

"Lett-uce" Inform You



February 2011

Come Learn with Us in 2011

Common Turf Myths: BUSTED!

Tuesday, February 22, 7:00 – 9:00 pm at the Elizabeth Middle School cafeteria. How often have you heard that watering at night encourages diseases, thatch comes from grass clippings, bluegrass uses more water, and pesticides kill soil microbes in your lawn? Attend this seminar and learn the real truths! If you have a lawn, you won't want to miss this seminar!

Guest Speaker will be Doctor Tony Koski, Extension Specialist Turf Professor from Colorado State University (CSU)

Sponsored by: CSU Extension Elbert County Master Gardeners

Please call the Elbert County Extension Office to pre-register by Monday, February 21. The fee is \$5.00.

What firm produced the first garden catalog with pricing?

Telford family, Yorkshire, UK in 1775; previously, listings from firms had no prices.

Have you spent your winter browsing through all of the plant and seed catalogs you have received? Do you know what you are going to plant this year? It may be snowing and cold right now, but planting time will be here before you know it. Don't let it sneak up on you and not be prepared.

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Plants for your Garden: The Colorado 2011 Plant Select® Program

By Audrey Steffan,
Colorado Master Gardener

Every year, Plant Select® chooses new and/or underutilized plants that are proven to be good species for our region and for different types of landscapes. These plants are evaluated on their ability to thrive in the many garden situations of the Rocky Mountain region. The plants are tested for their ability to grow in challenging climate conditions, their uniqueness, their disease and insect resistance. The plants will also need to have the ability to flourish in low water conditions, be noninvasive and provide a long season of beauty in the garden or landscape.

Two of the 2011 winners are new to horticulture and have proven themselves to be extremely hardy in the regional trials. They are:

- Blonde Ambition blue gramma grass** (*Bouteloua gracillis* 'Blonde Ambition')
- Avalanche white sun daisy** (*Osteospermum* 'Avalanche')

The other five 2011 winners are plants that have grown or been known for years but not readily used in the regional landscapes. They are:

- Baby blue rabbitbrush** (*Chrysothamnus* [*Ericameria*] *nauseosus* var. *nauseosus*)
- Colorado desert blue star** (*Amsonia jonesii*)
- Golden Storksbill** (*Erodium chrysanthum*)
- Grand Mesa Beardtongue** (*Penstemon mensarum*)
- Russian hawthorn** (*Crataegus ambigua*)

Stay tuned for an article about each winner in our newsletters throughout the summer or for additional information and to find retailers that carry the Plant Select® plants visit their website at <http://www.plantselect.org/>

Russian hawthorn *Crataegus ambigua*

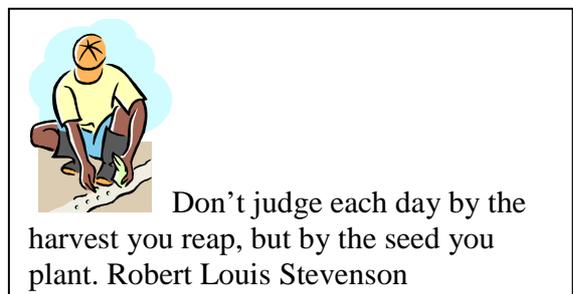


This nearly perfect small tree traces its American horticulture origin to the Cheyenne Experiment Station in Cheyenne, WY. It has beautiful golden yellow exfoliating bark with twisted branches. Due to this coloring it makes an attractive tree even in the winter, but beware it has sharp half inch thorns. The tree foliage is a medium green with white and pinkish cluster flowers in the spring followed by beautiful red fruit in the fall. Unfortunately, the flower clusters only last about 10 to 14 days. In the fall the foliage will turn yellow making it great landscape artistry.



The Russian hawthorn tree will grow approximately 12 to 24 feet in height and has a spread of 6 to 12 feet. It prefers full sun, but will tolerate partial shade and once established has very low water needs. The hardiness zones are 4 – 9 up to 8,000 feet in elevation.

If you choose to add this tree to your landscape, the birds will love you as it is a favorite for food as well as protection.



Hydroponics

Soilless Gardening

By Steve Delgadillo
Colorado Master Gardener



This illustrates how simple the process can be.
My wife is currently growing catnip for our cats.



This illustrates how serious the process has become.
NASA researcher checking hydroponic onions with Bibb
lettuce to his left and radishes to the right

Hydroponics comes from the Greek words hydro meaning water and ponos meaning labor. This is a method of growing plants using mineral nutrient solutions, in water, without soil.

Researchers discovered in the 19th century that plants absorb essential mineral nutrients as inorganic ions in water. In natural conditions, soil acts as a mineral nutrient reservoir but the soil itself is not essential to plant growth. When the mineral nutrients in the soil dissolve in water, plant roots are able to absorb them. When the required mineral nutrients are introduced into a plant's water supply artificially, soil is no longer required for the plant to thrive. Almost any terrestrial plant will grow with hydroponics. Hydroponics is also a standard technique in biology research and teaching.

Terrestrial plant means a plant of the earth or simply one that grows out of the ground. The earliest published work on growing terrestrial plants without soil was the 1627 book, *Sylva Sylvarum* by Sir Francis Bacon. Since that time there have been many continuing studies done on the subject in many different ways. Growth of

terrestrial plants without soil in mineral nutrient solutions was called solution culture. It quickly became a standard research and teaching technique and is still widely used today. Solution culture is now considered a type of hydroponics where there is no inert medium. Hydroponics has other advantages including the fact that the roots of the plant have constant access to oxygen and that the plants have access to as much or as little water as they need. This is important as one of the most common errors when growing is over and under watering, and hydroponics prevents this from occurring as large amounts of water can be made available to the plant and any water not used, drained away, recirculated, or actively aerated, eliminating anoxic conditions which drown root systems in soil. In soil, a grower needs to be very experienced to know exactly how much water to feed the plant. Too much and the plant will not be able to access oxygen; too little and the plant will lose the ability to transport nutrients, which are typically moved into the roots while in solution.

Advantages

Some of the reasons why hydroponics is being adapted around the world for food production are the following:

- No soil is needed
- The water stays in the system and can be reused- thus, lower water costs
- It is possible to control the nutrition levels in their entirety- thus, lower nutrition costs
- No nutrition pollution is released into the environment because of the controlled system
- Stable and high yields
- Pests and diseases are easier to get rid of than in soil because of the container's mobility

Today, hydroponics is an established branch of agronomy. Progress has been rapid, and results obtained in various countries have proved it to be thoroughly practical and to have very definite advantages over conventional methods of horticulture. The two chief merits of the soil-less cultivation of plants are, first, much higher crop yields, and second, hydroponics can be used in places where in-ground agriculture or gardening is not possible. (Continued on page 4.)

Hydroponics

(Continued from page 3.)

Disadvantages

The hydroponic conditions (presence of fertilizer and high humidity) create an environment that stimulates salmonella growth. Other disadvantages include pathogen attacks such as damp-off due to *Verticillium* wilt caused by the high moisture levels associated with hydroponics and overwatering of soil based plants. Also, many hydroponic plants require different fertilizers and containment systems

The two main types of hydroponics are solution culture and medium culture. These are topics for other articles on this subject. Be sure to look for the next issue of "Lett-uce Inform You" when the topic will be "Solution Culture; the Nutrient Solution"

For more information call the CSU Extension, Elbert County Master Gardener office at (303) 621-3162, ask for [fact sheet no. 7.238 Container Gardens](#).

Raspberries (*Rubus idaeus*)

By Aija Tobiss
Colorado Master Gardener



Types: There are two types of raspberries; summer bearing and fall bearing. **Summer bearing** varieties produce flowers and fruit on canes that grew the previous year. In Colorado they produce berries throughout the month of

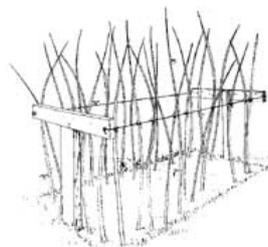
July. **Fall-bearing** produce berries on new cane growth produced in summer along the upper portions of canes from mid August until freezing nighttime temperatures.

Planting: Raspberries require good slightly acid soil with good drainage and three inches of water a week, more as berries ripen. Red and yellow raspberries are propagated by root suckers and sold as bundles of 12 to 18 inch section of a dormant cane with a large root attached. Before planting soak bare root plants in water for five hours to overnight. Plant them in spring 2 to 3 feet apart. After planting, cut the tops to 4 to 6 inches to the ground.

Pruning: Canes should be removed after they have fruited. Remove canes of summer-bearing varieties by cutting them off at the ground after they bear fruit. Dispose of canes as they may harbor insects or disease.

Fall bearing varieties can be cut to the ground in early spring. In spring remove dead and weak canes and winter kill tips.

Varieties: Selected varieties of red and yellow raspberries can be successfully grown in Colorado up to 8,500 feet elevation. Colorado State University recommends red and yellow raspberries for general cultivation. **Summer bearing varieties:** Nova, Killarney, Boyne, Latham, Newburgh and Titan. **Fall bearing:** Autumn Britten, Anne (yellow) Polana, Jaclyn, Joan-j (nearly thorn less), Himbo-Top, Redwing, August Red, Heritage, Fall Red, Fall Gold (yellow) and September.



Trellising: Some kind of support is necessary as the canes will flop to the ground and it will be difficult to harvest and control weeds.

Diseases and Insects: To avoid problems plant only disease-free raspberry varieties. During hot weather raspberries may become infested with Spider mites. Spider mites feed on the underside of leaves. They can be recognized by tiny yellow spots on the leaves which will turn brown later. According Colorado State University, raspberry cane borers have been reported in Colorado. The symptoms of these borers are the wilting of tops of canes. These infested canes must be removed.

For more information consult the following Colorado State University publications: [Fact sheet 7.001 "Raspberries for the Home Garden"](#). [Planttalk 1218 "Raspberry Pruning Demystified"](#) and [Planttalk 1207 "Raspberries"](#). You may request the information by calling the Elbert County Extension Office or access them at the CSU website <http://www.ext.colostate.edu/pubs/pubs.html>.

Let us be grateful to people who make us happy. They are the charming gardeners who make our souls blossom. Marcel Proust

Real Life Vampires: Bed Bugs and Bat Bugs

By Raylene Owen
Colorado Master Gardener

From CSU Home and Garden Fact Sheet no. 5.574, CSU Wildlife Master Manual: Small Mammals: Bats F-1 to 25, and The Denver Post January 6, 2011, Electa Draper



The current popularity of vampire movies may hold a fantasy thrill, but a very real horror show is being staged by the resurgence of a genuine blood sucking menace, the bed bug. The

Cimicidae, is a small family of bloodsucking insects. This family contains the human bed bug, *Cimex lectularius*, which is the best known of this group. Also in this family are bat bugs, *Cimex pilosellus*, swallow bugs, *Oeciacus vicarius*, and poultry bugs, *Haematosiphon indorus*.

The bite of these bugs is often painless, but toxic saliva which is injected during feeding can later cause severe itching and inflammation in the form of welts. Some people are more sensitive to this toxin than others. Feeding generally lasts from 5 to 10 minutes and the bugs feed every 3 to 7 days. A line of two or more welts close together is the characteristic pattern that the feeding of these bugs produces. Bed and bat bugs are not known to carry diseases.

Much has been written recently about bed bugs, but a close relative, that is less well known and can be found in our rural county, is the bat bug. Bat bug populations that are found in homes are carried there primarily on bats, birds (such as pigeons) or small mammals. Typically, bat bug infestations originate from animal populations that have established nests in attics, walls, or around buildings. Bat bugs can also invade homes from bats using bat houses that are attached to human dwellings. When the animal hosts leave or die, bat bugs, looking for a host, can invade living areas through any available crack or crevice, such a light fixture.



Bat bugs can be easily mistaken for bed bugs. Bat and bed bugs both have an oval body, with a short, broad head, broadly attached to a broad, flat body, making it easy for them to fit into narrow

crevices. Adults are 1/4 to 3/8 inch long and reddish brown, resembling a small apple seed. The wings are reduced to small pads. After taking a blood meal, they bloat and may change enough in size, shape and color to look like an entirely different insect. Nymphs, the immature stages, resemble the adults in shape but are much lighter in color ranging from yellow to the youngest being almost white. Nymphs are transparent and a blood meal can be seen in the gut as a dark area.

Adult females deposit eggs in any available crack or crevice, laying approximately 100 eggs per female. Eggs hatch in 6 to 17 days. The newly hatched nymphs feed as soon as food is available. Complete development of bed and bat bugs averages 6 weeks, depending on environmental factors and food availability. Adult bed bugs can live for a year or more in a warm house and can breed continually. Bat bugs often cease development during the winter months when their animal hosts are absent or dormant. In addition to the insects themselves, evidence of bugs would be dark spots of fecal matter or blood and the cast skins. Glue traps used to capture cockroaches are excellent means of detecting these bugs. Place these next to baseboards and other places frequented by these insects.

It is important to identify the type of bug present. CSU [Fact Sheet no. 5.574](#) has a key for identifying bed and bat bugs, but it is not always easy to tell the difference. In doubtful cases specimens, securely contained or preserved in alcohol, may be brought in to the Master Gardener office for identification. These may be referred further to the entomologist at CSU. In order for control to be most effective, proper identification will determine where to direct your efforts.

For bat bugs, treat the original site of infestation, typically roosting areas in attics. The first and most important step is to find out where the bats or other animals are gaining entrance to the attic or building and then to exclude the animals. If animals are present, it is important not to trap them in the attic or walls. Use one way excluders then seal the opening after the animals are gone. Control should be initiated before young are born or after they are able to fly or leave the building. It is important to remember that bats and many birds are endangered and protected. Bats play a very important role in the reduction of flying insects, particularly mosquitoes. (Continued on page 6.)

Real Life Vampires: Bed Bugs and Bat Bugs

(Continued from page 5.)

Secondly, you may need to coordinate the first step with insecticide treatments, because movement of bat bugs into the living area might occur after removal of the animals. An aerosol release (bomb) can assist in this. Currently products for such use contain natural pyrethrins or derivative products such as bifenthrin, tetramethrin or tralomethrin. Insecticidal controls should also include residual sprays directed at cracks and crevices, areas around light fixtures and any other places that bat bugs can use to migrate from the attic into the house. For linens and clothing, 10 to 15 minutes in a hot clothes dryer can kill these bugs. Boric acid powder or diatomaceous earth can be lightly dusted on appropriate surfaces such as affected beams. If the animal is a bird, nest areas can be treated with insecticide; however, some insecticides, such as diazionon, and chlorpyrifos, are highly toxic to birds. Do not apply them to areas that have live birds in them. Remember to read and heed all product labels before using any insecticide or repellent. **The label is the law.**

Mountain Pine Beetle

By Jackie Steinheimer
Colorado Master Gardener

The Mountain Pine Beetle (MPB) is predominately found in high country pine forests. Recently it has found its way into urban areas by people transporting infected firewood and by strong wind events that carried the beetle into our communities. The MPB is currently at epidemic levels ranging from New Mexico to Canada. It has been confirmed in urban areas along the northern Front Range (Denver to Ft. Collins) and as far east as Logan County. During low population levels, the MPB generally attack large diameter trees that are under stress from injury, poor site conditions, drought, or disease; however during epidemic levels (like what we are now experiencing) attacks will also occur on trees regardless of their size or health. In urban areas the tree of choice for the MPB is the Scotch pine however most native and introduced pines are attacked. The exception is the pinyon pine which is not commonly attacked.

The MPB has a one-year life cycle that begins when mated beetles tunnel under the tree bark and form an egg gallery in the cambium layer of the tree. Cambium is a layer of cells, 1 or 2 cells thick, which are persistently meristematic, providing cell division to increase the diameter of the tree. When the eggs hatch the larvae overwinter under the bark. During the spring they begin to mature and feed on the cambium. They emerge as

new adults in mid-June through September depending on the type of pine tree and the temperature although the majority will be in late July and mid- August. When they emerge they "take flight" in search of a fresh food source: green pine trees. Adult beetles are black in color and are 1/8 to 1/4 inch long, roughly the size of a grain of rice while the larvae are white.

Damage by the MPB is twofold and occurs as the larvae eat the cambium and by the bluestain fungi carried in on the bodies of the adult beetles. The physical signs of MPB infestation are popcorn-shaped masses of resin (pitch tubes) on the trunk which may be brown, pink, yellow or white in color and by the reddish boring duct (sawdust) in crevices and on the ground immediately adjacent to the tree base. Patches of bark may be missing where woodpeckers have been feeding. You will also see signs of the bluestain fungi that turn the sapwood grayish-blue. The needles on the trees will start turning red, yellow or faded approximately 8 months after attacked or if the tree is drought stressed you can start seeing changes in as early as 4 months.

According the Colorado State Forest Service, once MPB infests a tree, nothing practical can be done to save that tree. Trees that have been killed by the MPB should be removed and destroyed before the adult beetles leave the tree, at our elevation that could be as early as May depending on the temperature. The neighboring trees should be sprayed to prevent beetle attack and if applied properly the trees will be protected for up to one year however if the area is heavy infested the results may not be as satisfactory. Both removal and spraying should be performed by a professional tree service. Before making any decisions contact your Forestry District or a certified ISA arborist to confirm MPB given that *Ips* and related beetles are often mistaken for MPB.



Larvae



Adult



Pitch

Guidelines for Winter Watering

By Pat Meyers
Colorado Master Gardener

Except for a few days in February, we have had an especially dry winter. With this in mind, have you been paying attention to winter watering? Do you know how to winter water? Did you even know that plants and lawns need to be watered during winter especially those that were newly planted last season?

During times when there is little moisture from snow or rain, trees, shrubs, perennials and lawns can suffer without supplemental water. In very dry ground root systems are often injured or killed. Though plants with such injuries may at first leaf out and appear normal in the spring, they may then start to wither or die completely or in part when temperatures rise in late spring or early summer.

Shallow rooted perennials, shrubs and trees need supplemental water during extended periods of dry weather. Mulch can be used to conserve soil moisture, but make sure to keep it clear from around the trunks of trees, so it will not provide a hiding place for burrowing animals that like to feed on the bark.

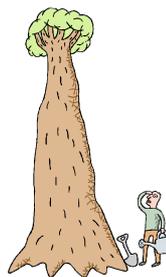
Lawns are also susceptible to winter damage. Newly planted lawns and those with southern or western exposure are especially vulnerable.

In fact, all plants recently planted should receive extra attention in the winter. It takes newly planted trees, especially larger ones, several years to develop a healthy root system under normal conditions, and they always require supplemental water during dry times. To determine when and if to water, watch the weather and soil conditions from November through March. If there is no moisture within four weeks during these months, water plants and trees.

You should only water in the morning or around noon when the temperature is above 40° and the ground is not frozen. If you water later in the day, there is a chance that the water will not have time to soak into the ground and will run the risk of freezing.

There are many water applications that can be used. Some of these are soaker hoses, soil needles or soft spray nozzles. If the soil is hard or compacted, soak the area, wait and soak again to avoid water runoff. If using soil needles, also known as deep root feeders, only insert it at an angle to a depth of 6 to 8 inches. If you insert it deeper than that, you are watering out of the reach of the roots. Water for 3 to 5 minutes with the water turned on

low or moderate pressure. Insert the soil needle in several areas around the tree depending upon the size of the trunk. Make sure to water under the branches or dripline and not up against the tree or shrub. For new trees, water all four sites at least 3 feet from the trunk (stem). Sprinklers, such a "frog eyes" or bubblers that have a lower pattern of spray less likely to blow in the wind, are good to use in watering trees and shrubs. Whichever method of watering you use, remember to disconnect and drain hoses after each use and whatever you do don't activate your sprinkler systems during the winter.



Now that you know what, how and when to water, you are probably wondering how much water to apply? Generally speaking, about 10 gallons of water will supply enough for each diameter inch of a tree trunk. Newly planted shrubs with mulches need about five gallons two times a month if the weather is dry. Give established smaller shrubs about half that amount each month. Larger shrubs will need more.

The amount of supplemental water perennial beds will need varies with the weather conditions, types of perennials and soils, and the amount of mulch around the flowers. It's always a good idea, in any landscape, to thrust an eight inch screwdriver or narrow trowel into the soil to see just how wet or dry it is and water accordingly.

Watch the weather, soil and your plants to determine if they need additional moisture. If you do this even in the driest winter, your plants will thrive and reward you with healthy growth into the spring and through the summer.

To request a copy of the documents listed below or to ask specific questions on winter watering you can contact the Elbert County Master Gardeners at the Extension Office or access a copy through the Colorado State University website <http://www.ext.colostate.edu/pubs/pubs.html>. [Fact Sheet no. 7.211, "Fall and Winter Watering"](#), [Planttalk 1751 "Fall and Winter Watering: During Drought, Planttalk 1706 "Fall and Winter Watering"](#), and [Planttalk 1719 "Watering"](#).



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Fax: 303.621.3161
elbert2@ext.colostate.edu

February 2011

Master Gardener office hours are Tuesday and Thursday afternoons, April through September from 1:00 to 4:30 p.m. Stop by the Extension Office at the Fairgrounds in Kiowa or give us a call at 303-621-3162. You may also email questions to elbertmg@ext.colostate.edu.

Do you have a friend or neighbor who might wish to receive this newsletter? Please call or email the Extension Office with their name and address. Also let us know if you wish to receive this newsletter electronically. Thank you!

Sincerely,

Sheila Kelley
Elbert County Extension Director
Colorado State University

Veggie Valentine

Author Unknown

Cabbage always has a heart;
Green beans string along.
You're such a sweet tomato,
Will you peas to me belong?

You've been the apple of my eye,
You know how much I care;
So lettuce get together,
We'd make a perfect pear.

Now, something's sure to turnip,
To prove you can't be beet;
So, if you carrot all for me
Let's let our tulips meet.

Don't squash my hopes and dreams now.
Bee my honey, dear;
Or tears will fill potato's eyes,
While sweet corn lends an ear.

I'll cauliflower shop and say,
Your dreams are parsley mine.
I'll work and share my celery,
So be my Valentine.