

May 2019

Volume 14, Number 4



# Root Concerns

Notes from the underground

## Piled Higher And Deeper



I bet worrying about volcanoes is low on your priority list. Well, I hate to tell you, but there are two types of local volcanoes to fret over. The first is a “large swelling of hot rock” that Rutgers University scientists found deep below New England. That magma isn’t expected to cause us a problem for millions of years, or perhaps ever. The other type are in commercial landscapes, in front of convenience stores, and even in front yards. They don’t spit steam and lava, but they’re dangerous nonetheless. They are the MULCH volcanoes.

In case you think I’m blowing smoke, let me explain. Over the last few decades, it has become a common practice to make a circle of mulch around a tree. Sometimes, mulch is applied to the circle every year, and it eventually builds up ten, twelve, perhaps even eighteen inches high. This “volcano” makes the tree look like it is sticking out of a highly iced cupcake (but we don’t call them mulch cupcakes because that would be, frankly, silly).



This mulch volcano has appeared in West Sand Lake

Stuff happens inside the volcano. Surface rooting is encouraged, and girdling roots may grow around the trunk, strangling the tree. Lots of organisms which decompose mulch accumu-

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late, and they start to decompose the buried bark of the tree. Insects and rodents may also be encouraged to move in. If enough bark is destroyed, the tree declines from “mulch girdling.” Lastly, some experts have found that hardwood bark mulch contains manganese. More mulch means more manganese, which in turn robs the tree of iron. Over-mulched trees may gradually have smaller leaves that are pale green or yellow, shoot dieback, and an overall unhealthy appearance.

I’m not blowing my top over mulch around trees; far from it. Mulch is good because it keeps mowers and string trimmers away, since dinging the bark enough times causes tree death from a syndrome called “lawn mower blight.” Discouraging close grass and weed growth also provides a neat appearance and

helps the tree to grow, since some herbaceous plants (such as the grasses called fescues) exude chemicals from their roots that actually inhibit young woody plants. But we just need to layer the mulch two or three inches deep and no more, and to keep it away from the trunk. Shape your mulch like a saucer, with a rim to catch water (especially for newly planted specimens) and very little in the center near the bark, and all will be fine.

So what started all this mulch madness? Here’s my theory. Unlike many horticultural problems which have their roots in neglect, mulch volcanoes originally sprouted in the well-

tended landscapes around upscale apartments and commercial centers. Each spring, the faded mulch was covered over with a fresh layer

by busy landscape crews making things beautiful. No one stopped to consider what was happening, and homeowners drove by, saw the highly manicured grounds, and said, “Hey, that must be the way to take care of trees!” The volcanoes then went residential because people lava to mulch.



**Text and photos by David Chinery**

# Seeing Yellow

Text and photo by David Chinery

What do you see when you look at a lawn full of dandelions? Driving past bright-speckled lawns on my way to work got me thinking about how Americans, divided by so much, are probably also split by their reactions to these vivid yellow flowers popping up hither and yon. Here are some ponderings on the human reaction to *Taraxacum officinale*.

Kids tend to like dandelions, and I can see why. The mini-yellow suns are undeniably cheerful, and blowing on the seedheads is a delightful way to celebrate spring.

Beekeepers vote “yes” to dandelions because they supply honeybees with an early cache of pollen and nectar. Although foreign, dandelions can benefit many types of pollinators and tend not to push out native plants as much as establish themselves in landscapes already disturbed by human activity.

Dandelions have long been used as a diuretic, which has earned the species the unflattering names “wet-the-bed” and “pissy beds.” Warts, asthma, low blood pressure, poor circulation, ulcers, constipation and colds have all been treated with dandelions at some time and place in history, so just about all of us might want to show them a little love for their service to humanity.

Nutritionists know that young dandelion leaves are full of vitamins, including A, C and E, as well as antioxidants. Epicureans make a coffee substitute from the roots and create salads with the leaves. When I bought my old house, a bottle marked “Dandelion Wine, 1972” was found in the basement. Unfortunately, the contents looked far too questionable to taste, but I like to think of it as a leftover from the “Flower Power” generation.

Home sellers might find dandelions distasteful. To some, plants other than grass in a lawn indicate a slackening of standards, sloth and laziness. If my neighbor has dandelions, is anyone going to want to buy my home? Others worry about the spread of depravity, and the puffball of dandelion seeds is seen as a precursor to the spread of problems, perhaps even those beyond weeds. In poking around the comments section of some websites, I’ve discovered that having a dandelion-free lawn is more important in some neighborhoods than waving hello. Weedlessness is also a symbol of spending power. There tend to be fewer dandelions in neighborhoods with greater discretionary income, since getting rid of dandelions is costly, whether you do-it-yourself or hire-it-out. Spending money indicates wealth, and those with wealth are seen as good and worthwhile, especially in today’s U.S.A.

Big chemical companies love dandelions, since they’ve used the plant to convince some lawn owners that dandelions are evil and need to be eradicated. This of course puts more green in Big Chem’s pockets. It also benefits an entire chain of advertising firms, wholesalers and retailers, and lawn care operators who market, sell, and spray the herbicides. An interesting exercise for an economist might be tallying up the money involved in killing the cheeky, yet humble, dandelion.

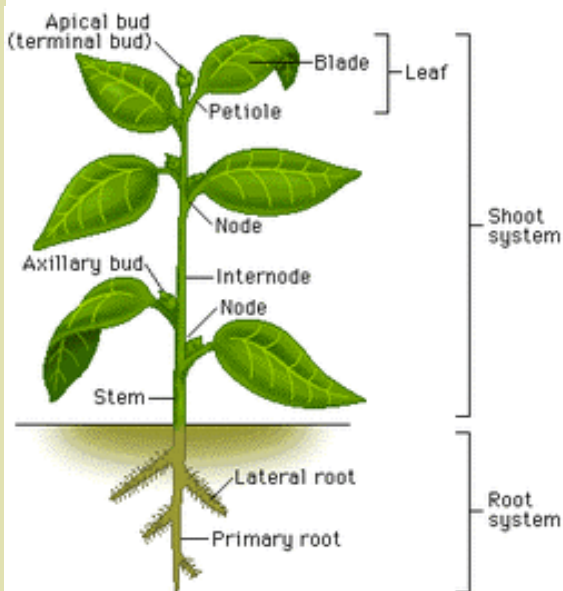
How else do we see you, dandelion?



# Eley's Anatomy

## A Brief Look At The Body Of A Plant

I had decided to write about the differences between herbs and spices, but I decided I didn't really have enough material. It's the kind of topic where one says, "Well, that's obvious!", so I decided to write about plant anatomy instead.



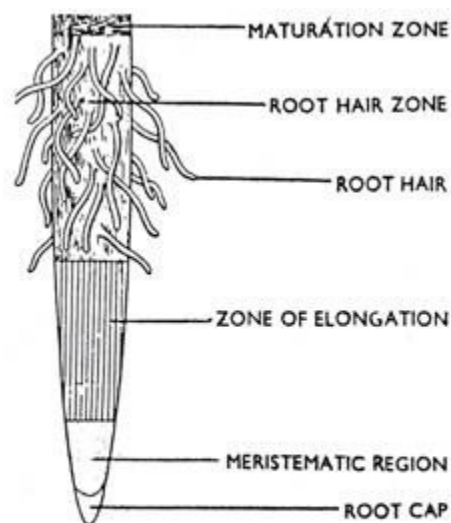
<https://www.mrgscience.com/yr9-topic-5-plant-structure-and-photosynthesis.html>

encountered. These dividing cells are very small and account for only about ten percent of the growth of a root.

What does account for the growth of a root? The next area up is where each cell elongates to form the adult size of the cell, i.e., about ninety percent of root size is due to the elongation of the cells. If you think of the differences between a carrot and grass, it is easy to assume that more water is absorbed by grasses than carrots. But look at a carrot closely and you will see there are indentations on the carrot and coming out of each indentation is a thin hair-like growth (root hairs). This is where the water absorption occurs. The uppermost zone of a root is called the zone of maturation or differentiation and this is where cells assume the duties they will perform for the rest of their lives.

The stem is the least specialized plant organ. Most stems are divided into nodes and internodes. A node is that section of a stem where a leaf grows or grew. Every leaf has a bud above it. In teaching botany, my students would often ask me why an Idaho potato is a stem and a sweet potato is a root. A sweet potato has no nodes and internodes.

Most angiosperms have three organs: the root, the stem and the leaf. There are two kinds of root systems, both of which anchor plants and absorb water. The tap root system contains (usually) one main root (e.g. the carrot) whereas the fibrous root system has many roots roughly equal in size (e.g. grass). If you've heard the phrase "grass roots", you know which system anchors more firmly. As a root grows down into the ground, the bottom is protected by delicate and thus short-lived cells called the root cap. Apparently these cells detect gravity, for when researchers have cut the root cap off, the root grows in whatever direction the researchers had faced it until a new root cap is produced. Heading up the root, an area of actively dividing cells is next



<http://www.biologydiscussion.com/plants/absorption-of-water/absorption-of-water-in-plants-with-diagram/22718>

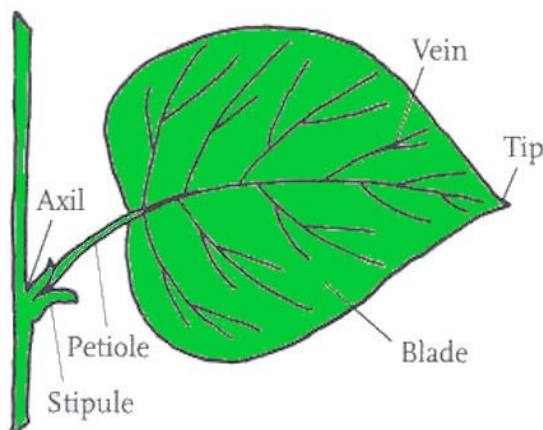


When I was very young, good gardeners advised me to pinch my lanky houseplants. Well, I trimmed my plants so that they looked nice and neat. What I did was cut the plants so that I left only internodes. My cuttings rooted, but by cutting off the nodes, I removed all buds, so that I ended up with rooted internodes that never did anything.

I mentioned that the stem is the least specialized organ. Yes! Stems can be photosynthetic (e.g. the saguaro cactus below), absorb water and/or anchor a plant (an iris rhizome is photosynthetic, anchors the plant and absorbs water). In general, the less differentiated a structure is, the more likely it is to be used in reproduction. Hence, the stem is what is commonly used to propagate plants asexually. Stems can be underground (e.g. bulb, corm, tuber), above ground, erect or above ground, horizontal.

The leaf is what we think of as the photosynthetic organ. So, plants have two kinds of root systems, a variety of stems and a myriad of leaves. Most leaves are attached to the stem via a petiole and then the flat, broad portion of a leaf is called the blade. The blade may be entire (simple leaf) or it may be divided down to main veins (compound leaf). Leaves occur at nodes and a node may have two leaves (opposite leaf arrangement, e.g. coleus) or one leaf (alternate leaf arrangement e.g. begonia). Remembering that every leaf has a bud above it, pruning a plant determines how the plant will grow.

#### LEAF PARTS



<http://8.gfbcx.dominik-suess.de/htr/tree-leaf-diagram.html>



e.g. coleus) or one leaf (alternate leaf arrangement e.g. begonia). Remembering that every leaf has a bud above it, pruning a plant determines how the plant will grow.

The bud or buds just below the pruned section will sprout. So, if you look at a maple tree, you will usually see two branches grow from the same node (opposite leaf arrangement) whereas an oak tree will have one branch per node (alternate leaf arrangement).

The things I have described apply to most, but not all, angiosperms.

## What's **HOT**?

With increasing sunshine and warmer days, the perennial garden and I are awaking from a long winter slumber. Soon will come time for the garden's annual check-up.

What's spreading too much, in the wrong place, or come up dead? Local garden centers are happy to oblige with new perennials, supplied by local growers like Joe Behn. He owns a local wholesale nursery and provided me with a list of new perennials he's offering for 2019. Here are just a few which have piqued my interest.

Developing more compact plants is a big gardening trend, as people grow more in containers and smaller backyards. One of my perennial favorites is turtlehead (*Chelone*), a late-blooming native of about three feet. New is *Chelone* 'Tiny Tortuga,' which has similar hooded pink flowers but on a fifteen inch plant. It promises to attract butterflies, resist deer and thrive in full sun to partial shade.

As a lover of ornamental grasses, I've been disappointed as *Miscanthus* has fallen from grace over allegations of invasiveness. To the rescue now comes *Miscanthus sinensis* 'Scout,' a green and white upright variety growing to about six feet, developed by the University of Georgia. It claims to be infertile, so it won't leave errant progeny down the road. Other new sterile forms worth checking out are 'My Fair Maiden' and 'Bandwith,' both hailing from North Carolina State University.

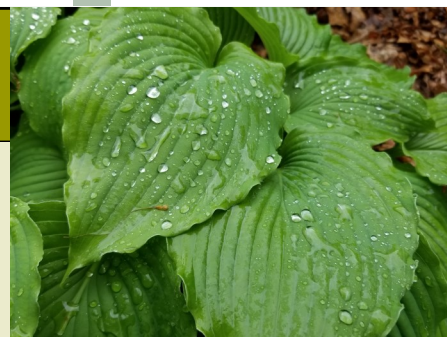
There's little better than hosta, those hardy dwellers of shade and sun which are practically indestructible. While some swoon over the diminutive types like 'Tiny Tears,' I like to go big, along the lines of 'Princess Wu,' daughter of 'Big John.' So that's why I'll make room for the new 'Humpback Whale,' a blue-green hosta growing three feet tall and a whopping 6 1/2 feet wide. The leaves, the size of good-sized serving trays, have an unusual hump in the middle, making the leaf-tips point downward and giving rise to the name. Bred by the late Mildred Seaver, the legendary hosta maven of Massachusetts, a plant of 'Humpback Whale' sold for \$3,700 at the 2006 American Hosta Society Convention. And we all thought those plant-society types rather sedate, didn't we? Thanks to Mrs. Seaver and all the other dedicated plant breeders, horticulture is hot!



Chaste Tree (*Vitex agnus-castus*) and I discovered each other in the summer of 1984, while I interned at Colonial Williamsburg. The small trees with spiky blue flowers seemed a southern novelty to this Yankee, but new a new, cold hardy type is now marching north. *Vitex* 'Blue Diddley' purports to grow from three to six feet tall and bloom on new wood in full sun. Its USDA Hardiness Zone ratings range from sub-tropical 9b to locally brisk 5a. It should be treated like a perennial plant here, expected to die-back to the ground in winter but re-grow the following year. According to one source, chaste tree leaves were used in ladies bedding to "cool the heat of lust" when men were off to war. Use this plant with caution.

# What to do in May

- \* Sharpen tool blades and oil handles with linseed oil.
- \* Sharpen your lawn mower blades as sharp blades save 30% on fuel.
- \* Set your lawnmower deck to mow to a 3 inch height. This discourages weeds and conserves water
- \* Move your houseplants outside into a sheltered location, not into full sun.
- \* Decorate with hanging baskets.
- \* Organize your surplus empty containers and clean them with 1 part bleach with 9 parts water.
- \* Make a list of plants for containers to limit impulse buying.
- \* Create an Edible Container Garden: Spinach (6" pot), Swiss Chard (12"), Lettuce (12"), Kale (12"), Peppers (6"), Tomatoes (12") --- Mix and match!!
- \* Clean up garden beds, by raking the leaves and removing the remains of last year's perennials.
- \* Move and divide perennials.



- \* Prune early flowering shrubs when the flowers have died.
- \* Deadhead spring bulbs, leaving some foliage to die off naturally.
- \* Plant summer flowering bulbs, such as dahlia, gladiola, canna, and tuberous begonia.
- \* Time to mulch - AS LONG AS THE SOIL IS NOT TOO WET!
- \* Add compost or fertilizer to the flower and vegetable beds.

- \* Plant sweet potatoes, white potatoes, beets, salad greens, radishes, tomatoes and carrots.
- \* Keep eating that rhubarb and asparagus to extend the harvest.
- \* Set up stakes around the peonies and other plants - before they fill out.
- \* Stagger planting of dill and cilantro for continual harvesting
- \* Lawns can be fertilized at the end of May if so desired.
- \* Sow wildflower patches matching plants to your soil type.



# Are You Vegetable-Adventurous?



Many of us plan our gardens in advance of spring and fill up our planting beds quickly. Occasionally, however, I actually leave a little space for something new, not necessarily exotic or weird but something that I'd simply like to try out. The potential list of these potential veggie candidates, of course, is very long, but here are a few that might at least get you thinking about deviating from your standard repertoire.

**Globe Artichokes** (*Cynara scolymus*) - Here's one for a backyard gardener with extra space and looking for a challenge. Annual versions of these perennial plants (in milder climates) were developed in the late 1980's. For our locale there are several varieties that will grow, but the two more readily available cultivars are Imperial Star and Colorado Star. They can be grown from seed, but get started quickly -- *in fact, maybe you should wait until next*

*year unless you can get a seedling from a nursery...* Anyway, the seeds require temperatures in the 70-80°F range to germinate, BUT after sprouting the seedlings only need daytime temperatures in the range 60-70°F AND need to have night temperatures between 50-60°F (*so turn off those heat mats at night*). If you start the seeds in plugs, they will need to be transplanted into 4" pots as soon as the first permanent leaves develop. The plants like very fertile well drained soil. Artichokes produce deep tap roots and each mature plant requires about 12 square feet of space.

**Flower sprouts** (*Brassica oleracea*) - Known as "Kalettes," their commercial name, they are relatively new to the backyard gardening scene. First developed in Great Britain about 10 years ago, kalettes are a cross between Brussels sprouts and kale. They grow on stalks like B. sprouts, but instead of setting little cabbage-like heads, kalettes set small, loose heads. The leaves in these heads are more tender than regular kale and hence you can incorporate into salads without excuses or guilt. Like regular kale, they also fill a decorative function on dinner and serving plates in upscale eateries. Kalettes are a late crop, requiring a full 100 days to harvest, although there are three cultivars, one each for early, mid and late season. In your garden, space plants 18" apart and in rows 3 feet apart.



<https://www.johnnyseeds.com/vegetables/kalettes/>

**Cucumbers** (*Cucumis melo*) - Although Armenian cukes are distantly related to our familiar cucumbers (*Cucumis sativus*), they are really melons - it's cousins are honeydews and musks. There are two main varieties, one is long and light green and the other resembles a stiped zuchinni. The flesh is melon-like, but the flavor is cucumber-like. You will need to trellis these plants because they are vigorous growers and set many fruit. However, Armenian cucumbers are susceptible to a number of common diseases and is the reason why they hurry to fruit early and often.



<https://mastergardener.extension.org/2013/02/>



**Heirloom pumpkins** (*Cucurbita pepo* etc.) - For a backyard gardener, recognizing a pumpkin as a pumpkin taxonomically gets to be confusing. Most of us picture "field pumpkins" when we hear the word - plants with big vines, fruits of varying in size and typically some hue of orange (& most recently, white). But it's not quite that simple. There are various schemes for dividing the *Cucurbita* into species. One system names 30 species! The term, *Cucurbita*, simply translated means "gourd," and the species name, *pepo*, botanically designates a type of berry. *Pepos* typically have a tough outer rind and a thick underlying flesh layer. Summer squash, zucchini and acorn squashes as well as field pumpkins are all *C. pepos*, and originate from from wetter areas Mexico and North America. Other *Cucurbita* species, like *C. maxima*, come from South America, but all *Cucurbita* are traceable to the New World in origin while their recent cultivars, like the summer favorite, zucchini which was developed in Italy in the 19th century, are associated with other continents.

So in case you happen to have a lot of room left in your garden, some heirloom *C. pepos* that you might want to try include 'Connecticut Field,' 'New England Sugar Pie,' and 'Winter Luxury' pumpkins. For *C. maxima*, another species that includes recognizable "pumpkins" as well as many winter squashes like Hubbards, the varieties that you might consider growing include 'Long Island Cheese,' 'Big Max,' and 'Rouge Vif D'Estampes' (pictured above ) pumpkins.



<https://www.johnnyseeds.com/vegetables/pumpkins/specialty-pumpkins/rouge-vif-detampes-pumpkin-seed-614.html>



<https://njaes.rutgers.edu/tomato-varieties/variety.php?Yellow+Brandywine>

**Tomatoes** (*Solanum lycopersicum*) - Move beyond that old conventional red heirloom and try 'Yellow Brandywine.' Remember, as heirlooms, Brandywines are indeterminate with lots of long vines, requiring staking, caging, pruning or trellising for the industrious gardener. Like all tomatoes, they require fertile soil, and grow best if moisture levels are stable. Because the heirlooms have not been bred to be disease resistant, especially to late blight (*Phytophthora infestans*), Brandywines may not survive too long into late summer or early fall. However, if you want to splurge, you can buy a grafted plant from a nursery on disease resistant stock for about \$10+.

Finally, if you are thinking about saving their seed, you may be disappointed because Brandys will cross pollinate with other tomatoes in your garden or from your neighbor's. "Crossing" will not affect their fruit this year, but you may not get this year's tomato next year from the seed you saved. And remember...

*"The tomato hides its grief. Internal damage is hard to spot."* - Julia Child

**Adopted from a May 4, 2019 post of the Rensselaer County Vegetable Blog by Irv Stephens, Rensselaer County Master Gardener. You can visit the Blog at: <https://rensselaercountyvegetable.blogspot.com/>**

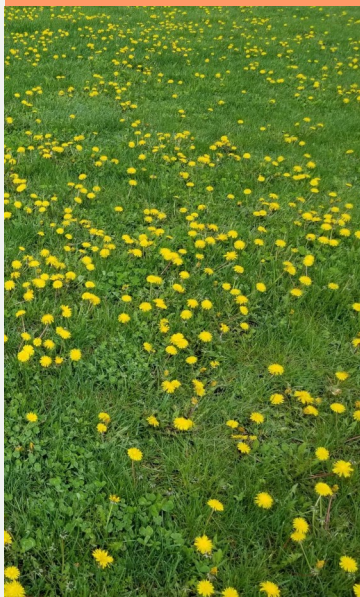
“It is hard to imagine a civilization  
without onions.”

*Julia Child (1912 – 2004, American author,  
chef, television personality)*



## Gardening Questions?

## Call The Master Gardeners!



In Albany County: Call 765-3514 weekdays from 9:00 AM to 3:00 PM and ask to speak to a Master Gardener. You can also email your questions by visiting their website at [www.ccealbany.com](http://www.ccealbany.com)

In Schenectady County: Call 372-1622 weekdays from 9:00 AM to Noon, follow the prompt to speak to a Master Gardener and press #1. You can also email your questions by visiting their website at <http://counties.cce.cornell.edu/schenectady/>

In Rensselaer County: Call 272-4210 weekdays from 9:00 AM to Noon and ask to speak to a Master Gardener. You can also email your questions to [Dhc3@cornell.edu](mailto:Dhc3@cornell.edu)

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# Summer Gardening Programs



**FREE Admission!**

**Rain/inclement weather at program start may cancel**

**Held at:** *The Demonstration Garden at The Robert C. Parker School, 4254 Route 43, Wynantskill (North Greenbush) 12198*

## **“Introduction To Straw Bale Gardening”** *Wednesday, May 15 from 7 to 8 PM.*

Planting vegetables and flowers directly into straw bales may sound odd, but it provides many advantages and amazing results! Master and Straw Bale Gardener Becky Raymond will show us this novel technique. Bring your garden soil for a free pH test, too!

**“Starting Right With Tomatoes”** *Tuesday, May 21 from 7 to 8 PM.* Tiny tomato plants are like puppies: they grow best with guidance. We'll discuss how to prepare the soil, plant, fertilize, water, stake and keep diseases at bay so your young tomato plants will produce a healthy harvest. Bring your garden soil for a free pH test, too!

**“Perennial Plant Propagation: New Plants From Old”** *Wednesday, June 5 from 7 to 8 PM.* Come watch Master Gardeners demonstrate various techniques to get new plants from your favorite perennial plants. We'll show simple division, softwood cuttings and other techniques you can employ at home, and giveaway some samples, too!

**“Using Herbs Throughout The Seasons”** *Tuesday, July 9 from 7 to 8 PM.* Explore the varied uses of herbs you can grow yourself, including for teas, medicine and cooking. The basics of growing herbs and of drying and storing them for future enjoyment will also be discussed by Master Gardeners led by Kathy Hartley and Janet Poole.

**“Cooking In The Garden”** *Tuesday, July 30 from 7 to 8 PM.* Back by popular demand! What can you do with summer's gorgeous produce? Using vegetables grown on-site Master Gardeners will prepare a variety of fresh and healthy dishes to share with the audience. Join us to learn new recipes and enjoy sampling some delicious summer foods! Master Gardener leaders will be Nancy Scott and Barbara Nuffer.

**“Late Summer Is For Lawns”** *Tuesday, August 13 from 7 to 8 PM.* Mid-August to mid-September is the best time for lawn weed management, overseeding, fertilizing, and renovation. Bring samples of problems (weeds, bugs, etc.) and we'll discuss options to improve your lawn for the future. Hosted by CCE Educator David Chinery.

**“Great Tomato Tasting”** *Tuesday, August 20, from 6:30 to 7:30 PM.* NOTE EARLIER START TIME! What's your favorite tomato? Come find out by tasting a wide variety of delicious tomatoes grown by Master Gardeners. We'll have some old favorites as well as some new top picks. We'll also talk about tomato growing challenges, so bring us your tired, your diseased, your dead specimens, yearning to be compost.

For more information, call Cornell Cooperative Extension's Horticulture Program at (518) 272-4210 or e-mail [dhc3@cornell.edu](mailto:dhc3@cornell.edu) **Directions: From Interstate(I-90) Exit 8; east onto Rte 43; pass through Rte 4 intersection toward West Sand Lake; (approximately 2.1 miles); Left at Robert C. Parker School.**

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