Forest Tent Caterpillars

What’s in Store for Us in 2014?

by Sarah VanderMeiden, Carlton County

Will we see another Forest Tent Caterpillar (FTC) invasion in 2014?

According to Mike Albers, Regional Forest Health Specialist with Minnesota DNR’s Division of Forestry, it depends on where you live. The latest cycle of FTCs appears to have started in 2012, with the number of acres defoliated in 2013 adding up to 1.1 million. When current trends are compared to past outbreaks, the numbers indicate there could be widespread infestation this year. However, when conducting field research of FTC egg masses in 30 locations across northern Minnesota this winter, Albers was not seeing the number of egg masses associated with a wide outbreak.

So, depending upon where you live, you might find yourself in the middle of a large infestation, or you might not see a single caterpillar! We most certainly will discover the answer to this question once June rolls around when FTCs are feasting on their preferred species of oak, aspen, basswood, birch, willow, sugar maple and tamarack. FTC will not eat the leaves of red maple and will avoid most conifers. However, when FTC populations peak, caterpillars may try almost anything in their desperate search for food.

During his talk, Albers shared some interesting FTC facts and management tips. Did you know that Forest Tent Caterpillars do not create tents? “Wait a minute,” you might be saying. “I most definitely have seen tents with caterpillars in them!” Well, yes, you have, but those are Eastern Tent Caterpillars, which are distinguished by a solid white line along their sides. Forest Tent Caterpillars, which have powder blue stripes on their sides with a line of ivory dots on top, hatch out of egg masses that surround tree and shrub twigs. Albers likened the masses to a wad of chewing gum wrapped around a twig. One means of

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State Advisory Board Update

by Kit Sitter

The EMG State Advisory Board met in April and welcomed newly hired State Extension Volunteer Coordinator, Diane Greiwe. She will be assisting Tim Kenny, State Director, and Dave Moen, Program Manager, with statewide duties of coordinating the volunteer database and developing advanced certification training for current volunteers.

For those interested in obtaining more leadership skills, Dave is arranging regional meetings emphasizing leadership strengths, group leadership, and examining volunteer

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Effective Presentation Skills for Master Gardeners Part I

by Sarah VanderMeiden

As Master Gardeners, we are charged with delivering research-based horticulture information to the general public. We can do this through a variety of methods – answering questions over the phone, or at a horticulture event, writing articles for the local newspaper, and giving presentations.

Quick question: Which is your least favorite activity – cleaning the bathroom, going to the dentist, or speaking in front of a group? Given that public speaking is commonly known as most people’s greatest fear, I am guessing many Master Gardeners tend to avoid giving presentations.

After working as a college administrator and educator, I have given hundreds of training sessions and seminars. I have come to the conclusion that, as with many other activities, success at public speaking is simply learning an approach that works for you and then practicing, practicing, practicing! And the only way to practice is…..actually speaking in front of a group!

Before we get into the mechanics of preparing, organizing and delivering a presentation, let’s address the fear of speaking in public. Why is speaking in front of others so scary? Well, for starters, we might make a mistake, fumble over our words, or appear that we don’t know what we are talking about. Or our zipper might be down. Whatever your fear is, remember the words of Franklin D. Roosevelt: “The only thing we have to fear is fear itself.”

Most fears can be addressed through the following strategies:

1. Remembering that you are human and will likely make a mistake here or there. It’s ok.
2. Preparing thoroughly, which will increase your confidence and decrease the chance of fumbling over your words.
3. Thinking rationally about your concerns (Hey, I am a Master Gardener, which means I am an expert and I know what I am talking about!)
4. Giving yourself the once over in a mirror prior to your talk, which will eliminate errant zippers and bits of dinner stuck in your teeth.
5. Practicing, practicing, practicing!!
6. Remembering your ABC’s!

A is for “Affirming”

“Learning to overcome your fear of speaking is a simple process of channeling your nervous excitement into positive energy.”

-Mary Ellen Drummond

Do you remember Stuart Smalley, the character from “Saturday Night Live?” He taught us about positive self-talk, also known as affirmations, with his tag line “I’m good enough, I’m smart enough and gosh darn it, people like me.” Though we all laughed at Stuart’s antics, cognitive psychologists have demonstrated that there is a clear connection to the things we tell ourselves and our resulting feelings and behaviors. Positive self-talk has accomplished everything from lifting people from depression to making dreams come true, while positive visualization has enabled athletes to win gold medals. If, on the other hand, we choose to spend a lot of time in negative self-talk by telling ourselves we are going to fumble over our words or forget what we want to say during our presentation – guess what might happen?

To practice positive self-talk/affirmations, remember the following tips

1. Tell yourself what you want, not what you don’t want
2. Use positive words when you talk to yourself
3. Describe in detail how you will successfully present your program.

When you follow these steps, you will discover for yourself that positive affirmations actually program your brain and body to have more positive energy and experience success!

B is for “Breathing”

How do you breathe when you are nervous? If you are like me, your breaths are quick and shallow during stressful situations. Research has shown that slower breathing from the abdominal area helps the body relax and the voice project. Intentionally practicing abdominal or “belly breathing” on a regular basis can train your body to breathe this way in all circumstances.

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**Cook County Master Gardeners**

**Winter ‘Burn’ or Injury in Evergreens**

*by Diane Booth*

Cook County residents started calling me on a regular basis a couple of years ago when we had very warm temperatures in January combined with dense snow cover. Their evergreen trees: white spruce, balsam fir, a few red pine, were showing widespread symptoms of reddish-brown needles. Some entire trees turned an almost brilliant red color while neighboring trees remained a lovely dark green. A number of trees seemed to have sporadic branches that were afflicted with reddish—wheat colored needles. Additional trees looked like the end—tips of their branches had been sprayed with straw-colored paint resulting in a ‘flocked tree look’. They look ‘burned’.

Driving along the Gunflint Trail towards Saganaga Lake, and going up the Arrowhead Trail in Hovland, showed me how many trees were effected along both roadways. The wide-scale tree discoloration throughout the forest was something I had never witnessed before. Winter burn appeared to be the major culprit—although there also appeared to be an increase in needle cast diseases.

This year, I am seeing some damage as well, however, not on the same scale I viewed a few years ago.

So, what is winter burn? Winter burn is the result of water loss in plants during the winter. The amount of the water loss is greater than what the plant can replace; thus the needles dry, die and develop a reddish-brown color. This is when people start to notice something is wrong with their tree and the office calls begin.

Winter burn occurs on both broad and narrow-leaved evergreens. Most of the broad-leaved evergreens grown in zone 4 are usually rhododendrons or boxwood. This year my boxwood (Buxus ‘Saskatoon’) was entirely covered with snow so no winter burn was noticed. Typically this winter injury occurs on branches and needles that are above the snow line. When the snow melts, you discover the top half of an evergreen is a reddish brown while the bottom half that was under the snow is still green. This results in a very noticeable discoloration of the evergreen branches and needles is what we typically call ‘winter burn’.

In winter, even if air temperatures are low, snow cover reflects sunlight, concentrating solar energy on the south and west sides (especially) of the plant. This raises the internal needle temperatures above air temperature and can ramp up the photosynthetic process. Several things can happen inside the needles. Transpiration or water loss increases through the needle stomas as additional water is needed during photosynthesis. If the ground is frozen, the plant is unable to replace the lost water and dehydrates. If the chlorophyll molecules absorb too much solar energy and it can’t all be used in the photosynthetic process, chlorophyll (what makes the needle green) can be destroyed through photooxidation and not resynthesized when temperatures are very cold. This can result in bleaching of the foliage. The discoloration of the evergreen branches and needles is what we typically call ‘winter burn’.

If the plant damage is severe enough, plant death can result. If you are concerned, you can check the plant buds and twigs showing signs of winter burn to determine the extent of the damage. If buds and twigs remain green, then new growth will occur in the spring and in a couple of year, the damage will be minimized.

Other factors can predispose the trees to winter burn or injury. A rapid increase or decrease in temperature in the fall before plants have hardened off completely can result in injury or death to plant tissue that is not acclimated. Plants that go into winter stressed are much more likely to be damaged by winter burn. A stressed evergreen may include one that is planted in marginal soil conditions, experienced drought prior to winter, battled insects or disease issues.

So, what can you do to minimize winter burn or injury to your evergreens?

1. Make sure you water them in well right until snow falls in the fall.
2. Plant trees or shrubs in good soil conditions, take care of any disease or insect issues early in the season so plants will go into the winter less stressed.
3. You can construct a burlap barrier to shade your smaller evergreens on the south, southwest or windy sides of your plants.
4. Make sure you plant the right plant in the right place. Marginally hardy plants for our area will be more likely to experience winter injury or winter ‘burn’.
5. Yews, hemlocks and most arborvitaes do better in sheltered, shady spaces.
Biochar: A New Lease on Life
by Kit Sitter

An ancient process from the Amazon region that is 2000 years old is rising to the top of the list of modern hot topics. If you haven’t heard the term biochar yet, it will become familiar to you soon and potentially be a sought after product found next to the fertilizer bags on the nursery shelves.

In researching ways to decrease greenhouse gases and obtain sustainable fuel, scientists have been examining the technology of pyrolysis, which burns biomass into fuel and produces the by-products of bio-oil, syngas and biochar. If the process is slowed down, in essence smoldering a fire, then more biochar is produced which looks like leftover pieces of charred wood from a campfire. (*This is not the same as charcoal for a grill.)

So, why is this important to gardeners? Biochar is of serious interest because the structure contains holes that can capture water and nutrients; instead of leaching through the soil these nutrients remain in and improve the soil which will benefit the plants. An added benefit is that the biochar could also reduce greenhouse gases by holding in carbon. Biochar also appears to be very stable, thus having nutritive value in the soil for thousands of years. The theory is that when biochar is added to the soil as an amendment along with compost, it has the ability to retain nitrogen and release it to plants. The need for additional fertilizers is thus reduced.

U of M Extension Master Gardeners are helping to monitor and evaluate three garden plots in a five year research project at plots located in St. Paul, Andover and the Arboretum. Even though these sites have different soil structures, they are laid out identically with vegetables and flowers that would be typical of a home garden. The gardens include a section with no biochar, one with 1/2 lb. biochar per square foot, and one with 1 lb. of biochar incorporated per square foot. The program is about halfway complete and is already indicating some positive plant growth results. To keep abreast of results from this exciting research, watch for updates at the UMN Extension site: cfans.umn.edu and search ‘biochar’. Further information is also available at biochar-international.org

Although biochar is not widely available yet to the home gardener, perhaps it won’t be long before we are setting up a pyrolysis machine next to our compost bins and rain barrels!

*Biochar is produced with the intent to be applied to soil as a means to improve soil health, to filter and retain nutrients from percolating soil water, and to provide carbon storage. Charcoal sold for your barbecue contains chemicals that can be toxic to plant growth and should not be used in soils.
What Comes After Neonicotinoids?  
An Introduction to Sulfoxaflor  
by Eleanor Hoffman

Recently, the controversial insecticides known as neonicotinoids and marketed as Iminidacloprid, Clothianidin, and others have proved less effective against sap-sucking insects than they had been. Such seems the common fate of pesticides. The targeted insects develop a degree of immunity to the product, rendering it ineffective and sending chemists in search of a new effective insecticide.

The new ones appear to be a class of insecticides known as sulfoximines. While several are in development, the one currently in use is Sulfoxaflor, which in testing proved effective against pest strains resistant to neonicotinoids, organophosphates, and pyrethrins. Sulfoxaflor is sold under two labels by DOW: CloserSC and TransformerWP. These are available for use in the US and Canada by commercial growers only. It is not available for use in nurseries nor to the homeowner. The University of Delaware Extension announced them this way: “Sulfoxaflor, the active ingredient in CloserSC and TransformerWP, recently received a federal label. It also now has a state label in Delaware. This active ingredient belongs to a novel chemical class called sulfoximines offering effective control of many important sap-feeding insect pests. CloserSC is labeled on a number of fruit and vegetable crops. TransformerWP is labeled on a number of field crops as well as root and tuber vegetables, potatoes, and succulent and edible podded beans.” Links are given for downloading more precise information.

Sulfoxaflor is a systemic pesticide “for control or suppression” of sap-sucking insects such as “aphids, flea-hoppers, plant bugs, stinkbugs, whiteflies, and certain psyllids, scales and thrips” in certain vegetable, fruit, berry, tree, vine, and field crops. It does not seriously impact beneficiais such as ladybugs, lacewings, pirate bugs, assassin bugs, predatory mites or spiders. However, sulfoxaflor is toxic to native bees and to honeybees.

In the labeling material provided with the pesticides, the environmental hazards are made clear early: toxicity to bees (and possibly other pollinators) and a need to avoid using it near water. The Hazards Statement also claims that risks to bees can be minimized if “applications are made before 7:00 am or after 7:00 pm local time or when the temperature is below 55 degrees at the site of application.” In the Use Directions, there is an “Advisory Pollinator Statement” that suggests “notifying known beekeepers within 1 mile of the treatment area 48 hours before the product is applied” to allow them to protect the bees. This advisory statement is not given for every class of crop treated, only for some such as cotton and citrus crops. There are also restrictions for when and how often to apply either of the labeled pesticides. These restrictions include not applying immediately before harvest (number of days before varies); a minimum number of days before reapplication, and a maximum amount of product that can be applied in one year. Also, to protect pollinators, the product cannot be applied or is restricted to one application “between 3 days before bloom and until after petal fall” each year. These use directions vary slightly, depending on the crop.

CloserSC and TransformerWP are available only as sprays. They are not used as drenches or seed coatings. Nothing in the materials addresses retention in soils or guttation, the possibilities of which are suggested in comments from beekeepers and environmental groups. The articles found on-line addressed primarily the effectiveness of Sulfoxaflor in controlling sap-feeding insects. Studies of its long-term effects on pollinators, including bees, will need to be done. According to EcoWatch, “the agency's (EPA) approval of sulfoxaflor and its attempts to mitigate risks to honey bees highlight the real deficiencies in the agency's risk assessment process. Risk assessment approaches have historically underestimated real-world risks, and attempts to mitigate adverse impacts with measures that prove insufficient and impractical. These risk assessment approaches make determinations that the risks are 'reasonable,' while failing to take into account numerous circumstances and realities that make honey bees vulnerable to chemical exposures, including user failure to adhere to application rate guidelines, and local environmental conditions that may predispose crops, and other plants, to accumulate higher chemical residues, especially in nectar and pollen.”
control is inspecting any branches attached prior to bud break and pruning off twigs with egg masses.

Let’s be realistic. Most people are not going to be able to remove every egg mass present on their property. So, what can you do to minimize FTC damage? First, healthy trees can withstand defoliation and will re-foliate by mid-July. Second, protect what is important to you and forget about the rest. Saplings, fruit trees, berry patches and gardens can be protected by constructing a barrier. Surround berry patches and gardens with an 18-24” high ‘wall’ of plastic sheeting. allow the top 4” of the sheeting to flop outward, which will prevent the caterpillars from climbing over the top of the wall. Spraying the wall with oil or slathering a strip of Tanglefoot or Vaseline adds an extra measure of protection. Keep in mind that caterpillars can fall onto your crop from overhead trees so you will need to inspect the crop regularly and pick off any caterpillars you may find. Tree trunks must be wrapped with foil or other material before any oil-based product is applied, but this will only protect the tree if no egg masses were laid in it. It is safe to remove all barriers after cocoons have formed—leaving foil on the tree trunks for an extended period of time may injure the tree.

For more information about Forest Tent Caterpillars, including how to protect your landscape plants and gardens, check out the DNR website.

Effective Presentation Skills cont…

1. Strive for abdominal, or belly, breathing. Put your hand on your stomach and slowly inhale so that your lungs completely fill and your stomach distends. As you exhale, your stomach will fall back down while you completely empty your lungs.
2. Take a long slow breath in through your nose and exhale slowly through your mouth.
3. If you are sitting, straighten your legs so that the bottoms of your feet are exposed to the air. Pretend that the way you take air into your body is through tiny holes in the bottoms of your feet. As you inhale slowly, visualize air entering these holes and traveling all the way up through your body. As you exhale slowly, the air travels all the way down your body and exits through the holes in your feet.

C is for “Composing”

Now that you have prepared yourself both psychologically with affirmations and physically with proper breathing techniques. You might want to try the following tips the day of your presentation to put the finishing touches on getting your mind and body ready for confident speaking!

1. Dress for success. Wear something that you feel comfortable and confident in.
2. Listen to relaxing music.
3. Double check to make sure you have all of your needed visual aids, handout, notes, and other supplies.
4. Relieve muscle tension through relaxation techniques.
5. Dry sweaty palms. Some people even spray antiperspirant on them!
6. Prevent dry mouth with a glass of water or a mint.
8. Check yourself out in a mirror right before you speak!
9. Smile!

Remember, it’s ok, even desirable, to have some nervous energy before you speak. The adrenalin will have you appear energetic, excited, and enthusiastic about your topic!

The difference between being fearful of speaking and being slightly nervous is PREPARATION! The second half of this article, which will appear in the next newsletter, will address how to prepare, organize and deliver presentations. If you can’t wait until the next newsletter comes out, e-mail me at scandihoo@yahoo.com and I will send the second half of this article to you!
Carlton County Upcoming Events

Master Gardener Plant Sale: Our EMG plant sale will be held on Saturday, May 24 at 8:00 a.m. until sellout. The location will be at the Carlton Bike Pavilion. Plants will be priced at $1, $2 and $3.

Garden Tour: The garden tour will take place on Tuesday, July 29 from 4–7 p.m. (July 30th rain day). It will be in the Kettle River area. Garden locations to be determined. Free to the public.

For more information on the above events, please contact Ann Rust at 218-384-3511.

Cook County Upcoming Events

Small Scale Gardening: Join the CC U of M Extension Master Gardeners for a fun day of learning about bonsai, railroad gardening, miniature and fairy gardens, moss and rock gardens. Saturday, June 7, morning informational sessions plus lunch for $25. Afternoon make and take projects on morning topics from $12—$50 depending upon what you choose. For more information and to pre-register, please call Diane at 218-387-3015.

St. Louis County Upcoming Events

Annual DGFS Plant Sale: Saturday, May 24 from 8—10 a.m. at the Leif Erikson Rose Garden, 1300 London Rd., Duluth, MN

Rose Fest at Leif Erikson Rose Garden: Saturday, July 12 from 11:00 a.m. to 2:00 p.m.

19th Annual Secret Garden Tour: Saturday, July 19 from 8:15 a.m. to 2:00 p.m. You have your choice of taking the chauffeured bus tour with lunch ($37) or picking up the map only ($18) and travelling in your vehicle. Send your name, address, phone number, payment and an SASE envelope to: DGFS—Secret Garden tour, 130 W. Superior St., Suite 550, Duluth, MN 55802.

Other Educational Opportunities

2014 Upper Midwest EG Conference is in Bettendorf, Iowa, June 25-28. For additional information and to make reservations, please visit the website at: ae-iastat.edu/iowamg2014/homepage

State Advisory Board Update …
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systems worldwide. Check with your local EMG Coordinator for information on when these will be available.

Currently the makeup of our State volunteers is 14% (of the total 2,450 total EMGs) in the NE region; 11% in the NW region; 5% in the SW region; 14% in the SE region, and 56% in the Central region, which includes the 7 county metro area plus some surrounding counties. Kit Sitter, newly elected SAB chair, and Coralee Fox, newly elected SAB vice-chair, are both NE region representatives. Nancy Berlin (south region) was elected SAB secretary.

Gardening with Short Growing Seasons by Graham Saunders

This book is an organized collection of information about gardening where seasons are short, weather is unpredictable, and thin acidic soils are either clay or rock.

While the information gathered here is from Thunder Bay, Ontario and the surrounding area, the practical information is truly transferrable to anywhere in the northern United States—especially the Arrowhead region of Minnesota.

Graham Saunders uses his 40 years of growing vegetable experience to give you the basics you need to grow food well. The format is very practical, time-tested information that has worked.

This is a great book for both beginning gardeners and long-time gardeners who continually want to learn more from their gardening peers.
The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Would you like to receive a printed newsletter in the mail?
The cost for us to mail out 4 colored issues a year is $10. Please make a check out to: Cook County Extension and mail with your name and address to:
NE Master Gardener Newsletter
317 W. 5th Street, Grand Marais, MN 55604

Kit Sitter, MG with Lake County
has been accepted as one of the Northern representatives on the State MG Advisory Board. She has been a Master Gardener since 2007 and her 3 year term expires in June 2015. She will bring you news from the Board in future NE Regional Newsletters.

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We are looking for more people to help with the newsletter. If you are interested, please contact the above folks from your county.