor Fir grows just fine in both Utah and Oregon. Both are fir trees, but one has adapted to the cold and the other has not. This is the direct result of the Noble fir tree not being able to acclimatize itself to our winter conditions. The tree cannot develop hardy, dormant buds and plant tissue before the onset of freezing temperatures. The tree dies because of freeze stress.

Freezing, or not freezing of a plant, is determined by the location of where ice forms within the plant itself. If the formation of ice occurs within a plant cell, that cell will inevitably die. If ice forms outside of the cell the plant should be just fine. An example of how a cell responds to damage to its cell wall can be seen in lettuce. A professional chef tears lettuce apart instead of slicing it with a knife. When cut by a knife, the damaged lettuce cells will turn brown almost instantly. The lettuce leaves do not turn brown when they are torn apart because the plant tissue separates around the edges of the plant cells, without damaging the delicate cell membranes.

Our native species of trees and shrubs prepare themselves for sub-zero temperatures in one of two ways. These ways are either by *freeze-induced cell dehydration* or by *supercooling cellular water*.

Freeze Induced Cell Dehydration

To avoid intracellular (inside the cell) ice formation, the largest part of our most hardy tree and shrub species rely on freeze-induced cell dehydration. These species permit ice to form outside of the cells - between the cell walls. The water starts to freeze at temperatures just below 32 degrees F, forming ice just outside of the cells. Sugars and other organic molecules inside the cell help prevent ice from forming inside the cell as quickly as it forms outside the cell in much the same way as salt in water slows salt water from freezing as quickly as plain water.

In comparison to water, ice is dry. The humidity outside of the cell will be lower than humidity inside the cell. Water from inside the cell is then drawn out of the cell, in vapor form, in an attempt to equalize humidity levels between the outside and inside of the cell. The dry ice draws water from the cell much like a dry paper towel absorbs water. As the temperature continues to drop, water is continually drawn out of the cell and freezes onto the dry ice

crystals outside of the cell until there is almost no free water left within the cells. Many of our native species, in the Unita Mountains, can withstand temperatures as low as -80 degrees F without suffering any damage because of this method of winter protection.

However, re-formation of ice can occur inside the cells of plants, including these hardy plant species, when the winter weather raises temperatures above 32 degrees F. Warm temperatures allow water to re-enter the cell. Then, a sudden temperature drop of more than 2 degrees per hour can result in intracellular ice formation because the water may not be able to leave the cell fast enough. These cells will die, resulting in injury or death to the tree or shrub.

This is the major cause of winter injury when the weather changes from cold to hot to cold too often during the winter. The plant's cells cannot keep up with the changes in weather. This type of injury happens more to plants on the south side of a house than to the same type of plants on the north side of the house. Plants on the north side may not show any winter injury even though they had the same winter weather as the plants on the south side of the house.

Supercooling Of Water

In some native species of trees and shrubs, formation of ice in a cell is prevented by 'supercooling of water'. In order for an ice crystal to form, it must have a speck of dust, or any microscopic impurity, in the water to form that first ice crystal (known as the nucleus). Once the nucleus has formed, other water molecules lock onto it causing rapid growth of ice crystals. When there are absolutely no impurities in water, water can be cooled to -40 degrees F. without freezing. This is known as 'supercooling of water'. Some tree and shrub species have absolutely pure water within their cells and avoid winter damage by 'super cooling of water'. Needless to say, if the temperature should drop lower than -40 degrees F, ice formation would occur within the plant cells and they would die, resulting in frost damage or death of those plants.

As you can see, Mother Nature is pretty smart in protecting her plants during the cold winter weather.

Where do bugs go during the winter?

As fall fades into winter, yards and gardens should have been cleaned up and plants should have gone dormant. **What about the insect pests?** Most insects will be protected and will be ready to reappear next season. Many common insect pests actually overwinter in plant debris left in



the garden, so it does pay to clean the garden at the end of the season. For example, cabbageworms that may have infested your cabbage and broccoli plants during the summer spend the winter as pupa in plant debris left in the garden. Cucumber beetles overwinter as adult beetles in the same debris. The tomato hornworm also spends the winter as a pupa in plant debris. Lawn grubs safely rest as a larvae in the soil just below the frostline in the soil. Rotovating the soil helps to kill these pests.

Other nuisance insects (boxelder bugs, snails, centipedes, earwigs, millipedes) overwinter in sheltered areas such as under plastic or weedcloth left in the gardens, in the siding of your house or in a pile of firewood. These insects may also become active pests during the warm spells of winter.

Some caterpillars overwinter on the actual tree they eat during the summer. Eggs are deposited in cracks in the bark or in the crotches of branches, ready to hatch next spring. Aphids also deposit their eggs in these same areas. You may have seen a willow branch completely engulfed with large black aphids in the fall or an apple tree completely covered with the cottony covering of the woolly apple aphid.

Most borers that attack trees and shrubs spend the winter as larvae inside the host tree. They spend much of the warm weather, during the winter, tunneling around and eating the tree.

Spend some time this fall controlling these pests and you may save yourself some time and money next spring. Spray the trunk of all the trees that you know that have these insects. Dormant oil is a safe organic insecticide that effectively kills both larvae and eggs, if applied at the right time. Nothing kills eggs that are completely ready for the winter weather but if you spray before the eggs are ready for winter, or just as the eggs are starting to hatch in the spring, you can have some pretty good control.

Mycorrhizae

We have been looking for a homeowner size of Mycorrhizae for several years. Mycorrhizae in an exceptional product that benefits all types of plants; flowers, vegetables, shrubs, and trees. The word mycorrhizae comes from two Greek words 'mykes', meaning fungus and 'rhiza', meaning root. Mycorrhizae are specialized fungi that establish symbiotic relationships with plant roots.

The mycorrhizal fungus penetrate plant root tissues and the surrounding soil. The fungi capture and use nutrients from the soil, particularly nitrogen and phosphorus. They also share these nutrients with the roots of the plant.



In return, the host plant provides many carbohydrates, sugars and other nutrients for the fungus to use in its growth and development. The plants also help the fungi grow and move through the soil as the root system develops.

Mycorrhizae are also good soil-binding agents. They tend to accumulate in the soil and remain in the soil for a long period of time. The fungi 'roots' are sticky and physically hold soil particles together. In addition, plant hair roots also secrete a similar sticky substance. Between the two of these sticky substances the soil particles are bound together to form semi-stable aggregates, making more air spaces in the soil, allowing roots to penetrate the soil more easily, and helping the soil to become more friable.

Mycorrhizae helps plants absorb nutrients, assist plants to become more drought tolerant, and helps to improve the garden soil structure. We now have mycorrhizae available for homeowners in three different products; Bumper Crop, Dr. Earth Organic Fertilizers, and Soil Moist. This is one new product you should use in your gardens this next spring - your plants will love it!



Household Ants

While in South Africa I once left an open candy bar on top of my dresser. Within a few hours there was a trail of "BIG" ants going up my wall, across the ceiling and down the other wall into the floor with large pieces of my candy bar. Have you ever noticed a crumb from yesterday's sandwich sprouting legs and moving across the kitchen counter?



What was yesterday's crumb is now a feast for an army of ants. Ants usually take regular routes to and from their nest and their food by establishing a chemical scent trail. Instead of leaving bread crumbs to find their way back home, they leave a scent behind to find their way back to the bread crumbs.

Ants can be common pests in homes. Damage from ants varies. Most ants are primarily just a nuisance; they cause little damage. However, carpenter ants can weaken wooden structures. Unlike termites, ants nest in wood but they do not eat the wood.

Ants have a wide range of nesting habits and food preferences. Some ants build nests in soil producing characteristic mounds while other ants nest in homes behind moldings, baseboards, countertops and similar places. Still others, like carpenter ants, nest in decaying wood.

Not all ants found outdoors become pests indoors. Outdoors, ants are important in aerating the soil and in seed dispersal of many wildflowers. Outdoor ant colo-

nies generally do not require control.

Inside, ants become a nuisance. They like to eat sweets, fats, starches, grains, and other foods, including meat. That's why they hang out in the kitchen. They may nest either inside or outside. They can nest in walls, under floors and even in potted plants. Most indoor ants do not cause any structural damage to buildings.

Spraying a pesticide on the occasional ant foraging for food is only a temporary fix. However spraying ant crawl ways, tunnels, and the ant hill may help eliminate the problem. Permethrin pesticides provide a safe chemical control for ants if used correctly. Two other excellent indoor sprays are **Bioganic Crawling Insect Killer** and **Concern Citrus Home Pest Control**. These are not chemicals and they do not leave a chemical residue. In fact, **Bioganic Crawling Insect Killer** has a strong clove smell that is quite pleasant and **Concern Citrus Home Pest Control** has a pleasant citrus odor.

Ant traps and baits can also be effective. Put the traps under the sink, in the food closets, or behind the drawers in your kitchen. The **Grant Company** makes an excellent ant trap that attracts ants and then sends the poison back to the ant hill with the soldiers. Do not set baits where small children or pets can reach them. A mixture of boric acid and honey or syrup is also an attractive bait.



Insect Problems in Firewood

Firewood, in addition to being attractive as a source of energy, is also attractive to insects as food and for shelter. For the most part, infested wood will not lead to problems. However, many questions arise from homeowners when they hear noises coming from their wood piles, see boring dust being pushed out of the wood, or find insects crawling around or flying from the pile.



There are four types of wood-infesting insects: ants, termites, wood borers and bark beetles. Generally speaking, the first three groups are found in the older dead material, whereas the bark beetles are found in living trees, or in trees that have recently died.

Ants and termites are generally not a problem in our area unless you bring a lot of them home from the mountains. Termites are small, white insects that look like ants. Both ants and termites work in older wood and can move into your home if the conditions are right. Termites shun light but otherwise work in similar locations as ants. Burn the wood as soon as these insects are found or move the wood away from your home. You can also spray with an

insecticide, and cover the wood pile with a plastic tarp to keep the fumes, and insects, inside the tarp.

Wood borers are not a problem to houses but they can cause homeowners anxious moments when their feeding noise is detected, or when their dust from 'boring' begins to pile up around infested firewood. Also, the adults emerge from the wood and fly toward a light source, typically the windows. These insects are either beetles or non-stinging wasps. They can be a problem if you have the same type of plants in your yard because the wood borers prefer dying or dead trees of the same species. However, the chance of borers from firewood finding suitable material to infest, once removed from the mountains, is remote. Generally, burning firewood within a year after it is gathered will prevent this problem.



Bark beetles in firewood present the biggest hazard to living trees but do not affect the home. Bark beetles live in the bark or in between the bark and the wood. Problems arise when homeowners stack infested firewood next to living trees of the same species. For instance, a lodgepole pine, infested by the pine beetle, stacked against another living pine could lead to infestation of that pine plus any adjacent pine trees. When bark beetles successfully attack a tree, an odor is released to which other bark beetles respond. Therefore, a greater hazard may develop if similar bark beetles are in the area.

Several options are available to control bark beetles. One option is to strip the bark off the firewood. Another option, for infested firewood with the bark still attached, is to lay the firewood in an open area exposed to the summer sun for 2-3 days and then turn it to expose bark on underside. The high temperatures kill insects in or under the bark. Another technique is to cover the infested wood completely with clear plastic during summer to obtain lethally high temperatures under the plastic. Chemical insecticides are also available for bark beetle control. However, to limit risk of exposure to toxic fumes when burning firewood, make sure your fireplace is properly equipped to handle the fumes, or wait long enough for the insecticide to dissipate before burning it.

Humic Acid

Humic acid is a natural soil stimulant processed from some of the most concentrated organic materials available. Humic acid usually is composed of 50% carbon, 40% oxygen, 5% hydrogen, 3% nitrogen, 1% phosphorous, and 1% sulphur. Humic acid will vary from source to source but most humic acid was formed



when trees and vegetation underwent compaction and heating many thousands of years ago. Over the ages this organic material was slowly carbonized and became coal. During the compaction process many of the organic acids and esters contained within the vegetation were squeezed out and formed a pool on top of the coal. This pool dried and aged, and became a layer known as shale. Because of its vegetative origin, this material is very rich and benefits plants when incorporated into the soil.

Humic acid helps chelate many nutrients and bind them to soil particles. Chelated nutrients that are attached to soil particles are easier for plants to absorb and use. Magnesium, iron, calcium and many other 'trace elements' are just some of the nutrients that humic acid helps plants utilize more effectively. Humic acid helps to make the fertilizer you add reach the plant easier and it also helps to release nutrients that are already in the soil that your plants have not been able to use.

Winter Chemical Storage

Your chemical storage area should be secure from unwanted visitors, both human and animals. Good lighting and ventilation are important to consider. Proper ventilation can prevent volatile chemicals from contaminating other materials in storage. Store flammable products outside living areas and away from ignition sources. Keep chemicals and fertilizers cool and dry. Extreme temperature variations can cause unwanted problems such as frozen, ruptured containers, or hot, volatile gases. Too much humidity or moisture may cause paper bags and metal containers to disintegrate prematurely. Do not store bags of fertilizer directly on the floor as it can absorb moisture. Wet fertilizer turns into hard bricks making it unusable.



Store all chemicals in their original containers that have legible labels. Do not ever transfer chemicals into an empty food container. Do not use an empty pesticide container to store food or water, even if the container has been thoroughly washed. Do not store pesticides near food, medicine, or cleaning materials.

One way to minimize pesticide storage problems is to plan ahead and buy fertilizers and pesticides one season at a time. The small containers that seemed 'expensive' in the spring may actually be the 'best buy' in the fall.

We have a copy of this newsletter as a PDF on a CD. The CD also contains the last three year's newsletters, and all our gardening handouts that you see listed on this website. We have this CD available for purchase at \$9.98.

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