From the Ground Up

A Gardening and Native Plants Quarterly

Colorado State University Extension-Pueblo County

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FABULOUS FAMILIES

ALLIACEAE—THE FLAVORFUL AND COLORFUL ONION FAMILY

by Marge Vorndam, Colorado Master Gardener, 1997, and Native Plant Master, 2007

What would delicious cuisine entrees be without the addition of onions to season them? French mirepoix, Mexican sofrito, and the "holy trinity" of Cajun cooking include onions, perhaps the best known member of the Alliaceae family. We know alliums generally as onions, garlic, leeks and chives. From Neanderthals to modern humans, alliums have been a part of our culture for food and medicines. The onion family has been traditionally used for antibiotics, antiparasitics, antispasmodics, expectorants and antiinflammatory drugs. The family also has application as an insecticide which kills Lepidopteron insect larvae and Homopteran sucking insects.

The Alliaceae family was once part of the lily family (Liliaceae), but were eventually separated from the lilies due to their umbellate flower cluster with perianth tepals and papery spathe-like bracts. In 2009, the

Alliaceae family was recombined by botanists as a sub-family, Allioideae, in the family Amaryliidaceae due to recent genetic associations, but since many of us still know it best as the onion family, Alliaceae, that is how we are considering it here.

Many onion family members share the genus Allium. There are 700 different types of allium worldwide. Onions grow from bulbs, which are sought by gourmets worldwide, but they also produce and grow from seeds.

All alliums have a characteristic oniony odor caused by the organosulfur compounds that are inherent in these species. Wild onions, in particular, may have a stronger taste due to this feature than do domesticated onions. Wild onions can be delicious melded with a white cream sauce. They are differentiated from the similar mountain Death-Camas by their onion smell. Since Death-Camas is deadly, onion-seekers should always check for that onion smell before gathering wild onions and chives for food.



Spring

Allium textile, one of our native onions, at Pueblo Mountain Park. Photo courtesy of L. McMulkin

In Colorado, common native onions include Allium schoenoprasum, a chive with purple-pink flowers and hollow leaves; A. cernuum, a nodding pink, purple or white flowered onion found in foothills to montane habitats; A. geyerii, with pink to red flowers found in foothills to subalpine habitats; and A. textile, a whiteflowered onion found from plains to foothill habitats. Continued on page 2





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Due to the smell and taste, the onion family is deer and rodent resistant. The family is also drought-

Save the Datel

tolerant, sun-loving and pollinator attracting, which makes its inclusion in xeric gardens a major plus.

As ornamentals for the flower garden, *Allium* cultivars come in many colors, including yellow, white, beige, purple, pink and blue. For large, impressive plants, consider the popular Star of Persia, Blue-globe onion, Purple Sensation, Globemasters, Gladiator, and Drumstick. For smaller ornamentals, Corkscrew, Ozawa, Schubert, Ornamental Chives, Flaviums, Golden Garlic, and Yellow allium are good choices. Onion bulbs should be planted 6-8" deep in fall for summer flowering. Many varietal bulbs are available in gardening shops or from seed catalogs. And, of course, culinary onions, leeks and chives are a great addition to the vegetable garden.



Allium species. Photo courtesy of Missouri Botanical Garden



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PERENNIAL PEOPLE

BRAD BIXLER, CITY OF PUEBLO PARKS AND RECREATION by Edith Brideau, Colorado Master Gardener, 2007

The Pueblo Chieftain reported in January that a year-long experiment in cutting back water and letting grass grow longer in city parks had dropped water usage by 33%, saving 207 million gallons of water. I was astounded, not only that this had occurred, but that it wasn't front-page news. This inspired me to interview Brad Bixler, Interim Parks/Contracts Manager for the City of Pueblo, and learn more.

Why did you do this? Being one of the area's largest water users, it was our responsibility to reduce water consumption, especially during the drought. We also knew that our turf was not as healthy as it could be, due to over watering.

How did you accomplish it? It required the input and cooperation of our entire team: Charlie Carlino, Operations Supervisor, Lee Carstensen, South Side Senior Caretaker, Steve Valencia, North Side Senior Caretaker, and Mike Taft, Urban Forestry Coordinator. Several of us had successfully reduced water consumption in our own landscapes and were ready to try it in the parks.

Any surprises or setbacks? We noticed shortly after reducing water that the turf was stressed. So we skipped a weekly mow cycle and let the grass grow longer. After resuming mowing, we raised the blade height from 3 inches to 3-1/2 inches. We also aerated twice a year, rather than once a year. This allowed

water to soak into the soil, encouraging deep root growth. which is beneficial to turf and trees in the parks.

Any unexpected benefits? The turf is healthier, so we have fewer problems with weeds. Also, the drought conditions and reduced water usage have helped control the Japanese beetle infestation.

How has the public reacted? I think people like it. The healthy turf looks better and is softer, more inviting for

families picnicking in the parks. We had a few complaints about longer turf in athletic fields, so we're cutting them a bit shorter. We do listen to citizen concerns and act on them when possible. Sometimes, however, citizens just need to be patient as we make improvements.

Mineral Palace Park is one site where reduced irrigation resulted in healthier turf. Photo courtesy of Brad Bixler.

For example? We removed quite a few trees from Beckwood Park to create additional athletic fields. We are leaving the best spruces in strategic places and planting appropriate trees on the perimeter of the park. The Conservation Trust Fund, rather than taxpayer money, is funding this project. The result will be 10 acres of soccer fields, football fields and open space.

We continue to improve the river trails to make them safer and more attractive, while limiting the use of chemicals in response to citizen concerns. We planted fruit trees near Mineral Palace and I-25 last year and expect to see them blossom this year. We'd like to move toward more perennials there, rather than annuals, for budgetary reasons. We also created an arboretum at City Park and Mineral Palace. Visitors can use a map to examine 30 tree species and scan each tree's QR code on their smart phone to access a Wikipedia article describing the tree. There are very few parks in the United States that do this; I believe we are one of only two in Colorado. Continued on page 4



Perennial People continued from page 3

We planted fruitless pear trees along the trail at Lake Minnequa, a beautiful spot with tremendous mountain views. The eventual tree canopy should make it even more inviting for visitors.

I'm impressed. Thank you for working so hard to make positive changes in Pueblo's park system, making it more accessible, beautiful, and environmentally friendly. How can the public help? Our Adopt-A-Park program provides an opportunity for individuals and groups to be involved in maintaining and improving Pueblo's parks. Anyone interested can contact me at <u>bbixler@pueblo.us</u>.

Emerald Ash Borer Update by Linda McMulkin, Horticulture Coordinator, CSU Extension-Pueblo County

I think most of you are aware that Emerald Ash Borer (EAB) was confirmed in Boulder County last September. I'm asking that, unless you live in Boulder, please don't panic about this insect. CSU Extension, City Parks, and local tree services are aware of the potential problem and will be evaluating trees this summer. If we find EAB in Pueblo, you will certainly be informed.

Emerald ash borer is an alien insect that is responsible for the death of far too many ash trees. But the speed that the insect moved in the upper Midwest was facilitated by the fact that the forest between urban centers is full of native ash trees, providing food and shelter for generations of the insects as they moved from town to town. Colorado has **NO** ash in our native forests, so there are no trees to facilitate movement from Boulder to Pueblo. The only way for it to travel is to move in infested wood, so don't move firewood from the Platte River drainage.

Yes, there are ash trees in Pueblo with health problems. Many have been damaged by the drought, others have lilac-ash borer. Please do not assume that any stressed ash tree is infested with EAB. But each of us needs to become aware of the EAB signs.

To learn more about EAB's life cycle, management options (if we find it here), and how you can help monitor the local ash population, please visit the Colorado Dept of Agriculture website, <u>http://www.colorado.gov/cs/Satellite/</u> <u>ag_Plants/CBON/1251646251641</u>. If you think you have EAB in your ash trees, or if you have any questions or concerns, please contact the Colorado Department of Agriculture at 888-248-5535 or email <u>CAPS.program@state.co.us</u>.



Toilet Paper Tube Seedling Pots By Georgi Lipich, Colorado Master Gardener, 2007

Oh goody! Another way to recycle toilet paper tubes! I personally liked this one once I figured out



The not-so-perfect first try. Hopefully perfection will come with practice.

how to do it. The larger paper towel tubes can also be sectioned and utilized in the same way.

Basic instructions:

- Using utility scissors, cut four ½ to 1 in. slits in the end of the roll. Visualizing the end of the tube as a square, the slits should be cut directly across from each other.
- Now, and this is where it gets a little tricky...and this instruction is stored somewhere in the back of your mind...you remember closing up a box without using tape, folding in one side at a time until each corner is tucked under another? Do this with the tabs you've created on the end of the tube.
- Fill with potting soil, poke in the seeds and voilà! A seedling pot that decomposes and can be planted right into your soil once the seeds have sprouted.



WICKED WEEDS

HOW DO WEEDS GET TO BE SO WICKED?

by Marcia Weaber, Colorado Master Gardener, 2005, and Native Plant Master, 2007

A weed is a plant out of place. Almost any plant can be a weed if it is not wanted. Many of the plants that we classify as weeds are non-native. They were brought here from Europe and Asia as seeds to remind people of home or came in with crop seeds. Weeds not only compete with desirable plants for water and nutrients needed for growth, but may also serve as a host for insects and disease organisms, cause impurities in agricultural products, and be poisonous to livestock.

Many plants are ordinary, annoying weeds, but noxious weeds are a genuine threat to the natural resources, ecology and economy of our state. A species may be declared a noxious weed based on its detrimental effect, reproduction, distribution and difficulty of control. Examples of why plants are put on the Colorado noxious weed list include:

- May cause or has potential to cause severe production losses or increased control costs to the agricultural and/or horticultural industries.
- Has the potential to or does endanger native flora and fauna by its encroachment into forest, range, and conservation areas.
- Has the potential to reproduce rapidly and be dispersed over a wide area. This includes species with easily dispersed seed and plants that reproduce by tubers, creeping roots, stolons, rhizomes or other natural vegetative means.
- The inability to control some plant species by conventional management practices such as chemical, cultural, biological, and physical methods will place them on the noxious weed list.

The distribution of some plants cause them to be classified because of known economic importance which occurs in small enough infestations to make eradication or containment possible; or not known to occur, but its presence in neighboring states makes future occurrence seem imminent, is of economic and ecological importance, and has limited distribution or has not infested the full extent of its potential habitat.

The noxious weed list falls into three categories. Class A noxious weeds are usually newcomers, found in only a few places in the state. State and local weed boards hope to completely eradicate them before they get a foothold. Class A weeds are the ones you are least likely to see but the ones that are most important to report. Class B noxious weeds are abundant in some areas of the state, but absent or rare in others. The goal for Class B weeds is to control their occurrence where they are abundant, and to prevent them from spreading to those parts of the state where they are rare or absent. Class C weeds are already widespread. In some cases, counties may require property owners to control Class C weeds, but more often counties simply try to educate residents about why controlling them is a good idea. For a full list of the noxious weed species in Colorado, visit the Colorado Department of Agriculture site at http://www.colorado.gov/cs/Satellite/ag_Conservation/CBON/1251618874438.

Noxious weeds are everyone's problem. When one landowner fails to control them, they spread to others' property where they can cause great harm and reduce property values. Weed laws are needed to ensure that we all do our part to prevent this from happening.

The laws define which invasive plants are classified as noxious weeds, and what plants are on the "quarantine list" of plants that are illegal to sell or distribute. The law also authorizes County Weed Boards and local Weed Districts to enforce requirements for landowner control of weeds. The State Noxious Weed Control Board creates and maintains the state's official list of noxious weeds. Citizens can nominate a weed to be included or dropped from the list, or ask that a weed's classification be changed.

The Colorado Weed Management Association has pocket size reference pamphlets for field identification of Colorado Noxious Weeds. You can purchase the book at http://www.shop.cwma.org/.



Garden Tip: Spring Irrigation

Deep water your landscape now to allow all plants to take up moisture and nutrients needed for spring growth. Be sure to apply enough water to infiltrate 8 to 12 inches and wide enough to cover the most important water absorbing root, those from the edge of the canopy to twice the size of the canopy.

Remember to hydrate your vegetable garden soil prior to planting seeds or seedlings; water frequently until germination or until seedlings are established. The easiest way to tell if you need to water again is to feel the soil for moisture. If it is dripping wet, wait. If it feels dry to the touch, water.

Growing Warm Season Vegetable Seeds Under Grow Lights

by Bret Capritta, Colorado Master Gardener, 2014

Warm season vegetable seeds need a warm medium to germinate, and after germination they need a warm air temperature, a sufficient light source and a sufficient food supply to sustain growth and avoid a spindly appearance. Some of our warm season vegetable plants include eggplants, peppers, pumpkins, squash and tomatoes. In our area, the growing season for warm season vegetables is quite short. Most warm season vegetable seeds are started indoors in late winter to account for this. Therefore, it is recommended that seeds be started indoors six to eight weeks prior to planting outside.

Warm season vegetables prefer a soil temperature in the range of 70-80 degrees Fahrenheit to germinate. Germination can be accelerated by higher temperatures around 90 degrees F. A combination of a plastic top cover and a heating pad on the bottom of a mini plastic greenhouse can be used to achieve optimal germination temperature. A regular heating pad can be used as well as specialized ones called seedling germination mats. After germination, the plastic cover and heating pad will no longer be needed.

When seedlings germinate, they prefer an air temperature in the range of 70 to 95 degrees F. A wellinsulated growing area along with artificial lighting should be enough to sustain this air temperature. If your growing area is drafty and results in cool air penetration, a temperature controlled heat lamp could be used to sustain optimal air temperature.

Next comes the lighting needs of the seedlings. Artificial lighting can greatly increase the growth of the seedlings prior to planting outside. Fluorescent lights work well for indoor supplemental lighting. There are two types of fluorescent light bulbs that are recommended. They include cool and warm fluorescent lights. Cool and warm refer to the wavelength of the light being emitted. Plants use different wavelengths of the color spectrum for different stages of growth. For this reason, I recommend both a cool and warm bulb placed in a light fixture built to hold two bulbs. This provides the full spectrum to the plant and the plant can utilize each wavelength as needed. It is also recommended that the bulbs be 48 inches long. Wattage and lumens refer to the intensity of the light. Vegetables also need a certain intensity of light. It is recommended that



germinating seeds have about 20 watts per square foot which is about 1200 lumens. A standard 48 inch fluorescent light bulb will emit about 10 watts per square foot so adding that second bulb will give the 20 watts per square foot the germinating seeds need.

Finally, the germinating seeds will need food for growth. Start feeding the seedlings after the first pair of true leaves begin to show. It is recommended that the fertilizer solution be diluted by at least half or even more when beginning to feed seedlings with their first true leaves. Tender seedlings can easily burn if given too much fertilizer.

If you need any special accommodation(s) to participate in any Colorado State University Extension event, please contact CSU Extension-Pueblo County at 719-583-6566. Your request must be submitted at least five (5) business days in advance of the event. Colorado State University, U.S. Department of Agriculture and Pueblo County cooperating. Extension programs are available to all without discrimination.



In the right place, a cottonwood tree can be a marvelous addition to a landscape or natural setting. They are fairly fast growing, have interesting bark, produce a nice yellow fall color, and provide shade from which to hide from the summer sun. But cottonwoods, while native to our area, often get a bad rap in urban settings.

Our local cottonwood is *Populus deltoides* (synonym *P*. sargentii), the plains cottonwood. Its native habitat is riparian areas or wetlands where it receives frequent moisture from perennial stream flow or runoff from rain and snow. Its roots tend to be shallow and wide spreading, holding the trees in place against the flow of water at their bases. The overall shape of the plant is upright when young, but spreading widely as it reaches maturity. Trees can grow to 100 feet tall and 75 feet wide. The bark is grey and forms thick, flattened furrows. Even under ideal conditions cottonwoods are shorter lived than slower growing trees like oak or hackberry, but can live for many decades before they begin to decline and eventually die.

Cottonwoods are members of the willow (Salicaceae) family, which reproduce by seeds and suckers. Cottonwood flowers are catkins, produced separately on male plants and female plants. Seeds are connected to cottony material that allows for movement through the air to new sites.

Populus deltoides is a great tree in native settings, where its characteristics can be the worry of Mother Nature. But, cottonwoods in Drawing courtesy of: USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. urban settings too often result in complaints from homeowners who planted them. Common complaints include:

- Roots "appearing" in turf or flower beds (natural)
- Worms in the spring (catkins are kind of weird looking)
- Cotton everywhere (female plants produce seeds) •
- New plants all over the yard (yes, they sucker, and seeds blow around)
- Swollen places on limbs (poplar twig gall)
- Broken limbs everywhere (weak wood)
- Too big (did you read the label?) •
- Leaks a sticky substance (bacterial wetwood) •

If I sound less than enthusiastic about cottonwoods in landscapes, it is only in response to the many complaints I hear. I know of many fabulous cottonwood trees in urban landscapes. Those plants are successful because the homeowner planned for the species' high water needs, gave it plenty of room, planted a male tree, puts up with the shallow roots, and understands that cottonwoods have health issues that are managed mostly by reducing stress on the plant.

If you want to go native in your landscape, remember that not all native plants originate in the same environment and a little research will help you choose plants that best fit your gardening style and conditions. While *Populus deltoides* is native to Pueblo County, it is not native to dry, upland areas, and is not well suited to water-wise landscapes. But, give it plenty of water and plenty of room and you will have a fabulous shade tree for many years to come.

1913. An illustrated flora of the northern United States, Canada and the British Possessions. 3 vols. Charles Scribner's Sons, New York. Vol. 1: 591.



HARMONIOUS HARDSCAPES



UPCYCLING WOOD PALLETS by Georgi Lipich, Colorado Master Gardener, 2007

"...millions of wood pallets end up in landfills, according to a joint study by the USDA Forest Service and Virginia Tech University. Reusing pallets for garden projects is a great way to divert waste from the landfills." (Pallet Gardening, by Marie Lenahan, eHow Contributor)

We've all seen them stacked behind grocery and big box stores. Most retailers give them away for the asking. However, they usually end up in our landfills. My husband has used them around our house, mostly for keeping things up off of damp garage floors. Recently, with the emphasis on recycling and upcycling, I've noticed these pallets being used for more intriguing purposes.

If you're at all computer savvy, use your search engine to query "pallet gardening". Instructions abound for turning old pallets into garden planters, raised beds, vertical planter support systems, compost bins and various pieces of garden furniture.

NOTE: The Number One Rule in pallet selection is choosing a pallet that has been heat-treated ("HT" included in the stamp on pallet) rather than chemically treated. If the code includes the letters "MB", then it has been fumigated with methyl bromide and should not be used anywhere that bare skin could come in contact with it or near food. This is particularly crucial if the pallet will be utilized in food production. Be sure to use gloves to handle all pallets until treatment determination has been made. Once you've made your selection, lightly sand and clean the pallet. At this point, your next steps can be as uncomplicated as stapling landscape fabric to the back of a pallet and filling the "pockets" with potting soil. The frame can then be used vertically or horizontally. Another site recommended placing the frame on the ground and inserting "pads" of newspaper as a weed barrier under the potting soil. The wood slats become a walk area for a raised bed. Another called for splitting bags of potting soil lengthwise, placing them lengthwise on the pallet and inserting seedlings directly into the soil. (This provides a very basic raised-bed look and is relatively weed-free.)



For those of you who are as interested in being more creative, the possibilities are limitless! Treating your project to a good painting may be time-consuming but will be rewarding in the long-run. The end result will depend on how much time you want to put into it. Once you are satisfied with the treatment, the painted pallet can be attached vertically to a fence or wall, decorated with salvaged hardware handles/hooks and each cavity filled with small pots of vining flowers, herbs and vegetables. This is a great micro-garden method, especially for balconies and small yards.

How Plants Use Nutrients Gathered From The Soil by Greg Nolan, Colorado Master Gardener, 2009

Nitrogen (N), phosphorus (P), and potassium (K) are the minerals most heavily used for plant growth. Nitrogen is a component in all proteins that dictates the function of the plant cell. Nitrogen deficiency results in plants with stunted growth. Phosphorus is needed to convert light energy to chemical energy. It is essential for plant growth, flower and seed production. Potassium regulates stomata activity for gas exchange, reduces water loss, and increases drought tolerance.

Other minerals, called micro-nutrients, are needed in much smaller amounts. A few examples are calcium, which regulates nutrients entering the plant and activation of plant enzymes, magnesium, an important component of chlorophyll, and sulfur, which is important in the composition of the chloroplasts, amino acids and vitamins. For more information on plant nutrients and potential deficiencies, see CMG GardenNotes #231, Plant Nutrition, at http://www.ext.colostate.edu/mg/gardennotes/231.pdf.

Garden Tip: Time To Remove Plant Protection

Protective coverings can be removed from trees and perennial beginning in March. Remove tree wrap around Easter and mulch from roses and perennials by early April.

A New Gardening Resource Coming To Rawlings Library

by Warren Nolan, Colorado Master Gardener, 2008

Coming to Pueblo this spring is a seed library. Last fall, a committee was organized through the Colorado State University Extension-Pueblo County office to pursue the idea of housing a seed library at the Rawlings Library.

What is a seed library? It is literally a physical repository for seeds. Like other library media these seeds can be "checked-out" for free. A seed library patron would borrow tomato seeds, grow tomatoes, harvest seeds from these tomatoes, and then return the harvested tomato seeds to the seed library--completing the borrowing circle. Many seed libraries specialize in the seeds of heirloom and native plants as a way of conserving genetic diversity through the propagation and harvest of seeds. A local seed library would, over time, become a repository for seed adapted to the challenging gardening environment of Pueblo.

Seed libraries grow on donations from both individuals and seed companies. One member of the seed library committee is interested in collecting seeds from native plants around Pueblo County as a way of encouraging the propagation of local native plants by gardeners and landscapers. Other members of the committee simply want to share "special" seeds they have harvested from a particularly prolific squash plant or a uniquely colored flower.

The most challenging part of the seed library will be to teach seed borrowers how to harvest viable seeds, because getting seeds donated back to the seed library is key to ensuring the long term viability of the seed library. Two main goals of the seed library will be to teach gardeners how to harvest and

process seed and how to share locally adapted seed. The Pueblo City-County Library District will direct seed borrowers to books, hand-outs, and online resources. And, with the assistance of the Pueblo County Extension office the library will also sponsor a variety of classes to help patrons learn the techniques of plant propagation and seed harvesting. At the Manitou Springs Seed Library, seeds are sorted by type or kind and also by

how difficult they are to propagate. Once organized they are put into envelopes-- the same size as standard, store bought seed packets--and then stored in the drawers of a beautiful old oak card catalog that was resurrected for the purpose of housing the seed library.

It was a challenge to find an old card catalog. Members of the seed library committee searched online sites like Ebay and Craigslist, as well as local schools and libraries, for a card catalog. The committee soon discovered that old-school card catalogs were both rare and expensive. When it seemed that some sort of alternative to a card catalog would have to be found or constructed, Midori Clark, Director of Community Relations for the Pueblo City-County Library District, found a card catalog in storage at the Rawlings Library.

At this point, the Seed Library Committee is hopeful the seed library will be ready this spring, in time for gardeners to borrow seeds for planting. In a sort of mission statement the Westcliffe Seed Lending Library states: "Saving seed is a vital step toward sustainability, food security and is a missing link in today's gardening. Let's learn to save seed again...saving seed is a time honored tradition that we can all share."

Garden Tip: Tree Planting Tips

When planting trees and shrubs this spring, please follow the recommended planting and care techniques found in CMG GardenNotes found at <u>http://www.cmg.colostate.edu/gardennotes.shtml#trees/</u>.









INSECT HOTELS: ARTISTIC SHELTERS FOR GARDEN ANIMALS

by Elizabeth Catt, Colorado State University Extension-Pueblo County

I have recently been captivated by the idea of constructing "insect hotels". These are structures in the garden that provide habitat for insects, amphibians, reptiles and all sorts of beneficials. The natural habitat for many species has been demolished or severely broken through development, urbanization and widespread chemical use. There is a shocking population decline in many of our native pollinators, and by building insects hotels, we can provide safe haven for many species of butterflies and bees.

These garden hotels can also offer refuge for overwintering lizards and toads, what I call "garden patrollers". Many garden "bad guys" have free range, so to speak, in our gardens and are more opportunistic

than the beneficials. It is easy to help repair the natural web of relationships in your garden, even in a small way, by building a hotel for the good guys and placing it correctly in the garden.

At first glance I was enamored by the innovative garden art qualities of many of these shown on line, but after reading a bit about them began to see how effective they could be. If you enjoy watching birds flit around in your garden, you better have some bugs, almost all birds feed their young on them! I think they are a great educational tool too. Why doesn't every elementary school have at least a small garden with an insect hotel

to help our children become more comfortable with our natural world?

We have become almost sterile in our garden maintenance routines, removing every last leaf, fallen twig or piece of bark which are all used as forage or habitat by insects, micro-organisms and animals. Insect hotels might be a maintenance resolution for hyper vigilant gardeners- just put all those "organic things" together in an interesting package and call it garden art. In southern Colorado there is not much organic matter in or on top of our soils that is not blown away. Growing a "wild" area and putting an insect hotel into our

gardens begins to weave organic matter back into our gardens. Just a corner of layered shrubs, forbs and grasses can create a refuge for many of the "wildfolk". A wild corner planted with a diverse palette can provide pollen, nectar, shelter, nesting, and habitat. It is a small package that creates a big bang of biodiversity.

There is lots of information online and it does not take long to find out how to build a hotel and what the requirements are for those that you want to build refuge for. There are good instructions on how to locate the "hotel" in your garden. Take a look at how many ways there are to build them and how wonderfully creative people have been in designing and implementing them. Here are some helpful websites.

http://www.inspirationgreen.com/insect-habitats.html http://www.henandhammock.co.uk/helpingtheenvironment/index.aspx?id=1926 http://www.bbcwildlife.org.uk/sites/birmingham.live.wt.precedenthost.co.uk/files/Insect%20Hotel.pdf http://www.learninglandscapesdesign.com/insect-hotels/







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Garden Tip: Pruning Woody Plants

It's time to prune some of your landscape plants. Ornamental grasses should be cut back to just before new green shoots start to show. Prune late summer blooming plants such as Russian Sage, Blue mist spirea and Butterfly bush to encourage new growth, which is where flowers will form. Prune roses as the buds begin to swell, usually early to mid-April. Prune out all dead wood on ornamental trees anytime. But wait to remove live growth from Rose family members such as crabapples and plums until July. This helps reduce the possibility of fireblight. Spring flowering woody plants can be pruned after flowering. For more information on pruning, see PlantTalk ColoradoTM scripts 1713,1721, and 1763 or the



Colorado Master Gardener GardenNotes on pruning at http://www.cmg.colostate.edu/gardennotes.shtml#pruning.



DIGGING DEEPER

THE FORMATION OF VEGETABLE MOULD THROUGH THEACTION OF WORMSby Kelly Wright, Colorado Master Gardener, 2013

Most of us are familiar with a theorist and author by the name of Charles Darwin, best known for his first couple of books. The first was entitled, *On the Origin of Species* published in 1859, and his second most ground breaking, *The Descent of Man and Selection in Relation to Sex*, published in 1871. Many of you as horticulturalists and gardeners may be more interested in his last book, published in 1881, *The Formation of Vegetable Mould through the Action of Worms, with Observations on their Habits*.

Darwin became interested in worms as a child on his early fishing trips, but began a more in-depth study on them while he was defending his early works in 1872. Darwin was reminded of his interest in worms after receiving samples of soil from Roman ruins from a correspondent. He experimented with various worms and samples that he kept in pots in a room at his Downe, England, mansion. He marveled at how they were visably affected by light but less noticeably effected by temperature and sound. He was also interested in their effects of eating and soil bioturbation (reworking of soil by animals or plants).



He was also fascinated in worm behavior in foraging, sexual behavior, and sometimes compared and contrasted them with humans with statements like, "a man... born blind and deaf". Ironically, Darwin was likely eventually devoured by worms after his death in 1882. Darwin was buried next to Sir John Herschel, another eminent scientist, and Sir Isaac Newton, a known apple eater and creator of the computations he called 'calculus' that made junior high school torture to many young students. Darwin's final resting place was in Westminster Abbey.

You can receive your own free copy (without copyright violation) of *The Formation of Vegetable Mould through the Action of Worms, with Observations on their Habits,* online to read on your Kindle, or as a PDF at <u>http://archive.org/</u>. Another title you may like by Darwin is *Fertilization of Orchids*.

Garden Tip: Don't Top Trees

Mature trees in Pueblo are being butchered far too frequently. The International Society of Arboriculture states on their website that "topping is perhaps the most harmful tree pruning practice known". Topping, or cutting tree branches to stubs while leaving the trunk intact, results in high stress levels to plants, invites decay organisms, results in weak wood, and makes the tree ugly. The pruning of mature trees is often necessary due to interference with power lines, overhanging roofs, or declining tree health, but trees can be pruned without resorting to topping. In some cases, the best pruning cut may the one at ground level. For more information on why topping is bad for trees, visit the ISA website at http://www.treesaregood.com/treecare/topping.aspx.

New Horticulture Education Program from Colorado State University by Linda McMulkin

Have you ever wished you could receive the training of a Colorado Master Gardener, but just couldn't fit the classes into your busy schedule? Well, Colorado State University (CSU) recently rolled out the eagerly awaited Certified Gardener Digital Badge Program through the CSU Online Plus distance learning system. The curriculum is based on CMG training and taught by the CMG state coordinator, David Whiting.

Online classes give adult learners options on where and when to take classes, even from the comfort of your recliner. The course list includes a wide range of topics, from basic botany to weed management to pruning trees. You can choose one topic or take the entire series.

As you complete each section of the course, you earn a digital badge that certifies you as an authority in that topic. These badges can be used to improve your personal gardening skills or as a way to share your expertise with employers or clients.

There are three tracks within the program, Trek, Quest, and Mastery. Trek badges represent your completion of a single topic, such as Lawn Care or Tree Fruits. You can take individual Trek courses that interest you or bundle similar topics to form a Quest level badge. For example, if you choose the Lawn Care Quest badge option, you will take the Trek level Lawn Care class, plus receive classes about types of turfgrasses, fertilization, irrigation, thatch and soil compaction management, mowing, and managing weeds. After passing the online quizzes, you will earn a Quest level badge.

The Mastery level course covers the full range of Colorado Master Gardener training, including diagnostics and pest management, plant materials, landscape design, irrigation management, lawn care, weed management, soils, and basic botany.

For more information on this new garden education opportunity, including how to register and tuition costs, visit the CSU Extension Certified Gardener Program website at <u>http://www.online.colostate.edu/</u> certificates/digital-badges/certified-gardener/.

Preserving the Harvest Food Preservation 2014 Classes ALL CLASSES:

Location: CSU Extension - Pueblo County, 701 Court Street, Suite C, Pueblo, CO 81003
Fee: Fee must be paid by deadline date to register. Payable to Extension Program Fund (check or cash only/)
Contact: Christine or Lois at 719-583-6566 for more information. Minimum of 6 participants required to hold a class.

Jams and Jelly

Thursday, June 19, 2014 6:00-8:00 pm Registration deadline June 12th \$5.00 Fee

Pressure Canning

Thursday, June 26, 2014 6:00-8:00 pm Registration deadline June 19 \$5.00 Fee

Water Bath Canning

Monday, July 14, 2014 6:00-8:00 pm Registration deadline July 7 \$5.00 Fee

Two Part Hands-On Workshop

Saturday, July 19, 2014 Registration deadline July 11 \$20.00 Fee Limit: 12 participants Pressure Canning, 9:00 am-12:00 pm Water Bath, 1:00 pm-4:00 pm



Water Bath- Hands-On Workshop

Wednesday, July 23, 2014 1:00-5:00 pm Registration deadline July 16 \$10.00 Fee Limit: 12 participants

Freezing and Dehydrating

Monday, August 4, 2014 6:00-8:00 pm Registration deadline July 28 \$5.00 Fee

Pressure Canning- Hands-On Workshop

Thursday, August 14, 2014 1:00-5:00 pm Registration deadline Aug. 7 \$10.00 Fee Limit:

Limit: 12 participants







It's always a good time to learn new gardening skills. Please join us for these great classes.

2014 Yard and Garden Classes

Interesting Insects, Saturday, April 26, 9 a.m.-2 p.m., Dr. Whitney Cranshaw Going Natives, May 13, 6-9 p.m., Linda McMulkin Gardening for Fall Vegetables, July 12, 9 a.m.-noon, David Whiting Saving Seed, August 16, 9 a.m.-noon, Penn and Cord Parmenter Season Extending Garden Structures, 9 a.m.-noon, Colorado Master Gardeners Composting Basics, 6-9 p.m., Kata Schmidt For more information, please call 719-583-6566 or visit our website at http://pueblo.colostate.edu.

For more information, please call 719-583-6566 or visit our website at http://pueblo.colostate.edu. To register for classes, please stop by our office or mail in your check. Tuition ranges from \$15.00 per person for 3-hour classes to \$25 for Interesting Insects and Seed Saving classes. Cash or check only.

Discounts are available for couples sharing materials.

Registration closes one week prior to a class.

We require a minimum of 10 paid participants to hold a class, otherwise it will be cancelled.

Additional Education Events (call for more information)

Xeriscape Design Class taught by Pueblo West Xeriscape Gardeners, March 22, 2014 Xeriscape Garden Tours, June 7 (Pueblo) and June 8 (Pueblo West)

Alternative Methods for Growing Potatoes by Bob Akins, Colorado Master Gardener, 2013

Baked, fried, boiled, roasted, mashed, distilled...no matter how you fix them the potato is delightful. Growing a nice potato crop usually takes a lot of real estate, but there are alternate means that are not quite so land hungry.

Potatoes are planted as store bought, certified seed potatoes (small tubers) or from pieces of stored tuber saved from the previous year's crop cut into 1.5 to 2 inch pieces, each containing an eye. What is the best type of potato? The answer for that is "depends". Match your growing conditions to the needs of the cultivar and then have fun with all the available sizes and colors. Just avoid grocery store potatoes as they are often treated with an anti-sprouting agent to improve shelf life.

Potatoes can be a beautiful addition to your garden. What we normally eat is the tuber that develops underground, but potatoes do have attractive flowers and sometimes small, cherry tomato-sized fruit containing multiple seeds. Be careful here though as the potato is a member of the nightshade family and the above ground parts, including the fruit, are extremely poisonous.

There are many methods of growing potatoes. Considering the challenging soil conditions many Colorado gardeners face, some of the non-traditional methods are probably worth a try.

Hilled Rows: This is the method that needs a lot of area with rows that are straight and separated by shallow trenches. Also, the soil



So many options! Photo courtesy of Carol O'Meara, CSU Extension-Boulder County

needs to be prepared by digging and loosening. The rows need to be 1 to 3 feet apart and the seed potatoes planted 4 inches deep. The yield is based a lot on soil quality so the Pueblo West area needs a lot of amendment for proper preparation. Unless you have a lot of good farmland this is probably not worth doing in your back yard.

Potato continued from page 13

Straw Mulch: Pretty much the same as the hilled rows except you put the potatoes on the surface of your "prepared soil", put the seeds on top and then cover with a heavy layer of straw mulch. Not very eye appealing and loose straw will likely disappear in high winds without netting.

Raised Beds: Loosen the soil in the bottom of a half-filled raised bed. Space seed potatoes about 12 inches apart in all directions and bury them 3 inches deep. As the potatoes grow, add more soil until the bed is filled. If possible, simplify harvest by removing the sides.

This method can have good yield. Raised beds are a good choice where the garden soil is heavy and poorly drained. But the beds can be costly and, the soil to fill the bed

has to come from somewhere—and it takes a lot.

Grow Bag: Commercial growing bags are constructed of heavy, dense, PBA-free polypropylene. Put a few inches of a soil-compost mixture in the bottom of a bag, then plant 3 or 4 seed potato pieces and cover with 3 inches of soil. Continue adding soil as the plants grow until the bag is filled. To harvest, turn the bag on its side and dump out the contents.

The bags can be placed most anywhere and could be used for several seasons. If they will be in street view, you can purchase decorative, colored bags. Unfortunately, they are expensive, ranging from \$13 to \$30.

Garbage Bag: Aesthetically, this is the least appealing choice for your garden and, more importantly, food safety experts say we should not

grow food in a container that is not labeled for food storage

Wood Box: Build a bottomless square box (use lumber from discarded pallets), and treat it just like a raised bed. Additional slats can be screwed to the sides as the plants grow and soil is added. This structure often works best with straw or mulch as the growing media, since local garden soil can be far too heavy. For the final harvest, tip the box and dump out its contents.

Wire cylinders: This is a good way to grow potatoes in a small area, easy to harvest, and can be

aesthetically appealing. Avoid using tires or other non-food grade materials. Start with several inches on soil on the bottom, plant 3 or 4 seedlings and cover with another 3 inches of soil. Continue to add soil as the plants grow. Harvest simply by lifting or taking apart the cylinder. Make sure you keep well watered as these containers will drain easily.

Straw or Hay Bales: A straw bale is an excellent way to grow a garden. It is a raised bed on a compostable media that can add amendments to your garden space at the end of every season. Initial start is simple. For best potato production, stack bales 2 high with the cord ties to the side, sprinkle the top with nitrogen fertilizer, water, and let set for about 2-3 weeks. The moist bales will heat up due to decomposition. You can plant when the bales feel just slightly warm to the touch. Dig out small fist sized holes in the bale, add soil and time release fertilizer, and plant the seed potatoes. At harvest time, simply cut the cords and let the bales come apart.

Whatever method you choose will be a compromise. How a particular option looks in your garden will be a factor, but as the potatoes grow, many aesthetic problems will be covered by greenery. Other considerations are space, cost of materials, desired yield, and the amount of work you're willing to do. No matter which you choose growing potatoes, as in any food crop, is always a gamble. So, good luck Grasshopper.



Potatoes grown in a grow bag and a wooden box designed so that slats and soil can be added as potatoes grow. Photos courtesy of Larry Stebbins, Pikes Peak

Photos courtesy of Larry Stebbins, Pikes Peak Urban Gardens, <u>http://www.ppugardens.org/</u>.

