CROSS POLLINATION

Halton Master Gardeners Monthly Newsletter MARCH 2024 | VOL. 17 ISSUE 2

In this issue:

The Mystical and Medicinal Hawthorn Tree Page 01

March Garden 'To-Do' List Page 03

Successfully Growing Ranunculus and Anemone Page 04

Exploring Peat and Coir, Part 2 Page 06

With Spring Comes Hope and Gratitude Page 09

Question of the Month: Why seeds don't germinate Page 10

Garden Inspiration: Ready... Set...Sow! Page 11

What's Growing On Page 12







The Mystical and Medicinal Hawthorn Tree

Pam MacDonald, Halton Master Gardener

Hawthorns (*Crataegus* spp.) are a genus of common thorny tree in the rose family found throughout the world. Not so long ago native hawthorns were considered weeds in Ontario, spurned by home gardeners and planners of public spaces. Its prickly disposition and association with abandoned, unkempt spaces distracted from recognizing its value and graces. When a hawthorn was planted intentionally, it was usually an English hawthorn rather than our native Ontario cockspur hawthorn (*Crataegus crus-galli*).

Hawthorn is a genus of trees associated historically with medicinal properties since the 1st century and reputed to have mystical powers in ancient Celtic culture. It was the tree planted in the Druids' gardens, and fairies were known to live in snug quarters between their roots.



Image <u>The Druids Garden</u>

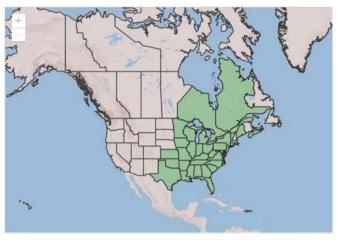
In North America, West Coast Indigenous cultures understood hawthorn's power to strengthen the heart and thin the blood. Its strong, sharp thorns were used as needles, pins, and fish hooks. The fruit of both red hawthorn (*C. columbiana*) and black (also called Douglas) hawthorn (*C. douglasii*) were used as food. As with the Celts, hawthorn played a part in the rituals of Indigenous peoples; burnt hawthorn bark was a component of face paint reserved for ritual purposes.

Images above: Master Gardeners of Northern Virginia / North Carolina Continued on next page

Cross Pollination

THE MYSTICAL AND MEDICINAL HAWTHORN TREE (CONT'D)

Many species of hawthorn are native to North America and adapted to different regions. Cockspur hawthorn (*Crataegus crus-galli*) is found throughout the <u>Eastern Temperate Forests of North America</u> and is recognised as indigenous to Ontario's Carolinian Zone.



Cockspur hawthorn is a small native tree often found in the understory or disturbed areas of the northeast. Map <u>USDA</u>

Cockspur hawthorn is a fast-growing, short-lived, early succession tree found on disturbed land such as abandoned farm fields, roadsides and cleared land awaiting development. In natural forest succession, it would be overshadowed and replaced by maple, black gum, hickory and oak trees as grasslands evolved into forest habitat over time. According to <u>Carolinian Canada</u>, one of the oldest hawthorn savannas in Ontario is part of the Clear Creek Forest Nature Reserve in Chatham-Kent, the result of fields abandoned in the 1950's.

This small tree has big value for wildlife. Bees and other pollinators are attracted to the nectar rich flowers each spring.



Photo: Cathy Kavassalis

It is a larval host for several species of hairstreak butterflies and many species of moths. Caterpillars and other insects that use hawthorn are another source of food for birds and their offspring. The long-lasting fruits are also valuable food during fall migration and for overwintering birds.

Hawthorn boasts "spikes" which provide secure nesting sites and excellent cover from predators. The loggerhead shrike, a small endangered bird, takes advantage of the long thorny spikes to impale prey such as mice.



The Eastern Loggerhead Shrike uses cockspur hawthorn to impale its prey. It is an <u>endangered</u> <u>species in Canada</u> Photo: <u>Ottawa Citizen</u>

In spite of the thorns, cockspur hawthorn can be an appealing landscape tree. With a height of 6 to 10 m (20 to 35 ft) it is a good choice for small sunny gardens. It is pollution, salt and drought tolerant, and is adaptable to various soils, including compacted soils. Lower branches can be removed to create a tree with a globular shape. As a hedge, it is a deterrent to intruders. The flowers, similar in appearance to apple blossoms, and fruit reminiscent of rose hips are attractive features. The leaves are oval, toothed and glossy green. In fall they turn bright orange or red.

In circumstances where the thorns cannot be tolerated, (e.g., young children or pets) some thornless varieties are available: <u>Crataegus crus-galli var. Inermis</u> and <u>Crataegus crus-galli</u> <u>'Crusader' (Cruzam)</u>.



Be aware that non-native English hawthorn is being reported as <u>invasive</u> around the Great Lakes. Its leaves have a frilly appearance.

For more information:

- Not so Hollow Farm
 - Ontario Tree Atlas
- Carolinian Canada
- Garden Design
- Royal BC Museum



Photo: Ontario.ca

MARCH GARDEN 'TO DO' LIST

By Claudette Sims, Halton Master Gardener

Pruning Woody Species – Early March is a good time to prune most trees and shrubs. Always use clean, sharp tools. Inspect and remove dead, damaged, diseased wood. Cut back branches to just above another branch or a bud. Check this link for detailed pruning information. Cherry and plum family: Prune Black Knot Fungus only when temperatures are below freezing to prevent transmission of spores. Oak trees can be pruned until the end of March only, to prevent <u>oak wilt disease</u>. Maple and birch: Wait until leaves have completely grown out before pruning. Minor pruning is OK.

Pruning with Wildlife in Mind – Use the '<u>chop & drop</u>' method to leave prunings in your garden to replenish the soil & provide nesting material for native birds. Leave larger pieces of wood in the garden for wildlife & consider leaving '<u>snags</u>' in place as long as it is safe to do so.

Overgrown Shrubs – Use <u>rejuvenation or</u> <u>renewal pruning</u> to restore scraggly or overgrown shrubs. Which shrubs can you renew or rejuvenate? Here's a <u>list</u>!

Hydrangea arborescens – (Smooth Hydrangea or 'Annabelle') Prune before new growth appears. Remove old weak stems, leaving about 1/3 of stems 30 cm long for structure and support. Check our <u>hydrangea</u> <u>factsheet</u> for more information.

Clematis – Starting at the top of the plant working down, cut out all deadwood on each stem until you reach a live bud. Secure vines as needed. Find detailed info in our <u>clematis</u> <u>factsheet</u>.

Fruit Trees – <u>Prune</u> apple, cherry, plum, pear before flower buds swell. Remove any dead, diseased twigs and prune for open shape. Pear trees generally don't require much pruning, except for shaping. Consider applying for a
<u>Monarch Award</u> if you live in Hamilton!

is your garden for native plants? BUSEN for native plants? BUSEN For native plants? Apply now for a Monarch Award! Www.monarchawardshamilton.org

<u>Raspberries</u> – Summer-bearing red and yellow raspberries, cut canes back to 4-5 feet tall before growth begins. Fall-only primocane raspberries-cut all canes to the ground before growth begins.

Blueberries – Early March, prune out dead, damaged, diseased wood to an open shape to increase air circulation.

Garden Perennials – Aim for minimal disturbance and removal as plant material is crucial to cavity nesting native bees, birds (food/nest building), butterflies. Read about <u>spring "clean up</u>" in detail.

Houseplants – Increase water and feeding as plants start actively growing. Continue inspecting plants for pests like <u>mealy bug, scale & spider</u> <u>mite</u>.

Amaryllis – Cut the flower stalk to within 1" of the top of the bulb, when the flower fades. Give plants a maximum of sun and feed 'weekly, weakly' to produce a large healthy bulb & flowers for next year.

Start garlic, yellow onions when the soil can be worked. Separate cloves just before planting and plant about 2" below soil.

Order New Plants! – Check our map of <u>nurseries</u> in <u>Ontario</u> for ideas. Nurseries specializing in native plants are marked with green stars.

*

Successfully Growing Ranunculus and Anemone

Liza Drozdov, Halton Master Gardener



It's early spring. We're starting to see the sun again and we're itching to get into the garden, but it may be too early to sow seeds. Consider starting ranunculus or anemone corms that will give you flowers as early as April.

Many people are familiar with these early spring flowers used in containers and spring plantings, and as popular cut flowers. Both are easy to grow, and growing from corms is so much less costly than purchasing the plants in bloom from your local garden centre. They bloom very early, so they're a source of nectar for hungry early pollinators, but we gardeners tend to grow them for their beauty and their long vase life as cut flowers.

Both anemones and ranunculus are in the Ranunculaceae family and are herbaceous perennials that grow from tuberous roots or corms. Both are tender perennials, hardy to around zone 7, so they need to be stored over the winter in Ontario. Like pansies, both ranunculus and anemones will take light frost and cold temperatures.

They prefer freedraining soil and full sun which is easy to provide in early spring before trees leaf out.





At this time of year you'll find these wrinkly, unpromising looking corms sold in plastic bags in garden centres and online. Most of us will follow the instructions on the packet--that is, to plant them directly in the garden after all risk of frost--and nothing happens. We write them off as a failure and never try again. But both are easy to grow successfully if you follow the steps below.

The most important thing to know is that both ranunculus and anemone are cool weather plants-like pansies--and they need to grow cool. They thrive when daytime temperatures are around 15C and nighttime temperatures are just above freezing. When hot weather arrives they will quickly go dormant; if you plant them in May, odds are they might be just emerging when the soil and air temperatures are already too high for them to thrive. So you need to plant them out into the garden by early-mid April. To do so you need to start them early: February or March is not too soon. You also need to soak and pre-sprout them.



Images: Liza Drozdov

Continued on next page

SUCCESSFULLY GROWING RANUNCULUS AND ANEMONE(CONT'D)

Steps to Success

1 Soak the corms in room temperature water for 4 hours. They will plump up and get a head start on growth.

Plant the corms about 1" below soil level in well-drained soil. Most bagged potting mix is fine. I plant mine in individual cells, which makes it easy to pot them up and to remove duff corms that don't sprout. Ranunculus need to be planted with those weird octopus fingers pointing down. Anemones are a bit trickier; their lumpy shapes don't reveal much. You might find dried roots or stems still attached that may give you a clue about which side is up. If in doubt, just plant the corm on its side the plant will figure it out.

3 Keep them dark and cool (10C) in a basement or unheated garage, for 10 days or so. Water once a week if dry—but ensure they aren't wet or they might rot. During this time they'll establish roots that emerge from the corms. Soon you will see little nubs poking up through the soil; this is the crown of your plants beginning to sprout, and it's time to get them under lights.



After 10-14 days, even if they aren't sprouting yet, put them under lights; ordinary shop lights are fine, as is a sunny window sill. You'll see green growth almost immediately. Give them as much light as you can to ensure they don't grow spindly. **5** Ranunculus and anemones need to continue to be grown cool, ideally in a garden shed or unheated garage under lights. Within a few weeks you'll have small healthy plants that can be potted up into larger pots and eventually out into the garden. They'll bloom for weeks until the weather gets too warm, then they'll go dormant. See sidebar below for storage.

They can generally be planted outside in early-mid April (in southern Ontario) since they are so cold hardy, but if we have a late snowfall or intense cold snap you may want to



cover them with a frost cloth or bring the containers in to avoid damaging the flowers.

Sidebar:

You don't have to treat ranunculus and anemones as disposable plants; both are easy to keep over for years, just like dahlias, and your stock will increase from year to year as the corms multiply and grow in size. If you've left it too late to start from corms this year, buy plants from the garden center and save the corms for next year. It's so easy to do:

- 1. Enjoy the flowers while they last, keeping the pots well watered and lightly fed.
- 2. When the hot weather starts they will go dormant. You'll see the leaves yellow and die off. At that point, stop watering the pots and allow them to dry out.
- 3. Shake off the soil and carefully remove the corms. Place them in brown paper bags (not plastic) and store them in a cool, dry place over the next 7-8 months.
- 4. In early February of the following year, soak the corms and plant again.

Exploring Peat and Coir—Part 2 Balancing Environmental Consciousness and Horticultural Benefits in Garden Practices



Images clockwise: Coconut husks removed and waiting to be processed (Image: Canva). Brown fibers of coir pith (Image: Canva). Cross-section of a coconut showing the husk Image: <u>Science Direct</u>

harvests, coir is now being processed for the horticulture industry. Most of the production occurs in India and a large proportion of that finished product is shipped to China and North America. Only a few of the countries where coconuts are grown have developed the infrastructure to process the waste material of coconut harvests into coir products. (Currently, horti-

What is Coir?

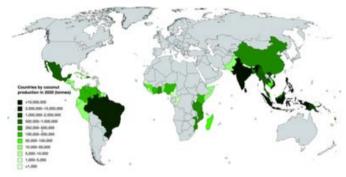
Coir is derived from the outer husk of coconuts. When coconuts are harvested, the nut is removed and the remaining husk is processed into coir and coir-related products. Traditionally, coir was developed for the home market and processed into varn, mattress fiber, ropes and rugs. More recently it's been used for erosion control mats, reptile bedding and creating plant liners. Used in horticulture as a potting medium, coir has the ability to hold moisture, provide reliable drainage, and improve soil structure, (allowing air to enter so that a healthy root system develops). Similar to peat, coir contains very few nutrients so it needs to be mixed with other materials (i.e., compost, etc.) to provide the nutrition for optimal plant growth. It has a neutral pH compared to peat moss.

Where does coir come from?

In 2019, approximately "62 million tons of coconuts were produced on a global level (Food and Agriculture Organization of the United Nations 2021), creating about 20 million tons of husks and thus a theoretical potential of 6 million tons of coir." Previously a waste material from coconut

1. Coir from Coconut Processing - NC State U.

cultural coir only comes from India, Sri Lanka and the Philippines). It can be compressed for transportation, however the costs of shipping this material have a significant impact on the price for consumers.



Most coir exports come from India, Philippines and Sri Lanka This map indicates the locations of coconut production. Image: <u>Wikipedia</u>

How is coir harvested?

Coir is harvested from coconut shells. The fibers within the husk are torn apart by a sequence of processes. First, the husks are put through a curing process over a period of a week to breakdown the fibers. A series of steel combs then remove the fibers from the husks. They are then dried and prepared into final products. Some material is bagged as chips and some is compressed into coir blocks.

Continued on next page

EXPLORING PEAT AND COIR—PART 2 (CONT'D)

The different products include:

- coir pith looks dark brown like peat, holds moisture extremely well but can smother the roots of plants
- coir fibers stringy, provide a good medium but is not absorbent, however, it is long lasting and can be re-used
- coir chips have the best qualities of coir and peat. They retain moisture but also have air pockets which allow for root penetration



Once water is added, coir blocks will expand 5-10 times their size. They absorb water easily & stay moist for a longer period than peat. They can be used as you would peat, amending with perlite, compost, vermiculite & fertilizers.



Coir Chips

	Pros	Cons	Environmental, Cultural Considerations
Peat/ Sphagnum Moss Based Products	 aerates soil well drains well promotes soil moisture readily available locally sourced 	 compresses more easily may contain some organic matter, seeds acidic, low pH low in nutrients once dry is difficult to re- moisten 	 locally sourced (Canada) peatlands help filter water and excavation disrupts that system ancestral home to First Nations peoples (used for hunting/fishing, etc.) peat takes thousands of years to form stores an enormous amount of carbon (5 x more than the Amazon rain forest) harvested at a unsustainable rate in some regions, i.e. Europe
Coir Based Products	 decomposes more slowly neutral pH, not as acidic as peat holds moisture well, (wets more easily), drains well used as a hydroponic medium or soil medium aerates soil well ships compressed - expands to 5 - 10 x its size available in compacted bales & blocks less hydrophobic than peat higher than peat in phosphorus & potassium 	 low in nutrients more expensive at one time it contained high amounts of salt; this has been resolved, however there are concerns re: the fresh water used to desalinate it (see note in considerations) it is suggested to rinse the coir before using it as a soil media more difficult to find in bulk 	 sourced from India, Southeast Asia makes use of the waste material from coconut harvesting renewable coconut grown in plantations results in a monoculture and high pesticide use must use large amounts of freshwater to remove salt must be transported enormous distances concern re: workers exposure to fibers concerns about wastewater from the curing process

Considerations for Using Peat & Coir as Soilless Medium

Continued on next page

EXPLORING PEAT AND COIR—PART 2 (CONT'D)

What environmental considerations are there with both peatlands and the use of coir?

- Coir must be transported long distances to reach consumers in North America.
- Workers involved in the coir industry are exposed to 'coir dust' and have been found to have a higher incidence of lung disorders if exposed for a long time (<u>Study on effect of coir</u> <u>dust on pulmonary disorders in coir industries of</u> <u>Odisha</u>).
- Processing of coir requires chemicals during the curing process which creates a wastewater issue.

The production of coir products requires extensive use of freshwater and is processed in areas with limited freshwater.

Should I still use coir in my gardening activities?

Again, this is an individual's decision based on their priorities and values.

Consider researching and evaluating the business practices of those who manufacture coir products. Coir seems to have the potential to be a suitable replacement as a potting media if some of the concerns above are resolved.

Further Information:

- <u>Exploring Peat & Coir Part 1 (Peat)</u> Cross Pollination, Halton Region Master Gardeners
- <u>Coconut Coir vs Peat Moss</u> Washington State University
- <u>How to Make Peat-Free Potting Soil</u> Ninety % Native (YouTube)

Peat:

- <u>Canadian Spagnum Peat Moss Association</u>
- Gardening With Peat North Dakota State U.
- <u>The Land of the Mushkego.</u> Xavier Kataquapit, The Nation Archives, 2006
- <u>The Myth of Permanent Peatlands</u>. L. Chalker Scott - Washington State U.
- Northern Peatlands in Canada
- Peat Substitution in Horticulture
- Peatlands International Peatland Society

Coir:

- <u>Coir, M. David. Under the Solano Sun</u>. UCCMG (Univ. of California), Sept. 2022
- <u>Coir is a sustainable alternative to peat moss in</u> <u>the garden</u>. OSU Extension Service, Oregon State U.
- <u>Coir Offers Pros & Cons</u>. Nursery Management
- <u>The Pros And Cons Of Growing In Coco Coir</u>-Advanced Nutrients 2018

Read Part 1 - Exploring Peat & Coir



A wide variety of products can be made out of coir. Images: Canva









With Spring Comes Hope and Gratitude

Pam MacDonald, Halton Master Gardener

It's official! The prognostications of Wiarton Willie, Shubenacadie Sam and Fred la Marmotte have confirmed we are in for an early spring. As always I will consult Halton Master Gardeners excellent monthly TO DO List for what needs to be done (or left alone) in my garden as spring unfolds.

In addition, here are some spring activities to lift the spirits but also remind us of how we can do better collectively to care for the fragile ecosystems within and beyond the boundaries of our own backyards.

Lift the Spirits by walking in the RBG arboretum to see early spring ephemerals like Bloodroot and Hepaticas in the woodlands and skunk cabbage in the swampy edge of Cootes Paradise.

Take a moment to go for a walk in the Beamer Conservation Area to see why it is so important for us to address the problem of invasive garden plants.

L**ift the Spirits** by listening to the birds celebrating the end of winter and the advent of spring. The male cardinals have started their courting songs.

Take a moment to reflect on why once common birds in our area, such as warblers and wrens, meadowlarks and redwing blackbirds are now silently absent.

Lift the Spirits by browsing native plant nursery catalogues. As of March, some on-line nurseries are taking orders for this year's offerings.

Take a moment to choose one invasive species in your garden to remove and choose a native plant to replace it with; put your order in, online.

ift the Spirits by planning a summer visit to a public garden or park that has a Pollinator Garden to see how the tide is turning on the definition of beautiful gardens: Hendrie Gardens at the RBG, Pollinator Paradise on the Pipeline Trail and Victoria Park in Hamilton, and Butterfly Wing Garden at Oak Park, Oakville, to name a few.

Take a moment to properly dispose of any herbicides, pesticides or fertilizers you've kept around just in case. (In most municipalities these materials need to be taken to a Recycling Centre for disposal).

Lift the Spirits by recognizing that if you are reading this newsletter, following us on Facebook or have attended a CCIPR presentation, you have, wittingly or unwittingly, started your journey to be an ecologically attuned gardener. Congratulations!

NN This was written in gratitude for Cathy Kavassilis and Claudette Sims, two of our most masterful Master Gardeners who have taken on the challenge of educating gardeners across the country about invasive plant species and are matching their words with action. Cathy and Claudette are founding members of the Canadian Coalition for Invasive Plant Regulation (CCIPR). CCIPR's objective is to protect biodiversity, public health and the economy by calling for federal regulation of invasive plants sold in the horticultural industry.

5



By Hariette Henry, Halton Master Gardener

If you are new to starting seeds and you want them to develop into healthy plants it's a good idea to start with quality seeds from a reliable seed source. Germination Instructions should be on the back of the <u>seed</u> <u>packet</u>. These instructions will often include optimal temperature, light requirements, seeding depth, weeks from sowing to planting and whether the seed needs cold, moist stratification or scarification.

The following are some of the more common reasons that seeds don't germinate:

- Seeds that are too old or have been stored incorrectly will have poor germination rates. Check the expiration date on your seed packet. If you're not sure how old the seed is, you can do a <u>germination test</u>. If the test rate is 70-90%, you should be fine. If it's lower than 70% it may be best to purchase new seed. Ideally seeds should be stored in cool, dry locations away from direct sunlight and enclosed in packaging that reduces moisture and resists spoilage.
- A common seed killer is dryness. The first step in the germination process is the absorption of water, which causes the seed to swell and germinate. At this time, sees are vulnerable, as they have begun sprouting and will not continue to do so without sustained moisture.
- At the same time seeds do not like a soggy environment. They need oxygen and, if kept waterlogged or in compacted soil, they may succumb to fungal and bacterial root rots, known as <u>"damping-off"</u>.

Steps of seed germination, Seed and Seedling Biology- Penn State Extention

testa

splits

adicle

epicoty

plumules

through soil, so

leaves are not

damage

lateral

roots

ackward

pulls

epicotyl

radicle grows down

nto soil

once abov

soil, epicotyl

straightens and the leave

open out

Last year I started plants from seed and I didn't get as many growing on as I would have liked. Can you explain why seeds don't always germinate?

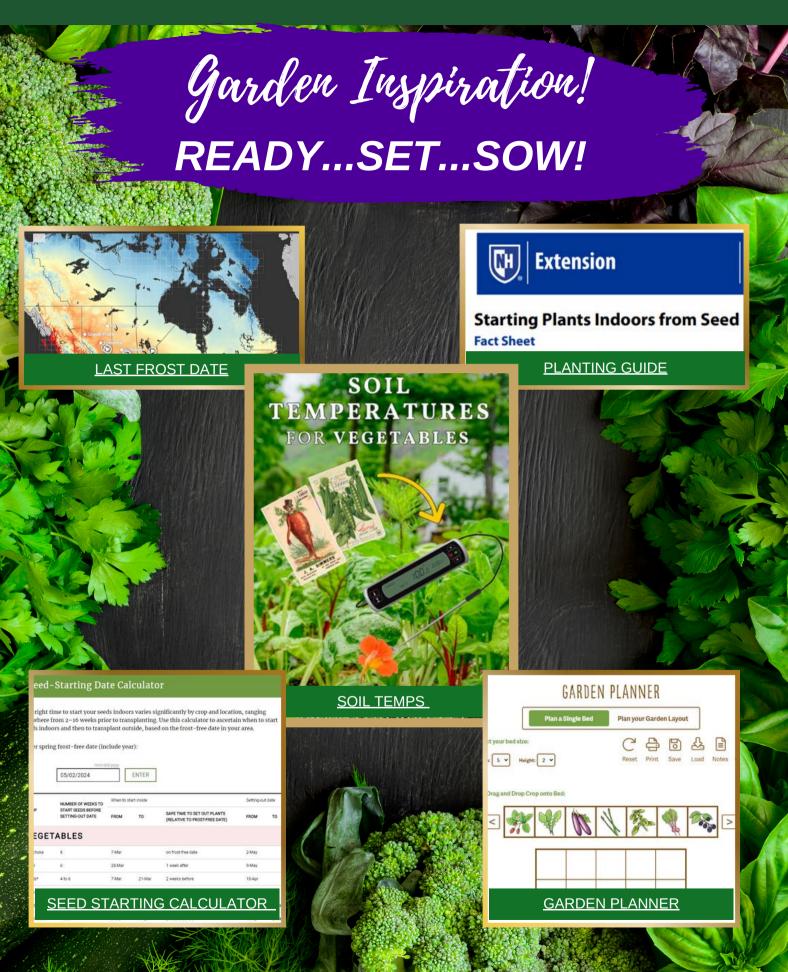
- Light can stimulate or inhibit germination. Some crops require light while others germinate best in darkness. Seed catalogues and packets generally indicate a seed's light requirements. When sowing seeds that require light, do not bury them too deeply or they will not have enough stored energy to reach the soil surface and will die.
 - All seeds have <u>optimal</u> <u>temperature ranges</u> for germination. The minimum temperature is the lowest temperature at which seeds can

germinate effectively. The maximum is the highest temperature at which seeds can germinate. Anything above or below this temperature range can damage seeds or make them go dormant. At optimal temperatures, germination will be rapid and uniform.

- It is best to start seeds in a medium that is specifically designed for seed starting. Artificial soil-less mixes offer these desired traits. They are usually fine, uniform, well-aerated and loose, and they also have low fertility. They should be free of insects, disease organisms and weed seeds.
- For some seeds, certain conditions such as exposure to cold for a specific amount of time (stratification), or abrasion (scarification), or soaking may be needed to break dormancy and sprout. This is the case with many of our native tree and flower species.



MARCH 2024 | Vol. 17 Issue 2









PARKS & GREEN SPACE

GAGE PARK TROPICAL GREENHOUSE

Visit the lush tropical greenhouse in Hamilton.



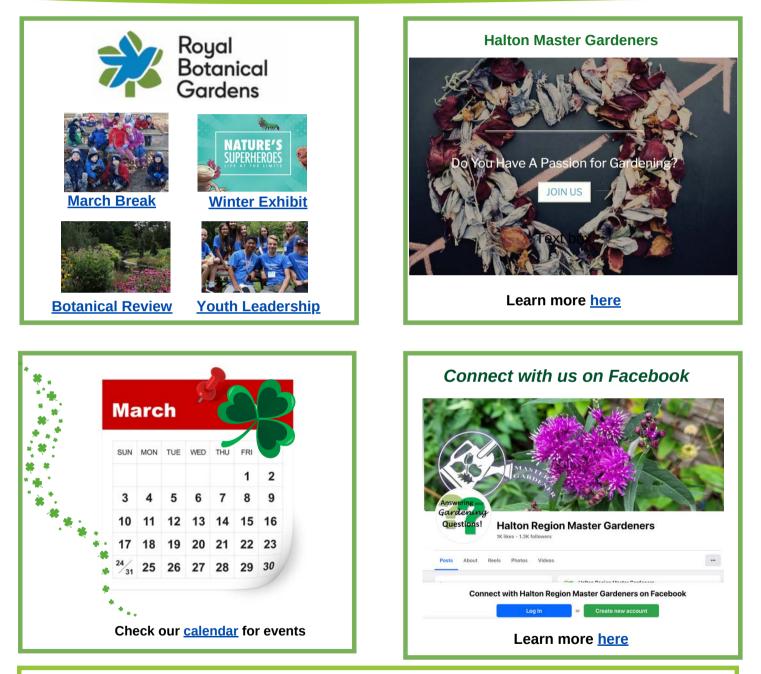
Spring Tide Bulb Show March 8 - 17, 2024

Learn more here



Cross Pollination





About Our Newsletter

Cross Pollination is published monthly from February to December and is written and prepared by our dedicated volunteers. Halton Master Gardeners are experienced gardeners who have studied horticulture extensively and continue to upgrade their skills through technical training. We strive to provide science-based, sustainable gardening information to the general public. The information in our newsletter has been verified by our volunteers to the best of our abilities, but given the scope of horticulture and science some concepts may not reflect current knowledge. The content displayed in our newsletter is the intellectual property of Halton Region Master Gardeners and their authors. It can be shared in its entirety, but specific content should not be reused, republished or reprinted without the author's consent.

Copy Editor: Isabel Belanger

Your donations support our work!