THE OPTIMISTIC GARDENER

Master Gardener
Cornell Cooperative Extension

Local Horticulture Newsletter
Chautauqua & Cattaraugus Counties

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"Dear Master Gardener"

Q: Is it possible to keep holiday plants and have them rebloom next year?

A: Plants such as a Christmas cactus is relatively easy to keep and rebloom. Poinsettias are more difficult to rebloom but definitely possible. The article in this issue can help you keep your holiday plants healthy and maybe rebloom next year.

Do you have a question for our Master Gardeners? Please submit your question here:

chautauquamg@cornell.edu
cattaraugusmg@cornell.edu

THE OPTIMISTIC GARDENER

Sharon Rinehart
Chautauqua County Master Gardener Volunteer

I like this time of year because both me and my gardens are resting and preparing for the next growing season. I look through my garden journal notes and start planning for the spring. I will talk about the importance of a journal in upcoming issues of The Optimistic Gardener (TOG).

Now is the time to decide what seeds to start. Mike's Nursery - our first featured business had a Facebook post of herbs and perennials already started in their greenhouse. For some plants, it is not too early to start.

I am slightly concerned about our lack of cold weather and snow (at least up to this point). My gardens need the cold - they get confused when it warms up to 50s and 60s degrees. Some of my plants think it's spring and have started growing. Might be a different looking garden this spring.

This is also the time of year when I have the time to read and research more. Make sure your read the informative articles in this (and all our newsletters). We have a wonderful community of Master Gardeners who research and write articles. I have found that I learn something from every article that is submitted and used.

Please enjoy our 6th issue of TOG. We are looking forward to more interesting and fun information for you in the coming year.

Happy Holidays and have a wonderful New Year!

Featured Business

Toot's Christmas Tree Farm

Sign from Service Print -Dunkirk
Photo - Instagram @toggjones

Toot's Christmas Tree Farm is a wonderful family business with all the country Christmas charm. It was started and is run by the Dugan family. What is Toot's all about? This is what Ryanne Dugan said.

My Dad (Jack) was given a Christmas tree from his school as a young child because his family needed one. The joy and Christmas magic that tree provided him always stuck with him and he wanted to provide that feeling to other kids and families. He and his friend started planting trees on the property in the mid-late 1970s and continues through today.

What people might not know is, the tree farm season is actually year round for us. We plant new trees every spring and trim in the summer/fall. Some are planted in transplant beds to plant at the farm in the future and others are planted in the vacant spots from previous Christmas trees directly on the farm. The trees that grow too large to sell are removed and repurposed to provide habitats for animals in the winter. They are also used as greenery for decorations, garland, and wreaths.

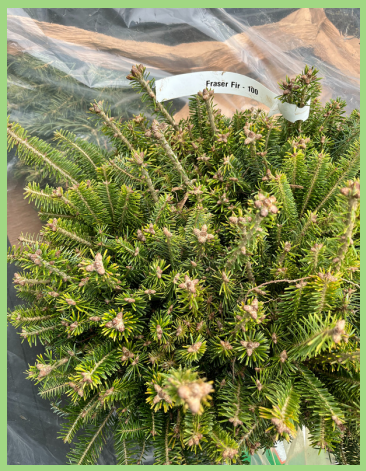
Currently we have Blue spruce, White spruce, Engelmann spruce, and Scotch pine trees. We also have Fraser fir, Douglas fir, and Concolor fir planted, but they are not yet available for public sale.

Our goal is to provide a family friendly atmosphere and keep Christmas magic alive through our Christmas trees. We so enjoy seeing our customers come back year after year and also the excitement of new customers. We are so thankful to be a small part of peoples Christmas traditions.

Like most things in life, it takes a village. As cheesy as that might sound, we would not be able to keep this farm running without not only our family, but our incredible neighbors/friends.

This year, we added a hot chocolate stand that we hope turns into a hit! We are constantly trying to make improvements, while keeping the small, simple charm of our family owned and operated Christmas tree farm.

Photo by Instagram @toggjones



Follow Toots on
Facebook page: Toot's Christmas Tree Farm
Instagram: tootschristmastreefarm
Email: tootstreefarm@gmail.com

Shop Local for Christmas Trees

Cattaraugus County

Arboretum at Blue Hill	10745 Hilliker Road Delevan
Forevergreens	11398 Bolton Road Springville
Gardens in Thyme	5177 Baker Road Salamanca
Harvest Moon Farms	1 Tug Hill Road Franklinville
J Faulner Farm	990 Olean-Portville Rd Portville
Millers Farm Market	1685 Olean-Portville Road Olean
Peaches 'N Cream	19 Main Street Randolph
Pleasant Valley Greenhouse	2871 Rt.16N Olean
Silver Falls Farm	10295 Jolls Road Perrysburg
Sinn Valley Gardens	6278 Rt 353 Cattaraugus
Weber's Lil' More to Do Greenhouse	4875 Humphrey Road Great Valley
Santa Klahn's	6503 Woodard Road Ellicottville, NY

Chautauqua County

Yerico Farms	3186 E Main St Dunkirk
Toots Christmas Tree Farm	Corner of Hopper & Quarry Forestville
WeatherHill Farm	8884 Hahn Road Fredonia
Bear Lake Christmas Tree Farm	8021 Bear Lake Rd Stockton
Scott’s Farm & Greenhouse	6029 NY-60 Sinclairville
Haff Acres Farm	5065 W Lake Rd, Mayville
Krenzer Family Tree Farm	2320 Hanson Road Gerry
Abers Acres	884 NY-394 Kennedy
Coan’s Dusty Acres	1199 Frew Run Rd Frewsburg
Mike’s Nursery	199 E Fairmount Ave Lakewood

This is the first installment of "The Soil Food Web". Future installments in upcoming issues of TOG.

"The Soil Food Web: Why Gardeners Benefit From Understanding How Soil Biology Creates and Maintains Healthy Soil."

Dear Reader,

I have been bitten by the Soil Health Bug. And I hope you will get bitten too. I've written this article to explain why.

For nearly a year, I have been studying and contemplating the soil food web after first finding a YouTube video by Dr. Elaine Ingham, then at Oregon State University and later founder of Soil Foodweb, Inc., a consulting and education firm that works with property owners and soil laboratories to access and remediate soils and soil biology.

She is the microbiologist and soil scientist who in the 1980s coined the term soil food web. She is a smart and funny lady, check her out.

The soil food web is the complex living system that constitutes the community of organisms that live all or part of their lives in the soil. Its residents include plants, bacteria, fungi, protozoa, nematodes, microarthropods, insects, small vertebrates, and earthworms, etc.. The system describes how energy is transferred between species in an ecosystem. In this energy economy, organisms eat and are eaten by more than one predator. Thus the resulting pattern resembles a web and not a linear food chain. This soil ecosystem is the basis for all life on Earth.

In the meantime, here is my tongue-in-cheek summary of what I have discovered.

Dinah Hovey, Master Gardener, Class of 2019

THE SOIL FOOD WEB - LET'S TAKE A LOOK:

It might be called the soil food web, **but...**

Plants are in charge. It all starts with plants.

Plants are party planners extraordinaire. They cater a grand smorgasbord and **invite** a community of **microbes.** Plants produce **sugary root exudates** to attract soil microbes. Plants use from 5% to 30% of the food (sugar) they produce through photosynthesis to **share** with **bacteria** and **fungi** as exudates from their roots. These exudates are also high in protein. Plants vary the type of exudates according to their growth cycle needs and stressors. Varied exudates attract varied microbes. The soil microbe profile is constantly in flux.

Friends are important. And plants just wanna have friends but **particular friends.** They are discerning as to whom they invite to the smorgasbord.

The root exudates they produce are **made** to **attract exactly** the microbes they want as friends and companions. These **preferred microbes** take up residence in the root zone of the plant aka the **rhizosphere.** This is an area only **2 mm wide** (1/10 inch) that directly surrounds the roots and root hairs. **These microbes form a bridge** between the soil and the plants. They **connect** plants with many of their essential nutrients and supply water. (Source: **For the Love of Soil** by **Nicole Masters.**)

Endophytes: their function and future. Some bacteria and fungi are endophytes. Endophytes are symbiotic microorganisms that live inside plants for all or part of their life cycle. They colonize the seed, leaf, stem, and roots of plants. Almost all plants studied have endophytes. Endophytes have multiple functions. They provide nutrition, promote growth and development, increase resistance to pathogens, improve tolerance to adverse environmental conditions. You will learn more about them as part of the rhizophagy cycle. Endophytes and the metabolites they produced are being studied for use as biological control agents against pests and diseases. And as a source of future drugs and for medicinal use.

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Bacteria are minute and there are **many, many** of them. They form **the basis** of the soil food web. A **teaspoon** of rich garden soil can hold over **one billion** bacteria, several yards of **fungal mycelia**, several thousand **protozoa**, and scores of **nematodes**. (Source: Oregon State University retired nematologist, Dr. Kathy Merrifield). Bacteria are so tiny they produce a biofilm/bioslime to attach themselves to soil particles so they don't get washed away.

Bacteria are miners and fixers. They (mostly) mine for **minerals** to feed to plants. They are also **chemists** creating ions out of those mineral elements so plants can eat these **ionized minerals** or plant-available forms. Bacteria also **fix nitrogen gas** from the air for plants to **metabolize** into important **organic compounds**. Think **chlorophyll**, amino acids, **proteins**, **genetic material** (RNA, DNA), **penicillin**, vitamins, etc. There are the well-known **Rhizobia** bacteria that **colonize** the roots of **legume plants** while other nitrogen-fixing bacteria, including **Azotobacter**, **live free** in the soil.

Bacteria spread fertilizer. Bacteria have been described as **little bags of fertilizer**, sitting in the perfect location, just waiting to be eaten by other microbes and having their fertile contents spread right next to the roots/root hairs of plants. This is another way that nutrients become **mineralized** aka plant-available. **Lysis** (death) of fungal **mycelia** is another source of ready-made **fertilizer**.

Plants farm bacteria and then eat them! It's true. In what is known as the **rhizophagy cycle**, plants cultivate - essentially farm - bacteria around the tips of their roots. Rhizophagy translates as rhizo=root and phage=to eat. Plants attract symbiotic endophytes, microbes that live inside plants without causing disease.The plants attract these bacteria by producing exudates from their roots; food that contains sugars, protein, and vitamins. Some bacteria are surrounded and engulfed by the cell wall membrane of plant root tips. They enter the plant and stay in the space between the cell wall and the cell membrane called the **periplasmic space**. The plant produces oxidizing substances (super oxides) that digest the nutrients and remove the cell walls. The cell walls are made of lots of carbon, nitrogen, hydrogen, oxygen. These are the non-mineral plant nutrients. The bacteria also produce nitric acid which is converted to nitrates (plant food) inside the plant. So the plant gets the benefit of the nutrients in the cell walls as well as the nitrogen produced by the bacteria. Win-Win! The wall-less bacteria reproduce by cloning themselves. When enough of them stop circulating in the cytoplasm (**cyclosis**) and congregate, ethylene gas, a plant growth hormone, is produced and this causes a root hair to form along the root. The microbes exit the tip of the root hair. They reform their cell walls and acquire more nutrients. And the process repeats itself. Pretty amazing. And please note that all/most plants possess endophytes and most endophytes are transmitted in the seed. Certain endophytes offer plants other benefits such as protection from disease, inhibition of grazing by herbivores, suppressing growth of competitive plant species. If you wish to learn more about the rhizophagy cycle, check out the work by Dr. James F. White, Jr., Department of Plant Biology, Rutgers University, New Jersey.

Fungi are foragers. Their mycellia have the ability to **grow** in **length**, extending into the soil at a rate of **40** micrometers a minute. They **travel** to far away places to **scavenge** for **water** and **food**. This exploration is in contrast to bacteria which may travel **6** micrometers in an entire lifetime. The effectiveness of this mycelial expansion extends both the **reach** and **surface area** (10-100 times) of a plant's functional root system. Fungi are the primary decomposers in the soil food web. Their enzymes can digest plant cellulose and the complex woody compound lignin, chitin in the cell membranes of their own bodies, chitin shells of insects and crustaceans, even bones. Bacteria require foods that are simpler to digest, often the nutrients that are the by-products of fungal decay. The biomass of fungi and bacteria in the soil mostly determines how much nitrogen is available for plants to use.

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Fungi also like to stay at home. They get cozy **inside** and **outside** the **roots** of plants establishing mutually beneficial aka **symbiotic** relationships for sharing nutrients and water. These symbiotic living arrangements marry the roots of plants with fungal partners and are called "**mycorrhizae**" which literally means "**root**-fungus" (myco for fungus and rhiza for root). Certain fungi **penetrate root cells** and provide for nutrient exchange by means of **tree**-**like** structures called **arbuscules** and **intercellular hyphae** which penetrate between plant cells. Others have extracellular hyphae which wrap around the outside of roots, often forming a protective interwoven covering.

Protozoa and nematodes remove garbage and deliver nitrogen. They are the **big** guys and they are **hungry**. Protozoa and nematodes **freely dine** on the smaller microbes and each other. Those cannibals! They **eat** their prey **dead** and **alive**. Their waste products are full of **extra nitrogen**, which is recycled back into the soil where it can be used by plants and microbes to **build** those important organic **compounds**. Remember **chlorophyll** and **DNA**, etc. Plants get most of their nitrogen from the decomposed bodies of soil microbes.

Nutrient Recycling: Immobilization and Mineralization. Let's look at the recycling processes called **immobilization** and **mineralization**. One of the vital roles of the soil food web is to **cycle nutrients**. Nutrients that make up the cells/tissues/organelles/bodies of organisms are said to be **immobilized**. Nutrients that are held onto particles of organic matter and clay by way of electrical charges are also **immobilized**. This is the **opposite** of being **mineralized** which is the process or state of being released and thus plant-available. In the bug-eat-bug example above, nitrogen is locked up or immobilized in the bodies of bacteria. Protozoa and nematodes then eat the bacteria and mineralize (release/make available) the nitrogen that is in excess of what they need. This excess nitrogen is excreted as mineralized nitrogen as part of the waste material. The nitrogen in the waste is now available to be immobilized anew by other organisms. A pretty neat loop-de-loop.

In the soil food web, it's a bug-eat-bug world. Tiny bacteria need to seek out tiny soil micro-pore spaces to avoid predation. Organisms prey on their own kind. Beneficial predatory fungi send out chemical signals to attract and then ensnare pathogenic nematodes. Bigger organisms prey on smaller ones. And those tiny bacteria, especially, seldom die of old age.

It's a tangled web, not a food chain. The microbes eat others and their own kind. Most of the totality of the soil organisms **prey** on **more than one** food source. The relationships get complicated. No straight lines here. No linear progression.

The soil food web is a dynamic place. Things come and they go. Whole lotta shakin' going on. Populations **explode** and **collapse** or go **dormant** depending on the **availability** of food, water, pH, temperature, and predators.

Diversity is the name of the game. It's a good thing. The closer we look, the vaster the universe of the soil food web becomes. It comprises **a wide community** of microbes and **bigger organisms**; mites, springtails, ants, pill bugs, earwigs, centipedes, spiders, beetles, earthworms, etc. all with their special jobs to do and contributions to make.

A **diverse population** of microbes makes it more likely that the **needs** of plants and the other organisms will be **met**. A diverse soil food web makes for **healthy soil** and **healthy plants**; a soil ecosystem that is flexible and can adapt to stressors.

Model citizens. Soil food web microbes hold the keys to the town. They are mostly good guys with few bad apples.

“The Soil Food Web” continues in next issue

SAGE ADVICE

Sara Slagle
Master Gardener Volunteer Apprentice

Welcome to a new column in The Optimistic Gardener! The purpose of this is to further educate you on the wonderful world of medicinal herbs. Here, I will cover everything from herbal profiles, recipes, cultivation and more! Feel free to save or print this page to create your very own herb journal. I hope this inspires you to learn more about the herbal path of healing. Stay calm and keep growing.

CHAMOMILE
Matricaria recutita, Asteraceae

You've heard of it, you've probably drank it as a tea, you may even grow it — but how much do you really know about this ultra-versatile, miracle herb?

There are two varieties of chamomile: German chamomile (*Matricaria recutita*) and Roman chamomile (*Chamaemelum nobile*). Both are interchangeable in terms of herbal properties, but what you will find most in commercial stores and apothecaries is the German variety. The main difference between the two is where you will find them growing naturally. German chamomile is an annual native to Eastern Europe and prefers full sun, with arid climates in well-drained soil. Alternatively, Roman chamomile is a perennial found in more temperate climates and the flowers look very similar but are slightly larger. It's most commonly found in fields as a groundcover as the plant itself is less bushy than that of the German variety. For the purpose of this article, I'm going to focus more on German chamomile, since it is the more common variety.
Chamomile is, without a doubt, one of the most common herbs used in modern day. Its use dates back to 5000 B.C. and was considered the most common herb used in ancient and Indigenous cultures. It's known as the miracle herb simply for its gentle, yet versatile range of uses, safe for all ages. The sweet aromatics albeit slightly bitter taste make it easy to ingest. It can be used internally to aid sleep disturbance and insomnia as well as digestive upset (tea or tincture), or even topically, for burns, rashes, styes, muscle tension and dry skin (oil, tea bath, poultice). You really can't go wrong with the use of this herb. It also makes a fine pollinator in the garden! To promote flower growth, keep up on pinching and drying the flowers and you will be surprised how much chamomile you can collect in a growing season. This plant is super easy to grow and is great for container gardens too. If you've been thinking about growing more herbs, this is one of the best to start your very own tea garden.

Parts used: flowering tops
Energetics: slightly cooling and drying
Taste: slightly biter with a sweet aroma
Medicinal Properties: aromatic, nervine, carminative, diaphoretic, sedative, antimicrobial, anti-inflammatory
How to Grow: Zone 5 – 9, full sun, well-drained soil, May – September

Local Master Gardener Volunteers

Nick and Sandi Stupiansky

After nearly 50 years of marriage, two kids, and two grandkids, Nick and Sandi have found the perfect retirement hobby: gardening. After retiring after full careers teaching PreK through graduate students, Nick and Sandi became MGVs through Penn State Cooperative Extension in 2000. They moved to Chautauqua County in 2008 but didn't transfer their MG status until a few years later. And they are so glad that they did!

Summers for the Stupianskys have been dedicated to serving the Chautauqua Institution, both as "Gardeners-in-Residence" at the Children's School and volunteering for the Bird, Tree, and Garden Club, where Nick is a board member. They maintain Little Free Libraries at the Children's School and the BTG headquarters, which keep them busy in the off season collecting books for the LFLs.

Being Master Gardener Volunteers has been a dream come true for Nick and Sandi as they are able to connect all of their loves. . . love for the earth, children, books, and growing their own food. They recently completed a residential lakeshore improvement project sponsored by the Chautauqua Watershed Conservancy by upgrading their own waterfront with native plants creating a buffer for the water coming into the lake from area roadways and yards. Their property is also certified as a Monarch Waystation and a NWF Wildlife Habitat.

Garden Quote

"From December to March, there are for many of us three gardens - the garden outdoors, the garden of pots and bowls in the house, and the garden of the mind's eye"

Katherine S. White

Holiday Plants Beyond the Holiday

Sharon Rinehart
Chautauqua County Master Gardener Volunteer

When the winter arrives and our outdoor gardens are under snow, many of us buy or receive as a gift a plant that is considered a Holiday Plant. They typically have beautiful flowers that brighten our home for the holidays. When the holidays are over and the blooms have ended, many of these plants are discarded. This is not the case in my house. I do not have the heart to discard a plant that has added beauty to the dark drab days of winter. These plants become houseplants that I nurture. As I have kept these plants, it is my personal goal to have them rebloom. Some are easy such as Christmas cactus where as others such as poinsettia are more difficult. Last year I had great success with my poinsettia reblooming. It was not as full and beautiful as the ones you buy in the store during the holiday season but to me it was very beautiful because I had managed to have it rebloom myself. As I write this, I am trying to have it rebloom again – this is a poinsettia that I have had for 3 years.

This year, before you throw out that holiday plant, consider trying to keep it and find the conditions you need to have it thrive and rebloom.

Christmas cactus are one holiday plant that most people can successfully keep as a houseplant and have it rebloom. After the blooms have finished, place it in a bright sunny area. Do not overwater. The soil should be nearly dry between waterings. After danger of frost has passed, the cactus can be moved outside in light shade. It should be brought back inside in the fall when there is a possibility of frost. Try to keep it in a sunny but cool area of the house. Soon buds will develop. At this time, you can move it to locations in your home where you can enjoy the blooms. Christmas cactus prefer slightly crowded roots so do not repot more than once every three years. With care, this plant will thrive for many years. We have one in our family that is at least 30 years old. It is very large and is covered with blooms every year between Thanksgiving and Christmas.

The beautiful poinsettia many consider a symbol of the holiday season. To have a poinsettia rebloom can be intensive but also very rewarding. After much diligence, it is a wonderful feeling of success when you see the red bracts.

After the poinsettia has brightened your holiday season, many of the leaves will fall off. At this time, reduce watering (do not let it dry out) and keep in a cool location. In the spring, prune it back to two buds per stem. Transplant it to a bigger pot. When evening temperatures are above 60 degrees, put the plant outside in a sunny location. Fertilize it lightly to encourage new growth. To maintain a bushy plant, occasionally pinch back the growth.

In September, it is time to set the buds. The poinsettia will need cool temperatures, high humidity, and 14 hours of darkness for 10 weeks This is the time when you are in control to achieve success in reblooming your poinsettia. There are a couple of ways to ensure your plant has 14 hours of darkness. One way is to place it in a closet or cover it with a box for the 14 hours. Uncover and move it into the sun each morning. The way I have developed is to use grow lights on a timer.

Rebloomed Poinsettia

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My plants are in the basement where it is cool and totally dark. The grow lights come on and off automatically to achieve the 14 hours of darkness. This is the only way I have success because I do not always have the time or even remember to move the plant in and out of the light. If you start this in late September or early October, you should have red bracts before Christmas. After the holidays, you can start the process all over again.

Most everyone has seen or has grown an amaryllis for the holidays. For your first amaryllis, try to buy a bigger bulb. They are more expensive but the flowers are larger and there are also more flowers per bulb. When it has finished blooming, cut the flowers off. Leave the stem and leaves, which will feed the bulb. In the spring when all danger of frost has passed. Place the amaryllis outside in a protected area. Feed it with an all-purpose fertilizer once a month. Before a frost, remove the bulb from the pot and cut back all the foliage. Place the bulb in a sunny window until it is dry. After it is good and dry, place it in a brown paper bag. This should be kept in a cool, dry area. After 6 weeks, repot it in with good potting soil. Put it in a place with indirect light until new growth is seen at which time it can be moved to a sunnier area. Often, you will see leaves forming first. If you are successful, a stalk and eventually a flower will emerge.

A Kalanchoe is a plant seen indoors but is often sold during the holidays because of its beautiful colors of pink, red, orange, yellow, or white. They are a succulent so care should be taken to not over water. Because kalanchoe tend to get leggy, either pinch it back or take cuttings in the spring and root in sand or potting soil. In order to have this plant rebloom, you should follow the 14 hours of darkness that was used for the poinsettia. If you have both, put them under the same light/dark system you develop and see if you can be success with both.

The last plant which is not a flowering plant, is definitely a plant purchased during the holidays and can be enjoyed all year. The Norfolk Island Pine may look like a pine tree but is not a true pine. It is native to an island in the South Pacific – Norfolk Island. Being a tender plant in our northern climate, a Norfolk Island Pine prefers bright and cool temperatures of 60 to 70 in the daytime and slightly cooler nights. It will thrive best with higher humidity. Misting it weekly will help raise the humidity. During the summer, keep it sheltered from wind and direct sun. With proper care, this “pine” can grow quite large. My grandmother had one at least 6 feet tall and would put small ornaments on it every Christmas.
Hopefully, you will look at your holiday plants with a different viewpoint this year. They have brought color and joy to you during the holidays so give them a chance to thrive and do it again next year.

The Value of Trees By the Numbers

Laura A. Marsala
Apprentice Master Gardener Volunteer

From him who sees no wood for trees/ And yet is busie as the bees/ From him that's settled on his lees/ And speaketh not without his fees.
— English writer John Heywood, 1546

Most people are familiar with the old expression, “He can’t see the forest for the trees,” meaning someone is too bogged down in details to see the whole picture. When you look at trees, are you seeing the whole picture? Do you know what these magnificent sentries contribute to the quality of your life each and every day? Let’s look at some of the important benefits of trees and the reasons they are vital to a healthy planet and a healthy life.

According to the U.S. Forest Service, Department of Agriculture (USDA)1, healthy trees mean:
• Healthy people: 100 trees remove 53 tons of carbon dioxide and 430 pounds of other air pollutants per year.
• Healthy communities: Tree-filled neighborhoods lower levels of domestic violence and are safer and more sociable.
• Healthy environment: 100 mature trees catch about 139,000 gallons of rainwater per year.
• Homeowner savings: Strategically placed trees save up to 56 percent on annual air-conditioning costs. Evergreens that block winter winds can save three percent on heating.
• Better business: Consumers shop more frequently and longer in tree-lined commercial areas, and are willing to spend more.
• Higher property values: Each large front yard tree adds to a home’s sale price. Every dollar spent on planting and caring for a community tree yields benefits that are two to five times that investment — benefits that include cleaner air, lower energy costs, improved water quality, storm water control, and increased property values.
Scenic America, a nonprofit organization dedicated to preserving and enhancing the visual character and scenic beauty of America, states that a canopy of trees in an urban environment can slash smog levels by up to six percent, and the USDA estimates that one large tree can supply a day of oxygen for up to four people.
The following figures from the Arbor Day Foundation provide astonishing proof that trees are hard at work to protect our environment. Consider these numbers:

• Global forests removed about one-third of fossil fuel emissions annually from 1990 to 2007.
• In Los Angeles, trees remove nearly 2,000 tons of air pollution each year.
• In Chicago, trees remove more than 18,000 tons of air pollution each year.
• In Greater Kansas City, trees remove 26,000 tons of air pollution each year.
• Roadside trees reduce nearby indoor air pollution by more than 50%.
• In one year, an acre of mature trees absorbs the amount of CO2 produced by a car driven 26,000 miles.

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Not only do trees help keep our air clean and provide oxygen, they also offer the important protection of shade, especially vital as record high temperatures and extended heat waves are becoming more common due to climate change. Tree shade acts like a natural air conditioner, lowering surface and air temperatures and bringing relief to neighborhoods where paved areas absorb more heat and can be five to eight degrees hotter than surrounding areas. These areas also stay hotter, longer. Shaded surfaces may be 20-45°F cooler than the peak temperatures of unshaded materials. Tree shade helps us keep energy costs down by reducing air conditioner use and increasing comfort levels by releasing water vapor into the air through their leaves.

In addition, trees help regulate the environment, provide shelter and food, and protect from erosion. They provide homes for songbirds, owls, frogs, salamanders, bats, flowers, forest mammals, insects, and more. Approximately 80 percent of all terrestrial animals live in forests.

Finally, there is simply the physical beauty, from the dazzling display of colors in the fall and bright greens in the spring, to the soft rustling of the leaves in a breeze and the pleasant sound of mature fruits and nuts hitting the ground. Let's face it: We owe the trees on our planet so much. As threats against them increase — wildfires, drought, invasive species, loss of open space, unmanaged recreation, disease, and debilitating insects — it is more important than ever to protect and help them thrive. As the Chinese proverb goes, the best time to plant a tree was 20 years ago. The second best time is now.

Did You Know in the United States

25-30 million real Christmas trees are sold each year

For every Christmas tree harvested, 1 - 3 seedlings are planted in the spring

Almost 15,000 Christmas tree farms

350 million trees are growing on Christmas tree farms

North American Christmas trees are grown in all 50 states

One acre of Christmas trees produces even oxygen for 18 people daily

Christmas tree farming is a year round job

There are about 350,000 acres used to grow Christmas trees

It can take as long as 15 years to grow a 6 ft Christmas tree but the average is 7 years

2024 Master Gardener Horticulture Training Class

Master Gardener
Cornell Cooperative Extension

Tuition $125.00

2024 MASTER GARDENER TRAINING

Classes are Tuesday evenings 6:00pm-8:00pm
March 5, 2024- June 11, 2024

Classes held at CCE Cattaraugus:
28 Parkside Drive Ellicottville, NY
Zoom option is available

Open to Cattaraugus & Chautauqua County Residents

Apply online, print and mail application or stop by the office
https://cattaraugus.cce.cornell.edu/gardening/master-gardener-volunteer-program

Master Gardener Volunteers are individuals from the community who enjoy gardening and use their horticultural skills and expertise to educate others.
In return for their training, Master Gardener Volunteers donate their time teaching the community about gardening and the environment.

Subjects included in the training program include:

• Garden Botany • Herbaceous and Woody Plants • Garden Design • Integrated Pest Management • Lawn Care • Nuisance Wildlife Management • Native Plants • Soils, Fertilizers and Composting • Pruning • Vegetable Gardening • Invasive Plants and Pests

Community Workshops

MASTER GARDENER LUNCH & LEARN SERIES

Visit our website to register
cattaraugus.cce.cornell.edu/events

Lunch & Learn

Free Master Gardener Winter Education Series

House Plants 101
Wednesday, December 6, 2023
Noon-12:30pm
Join Master Gardener Irene Culpepper and she shares tips and tricks on growing beautiful house plants, common issues and how to propagate cuttings.

Vermicomposting Class
Monday, December 11, 2023
Noon-12:30pm
Learn how worms reduce our food waste and turn it into rich organic matter for your garden.

Planning a Vegetable Garden
Tuesday, January 23, 2024
Noon-12:30pm
Come learn some tips and trick on how to successfully grow your own food.

National Seed Swap Day & Catalog Party
Saturday, January 27, 2024
Noon-1:00pm
Join CCE's Master Gardeners to learn all about seed starting, where to buy seeds and bring seeds if you would like to swap!

Join us in person at CCE-Cattaraugus
28 Parkside Drive Ellicottville or Via Zoom

Please preregister by calling:
716-699-2377 ext 127 or visit:
https://cattaraugus.cce.cornell.edu/events

Make Jam & Learn How to Can!
Thurs. February 1, 2024
Noon-3:00pm
In honor of National canned food month, participants will get to make jam and take a jar home!

A Visit to The Soil Food Web; a Magical Place That Will Help You Grow Your Best Garden Ever!
Monday, February 12, 2024
Noon-12:30pm
Join CCE Master Gardener, Dinah Hovey as she takes you on a journey into the wonderful world of soil health.

Master Gardener

Cornell Cooperative Extension of Cattaraugus County provides equal program and employment opportunities

Master Gardener Terrarium/Fairy Garden Fundraiser

Tuesday, March 12, 2024, 6:00 PM - 8:00 PM

Tickets are $25.00/each and include a terrarium, succulents and growing medium. Several options to choose from! Refreshments and hors d'oeuvres are included with ticket price as well. There will be extra items, such as fairies, fairy & gnome accessories, decorative rocks, etc. for an additional cost. Master Gardeners will be available to answer terrarium care and gardening questions.

https://reg.cce.cornell.edu/fairygarden_258

2024 Tree & Shrub Program

Each year the Chautauqua & Cattaraugus County Soil & Water holds a conservation tree and shrub seedling sale. A variety of evergreen, fruit, softwood, and hardwood bareroot seedlings and transplants are available. Also available are a variety of bareroot flowering shrubs, ferns, wildflowers, and planting supplies. The annual catalog and order form are available in January.

DEC also offers a spring seedling sale. Visit their website to learn more.

https://www.dec.ny.gov/nature/forests-trees/saratoga-tree-nursery/spring-seedling-sale

CELEBRATE NATIONAL BIRD-FEEDING MONTH

February 2024

Master Gardeners are offering a free educational series to raise awareness of the importance of birds and how we can support them.

Please register by calling 716-699-2377 ext. 127 of visit:
https://cattaraugus.cce.cornell.edu/events

Gardening for Birds
Presenter: Becca Rodomsky-Bish, Cornell University Lab
Monday, February 5, 2024
3:00pm-4:00pm
Becca will discuss how you can support birds in your garden and landscape. Learn how you can get involved in your own back yard via the Great Backyard Bird Count!

Master Gardener

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Make your Own Natural Bird Suet
Monday, February 12, 2024
5:00pm-6:30pm
Participants will get to make their own bird suet to take home. Master Gardeners will be available for questions and provide recommendations on trees and shrubs to support wildlife.

Community Resources

Seed Libraries

Many local libraries have opened free seed libraries to encourage community members to garden and grow some of their own food!

The list is growing, below are a few libraries that are participating. Feel free to donate any seeds to help their seed library grow.

Ashville Free Library (Ashville NY) ashvillelibrary.com
Meyers Memorial (Frewsberg, NY) meyerslibrary.org
Anderson-Lee (Silver Creek, NY) andersonleelibrary.org
Mayville Library (Mayville, NY) mayvillelibrary.com
Seneca Nation Library (Salamanca NY)
James Prendergast Library (Jamestown, NY) prendergastlibrary.org
Alexander Findley Community Library (Findley Lake, NY) findleylibrary.org
Darwin Barker Library (Fredonia, NY) barkerlibrary.org

Free Pressure Canner Testing

Do you have a pressure canner with a dial gauge? It is recommended that gauges be tested annually.

CCE-Chautauqua and CCE Cattaraugus offer free testing! Contact the office for an appointment today.

Master Gardener Help Desk Is Open during the growing season April-Sept

Questions can be asked during "off-season" by staff

Our master gardeners are ready to help with your garden question, identification or issue. Our garden experts will review your request and set you in the right direction. Also, as an extra bonus if you bring in a soil sample, our garden team will test for pH. pH is important for the adsorption of nutrients in your soil.

Cattaraugus County

Contact us at 716-699-2377
e-mail us at cattaraugusmg@cornell.edu

Helpline hours: Wednesday, 1:00pm-3:00pm

visit us at 28 Parkside Drive Ellicottville, NY 14731

Chautauqua County

Contact us at 716-664-9502 extension 224
e-mail us at chautauquamg@cornell.edu

visit us at the JCC Carnahan Center
525 Falconer Street

Helpline hours: Wednesdays noon-2pm

GPS address: 241 James Ave, Jamestown, NY

Holiday Plants to Brighten Your Home

Poinsettia (several colors)

Amaryllis (several colors)

Norfolk Pine

Christmas Cactus

Kalamchoe (several colors)

GARDEN TIPS & TRICKS

Now is a good time to check viability of seeds that you saved (or have left over from past years). One way to check viability is to place some seeds on a damp paper towel, fold the paper towel over the seeds and place in a baggie. After the number of days of normal germination, look at the seeds and count how many have sprouted. This will determine the viability of your seeds. Ex - if you have 10 seeds and 6 have sprouted, the viability would be 60%

KID'S CORNER

"LITTLE TOGS"

(The Optimistic Gardener)

Children can paint terracotta pots for container plantings. Even if new, a terracotta pot should be washed before painting - wash with water and a small scrubbing brush. Let pot dry completely before painting. Use acrylic paint to cover the outside of the pot (sponge brush works well) or paint a picture/design with more than one color. More than one coat of paint can be applied. When it is completely dry, a clear coat can be applied (by an adult) to seal the paint.

References:

US Forestry Service, Department of Agriculture:
https://www.fs.usda.gov/learn/trees#:~:text=Healthy%20trees%20mean%3A,other%20air%20pollutants%20per%20year.
Scenic America: scenic.org
The Arbor Day Foundation: arborday.org
The Nature Conservancy: https://www.nature.org/
8billiontrees.com
Care of Holiday Plants, PennState Extension, 10/19/2007
Reblooming Poinsettia, Donna Zaroy, Kenosha County, University of Wisconsin-Extension, 11/12/14
Reblooming Poinsettia, Sandra Mason, MG, University of Illinois Extension
Beyond Poinsettias: Alternative Holiday Plants, Sandra Mason, MG, University of Illinois Extension.
Caring For Your Holiday Plants, Cochise County Master Gardeners, University of Arizona
Norfolk Island Pine Needs TLC, Rosie Lerner, Purdue University Extension
National Christmas Tree Association, www.realchristmastrees.org

Cornell Cooperative Extension of Chautauqua County is your resource for information on soils, site improvement, plant selection, proper plant care, eco-friendly practices, integrated pest management, composting and so much more! We offer free or low-cost gardening classes and tours all year long, and opportunities to share your love of gardening as a volunteer!

Interested in Agricultural Resources?

Checkout Agriculture Program Subscription

Access to Chautauqua or Cattaraugus County Cornell Cooperative Extension **Agriculture** Program services are granted upon program subscription. All subscriptions cost $65, this includes the "Extension Connection" and other general mailings, Newsletters as well as the opportunity receive services from our regional teams, Lake Erie Regional Grape Program, Cornell Vegetable Program and Southwest NY Dairy, Livestock and Field Crops Program. Additional fees may be necessary for print mailings of regional newsletters.

Please contact the below CCE locations if you are interested in subscribing to the Agriculture Program Subscription.

Cornell Cooperative Extension is an employer and educator recognized for valuing AA/EEO, Protected Veterans, and Individuals with Disabilities and provides equal program and employment opportunities.

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Jamestown, New York 14702
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