

CROSS POLLINATION

Halton Master Gardeners Monthly Newsletter
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Halton Region
Master Gardeners



Monstera Mystery Revealed

Why do some leaves on Monstera deliciosa have holes and others do not?

By Hariette Henry, Halton Master Gardener

These holes are called fenestrations and though many theories have been set forth, [research by Christopher Muir](#) of Indiana University Bloomington, offers the best explanation.

The holes are an adaptation to the plant's rainforest habitat. The *Monstera deliciosa* also known as Swiss cheese plant, lives in the dark understory of tropical rainforests. It relies on capturing unpredictable shafts of sunlight, known as "sunflecks", in order to photosynthesize for energy. Muir questioned whether the "sunflecks" could explain the unusual leaf shapes so he used mathematical models to compare leaves with and without holes. He found that both leaf shapes benefit equally from the same amount of sunlight.

A leaf with holes will miss some sunlight as the light passes through the holes, a solid leaf on the other hand can take up less space and still receive the same amount of light as long as the surface area is the same. Young plants and new leaves on a Monstera are closer to the forest floor, where fewer flecks of sunlight reach. The poor quality of the light here means that holes do not benefit the plant. As the Monstera matures, and its aerial roots allow it to attach to a host tree and climb, it reaches parts of the understory with more flecks of sunlight. Then the leaves become larger, develop holes and are held away from the trunk where they have a better chance of capturing the sunlight necessary to survive. ✿

Photo: Hariette Henry

APRIL GARDEN 'TO-DO' LIST

by Claudette Sims, Halton Master Gardener

- ☐ **Nature-Friendly Spring Clean Up** – Resist the urge to ‘clean up’ the garden – Mother Nature isn’t dirty! Wait until temperatures are above 10°C for a week. Leave perennial stems in place or cut back to about 15 cm from soil. Stack prunings against a fence or use the ‘chop & drop’ method to return organic material to the soil. Leaves and stems provide nesting material for birds and allow native bees and butterflies time to emerge.
- ☐ **Lawn** – Remove leaves or debris, **only if** walking on the lawn leaves NO footprints. Wait until the lilacs are in bloom to overseed grass. If it’s too cold, seeds will rot.
- ☐ **Prune overgrown vines, & shrubs** that DON’T flower in spring, as needed. Use clean, sharp tools to remove dead, damaged, diseased wood. Cut back branches to just above another branch or a bud. Keep a sharp eye out for cocoons and chrysalises when pruning.
- ☐ **Lavender** – When new growth starts to appear, use secateurs to prune back dead or overgrown stems to a vigorous bud. Do not over prune. More info [here](#).
- ☐ **Seeds** – Time to start your **tomato seeds** if you haven’t already done so. Start **tender annual flowers** [indoors](#) for mid to late May planting. **Seed cool weather crops** like peas, spinach, lettuce, beets, radishes directly in the garden as soon as the ground can be worked.
- ☐ **[Divide or transplant perennials](#)** – as growth resumes and soil is workable.



Photo: Scarecrows Make Me Smile FB



Nesting birds will really appreciate leaves and twigs left in the garden.



- ☐ **Spring bulbs** – Blood meal or chicken manure pellets sprinkled around emerging tulips **may** help to deter deer and squirrel grazing.
- ☐ **Oak Wilt** – Stop pruning oaks from bud break to leaf drop (generally April to November) to reduce the risk of [oak wilt](#). If you absolutely need to prune, treat cuts with pruning paint. Note: This is the only time pruning paint is recommended.
- ☐ **Dahlia, calla, canna etc.** – If tubers start to sprout, pot them up and grow in your sunniest window. Otherwise, continue to check them weekly. Pot up bulbs from late April to May.

April Blooms

Watch for native [Bloodroot](#) (*Sanguinaria canadensis*) in your April garden. For more spring flowering native plants visit [CanPlant](#).



MAKING MORE LILIES

By Liza Drozdov, Halton Master Gardener

I grow a lot of lilies—exotics and natives, species and hybrids. I absolutely love them—their fragrance is intoxicating and they are so easy to accommodate in the garden, whatever size. Generally speaking, as long as they have rich, organic soil with reliable moisture, most lilies will do well, with few demands. They take up very little square footage and can be squeezed in among other plants where their tall strong stems will emerge to flower above the rest of the foliage—often as tall as six to eight feet.

There are hundreds of species lilies that can be found mostly in the northern hemisphere (Europe, Asia and North America), growing in forests, grasslands, marshes and on mountains.

However, most lilies available commercially are hybrids of exotic species which have been bred to offer improved disease resistance, hardiness, larger blooms, and taller and stronger stems. In Ontario and Eastern North America we have several native lily species which are sometimes difficult to find in nurseries but well worth seeking out.

The three most common native lilies in Ontario are: *Lilium canadense* (Canada Lily), - pictured below, *Lilium michiganense* (Michigan Lily) and *Lilium superbum* (Turk's Cap Lily). They are similar in appearance—all have down-facing yellow to orange flowers that recurve, some more than others, revealing a yellow throat with dark spots.



Lilium canadense, Canada lilies vary from yellow to orange
Image: Liza Drozdov

Their leaves are whorled at intervals around the stem, and they can grow up to five or six feet if in ideal conditions—though it will take a few years to achieve this height.

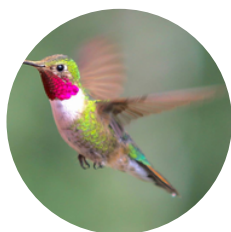
Species lilies are more demanding than hybrids as they insist on growing conditions that replicate their native habitat. *Lilium canadense* and *L. michiganense* want to grow in wet soil, such as that found in floodplains, wetland margins or boggy stream edges, ditches, forests, wet meadows and fields. I have mine in a bog, along with primula, ferns and sedges.

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LILIES (CONT'D)

All three of our native lilies are often mistaken for *Lilium lancifolium*, an Asian species that is much more common and has naturalized throughout the region. It's more tolerant of dry soil which allows it to spread more aggressively. *Lilium lancifolium* is often referred to as Tiger Lily, though it's spotted, not striped; logically it should be referred to as Leopard Lily, but presumably it was named by someone who'd never seen a tiger. There are two key differentiators that can help tell our native lilies and exotic Tiger lilies apart. One is the leaves—which in Tiger lilies are alternate, not whorled. The other is the appearance of bulbils (see below) in the upper axils of the leaves; our native lilies don't produce these, but they are prolific on *L. lancifolium*. Like all true bulbs, lilies only bloom once a year, and after the bloom is finished the leaves replenish the bulb for the following year's display. A typical lily inflorescence is a raceme—a single unbranched stem with individual blossoms on stalks growing off of it. Each flower has three sepals, three petals, six filaments and anthers and one stigma, at the base of which are the nectaries. Lilies also produce a lot of pollen—which is toxic to cats and can stain fabric.

Most hybrid lilies are very fragrant, especially at dusk—which makes them attractive to moths as well as humans. Sadly, our native lilies aren't very fragrant, but their colour attracts many pollinators, including the ruby-throated hummingbird, swallowtail butterflies and several native bees and moths.



left: bulbils in leaf axils on tiger lily
Image: [B & D Lilies](#)
top: ruby-throated hummingbird, a pollinator of lilies

Last fall, while moving some plants around I accidentally chopped a big chunk off my Canada Lily (*Lilium canadense*), one I've grown for several years and which was finally approaching four feet in height. After I screamed and swore for an hour I gathered all the broken lily bits and kept them aside, then carefully replanted the remaining partial bulb. Since most of its basal plate was intact, I thought it might have a chance at survival, but we'll see this summer. I thought I'd experiment with the salvaged lily scales to see if I'd have some success with propagating them by scaling.

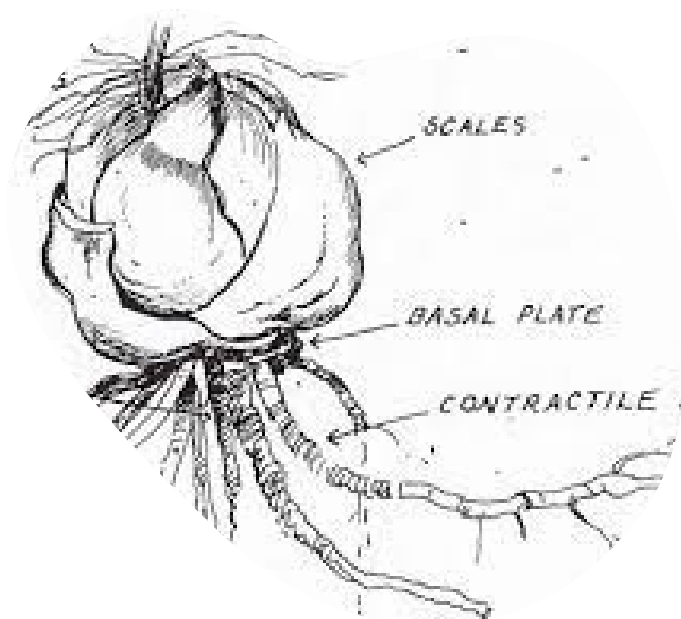


Image: Olds College 'Lily Basics'

<https://www.arts-lilies.org/news/lily-basics-part-2-morphology/>

Scaling

You don't have to wait for a disaster like mine to try scaling lilies. You can either buy new bulbs—usually available through mail order in spring and late summer, or take some scales from bulbs you have in the garden. Whatever you choose, you will have the most success with fresh bulbs.

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LILIES (CONT'D)

In late summer, after the lily has finished flowering, dig down carefully along the stem to expose the bulb. Look for firm plump scales, and try to break them off as close to the base (basal plate) of the bulb as possible. This tissue is where the bulblets will eventually form. Gently peel off a few of the outer scales like you would an artichoke, taking care to disturb the bulb as little as possible and be sure to not damage the roots or basal plate. Then replace the soil around the bulb and it likely won't even notice the operation. You can also dig up the entire plant to harvest some scales if that's easier for you—then replant it when you're done, but I think that's probably more stressful for the plant. Never take more than a few scales as you want to minimize the stress on the bulb. Some sources say you can take as much as 50% of the original bulb without issue, but that seems excessive to me. Each individual scale can produce up to three or five bulblets—so, unless you are planning on growing lilies commercially you will have plenty to work with if you just take three or four scales. I'm not sure how many you can use in your own garden, but you can share extras with friends.

Once you've harvested your scales, keep them from drying out by wrapping them in moist paper towels, then simply mix them with damp sphagnum or peat moss, vermiculite and/or perlite. What you use isn't critical—as long as the medium remains moist. Place them into a plastic Ziploc-type bag and make sure there's a small hole in it to allow in some ventilation.

Leave the bag in a cupboard or drawer that remains dark and around 70 degrees F/21 C, then just leave it alone. Check back every few weeks to ensure the medium remains moist. Depending on the type of lily, it will take eight to ten weeks to see bulblets forming on the scales.



Bulblets form on stem below soil level, above main bulb
Image: [B & D Lilies](#)

After my Canada Lily disaster, I took the salvaged scales, popped them into a sealed plastic bag with moist potting compost and kept my expectations low. But when I checked on them six weeks later I was astonished to see through the plastic bag some roots were already forming, and they hadn't dried up or rotted away, which was thrilling.

Then, three months after the day I'd first scaled them, I opened the bag and found tiny lily bulblets around the size of peas had formed on the scales. Many even had several roots already. There were a dozen or so tiny bulblets which I then potted on into soil. If some scales are 'unsprouted' you can leave them for a while longer as they may take more time. But, if you don't see anything in six months I'd give up.

The bulblets will need to be vernalized—exposed to simulated winter conditions—for about eight weeks. This can be done in a refrigerator. Then they can be planted outdoors in spring. Ideally the new bulbs should be kept in a nursery bed or in pots in a protected cold frame for a couple of years before they are big enough to put out in the garden.

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LILIES (CONT'D)

Later this summer they will likely put up a single shoot about 4" tall, looking much like a fat blade of grass. Next year they'll produce a short stem that looks like a typical lily—one that may even flower, but it will take several years for the bulb to mature enough to produce a tall stem and lots of blooms. If all goes well I'll have more than a dozen Canada lilies where I started with one—well, half of one.

Other Propagation Methods

Natural division

Like most bulbs, lilies will multiply underground over time. *Lilium michiganense* sends out stolons underground, with small new bulbs forming along the length of the stolon, often some distance from the parent.

Other lilies multiply into clumps and some, like hybrid Asiatics, do so very quickly. Native species aren't so eager, unfortunately. If you notice your lily stems are getting crowded, or shorter, or not blooming as well, then it's a good idea to dig up the congested clump and pull apart the bulbs. Replant them in enriched soil.



New bulbs forming along the underground part of the parent stem
Image: Liza Drozdov



L. michiganense, Michigan lily, considered native to Ontario
Image: Janet Mackey

Stem bulblets

When you lift your lily clumps for dividing you may find small bulblets hanging on the underground part of the parent stem. Stem bulblets are formed every year, and you can detach them annually and pot them on around the garden or a nursery bed. Not every type of lily forms stem bulblets; they are most common on Asiatic hybrids.

Bulbils

You may have noticed some of your lilies have small dark beads tucked into their leaf axils. They are found on Tiger Lilies, but are also present on hybrids that have *L. lancifolium* in their parentage.

These little beads are called bulbils, and they are essentially aerial bulbs that form in the leaf axils and fall off when ripe, eventually forming colonies around the mother plant. You can just let them do their thing or pick off the seeds and grow them on in a pot to plant out elsewhere.

Every one of these methods of propagation: division, scaling or planting out bulblets or bulbils will produce a genetic replica of the parent plant.

Seeding

Lilies propagate easily from seed, but like with all seedlings they won't be exact clones of the parents.

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LILIES (CONT'D)

They'll be whatever results from the pollination of the flower—that doesn't mean it'll be an inferior plant. You may create something unique and special if you try to make some crosses. Lilies grown from seed can take up to seven years to bloom, depending on species.

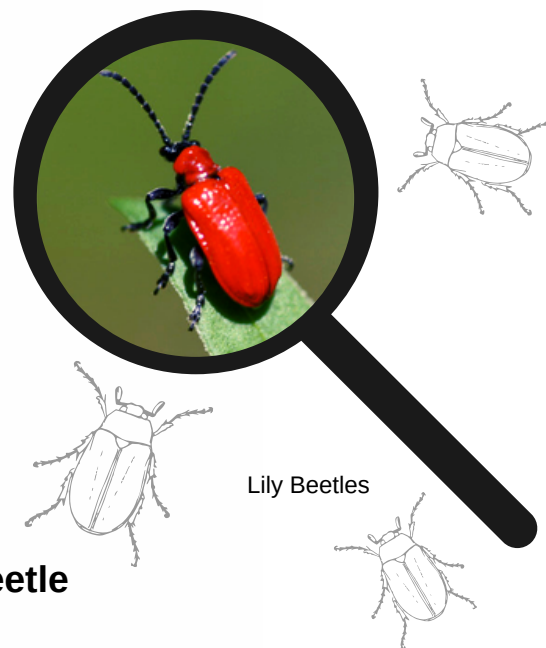
In general, it's better to remove spent lily flowers and not allow seeds to form unless you are attempting to hybridize your own new lilies. It's an inefficient and slow method to increase stock and producing seed weakens the bulb. It's much better to let the energy from the leaves feed the bulb and not waste it on producing seed.

Harvest the seeds when the tops of the pods begin to split open, and plant them on edge in compost, then wait. Some lilies will germinate quickly in the same year, others need to be cold stratified or vernalized. Give them a 10-12 week warm period, then 10-12 weeks in a cold refrigerator, then back into warmth. This will trigger germination. You can also just leave them outside and let them be exposed to natural freeze/thaw cycles, or save them in the fridge in moist compost, in a sealed bag, and sow in spring.

Lilies are monocots—they'll send up one seed leaf the first year, nothing more. Depending on the species you've seeded, you may have to wait from two to five years before seeing your first flowers.



These are bulblets from scales that developed after a period of weeks in a plastic bag Image: Liza Drozdov



Lily Beetle

We can't talk about lilies without mentioning these beasts. They can be an issue, but honestly, they are easy to deal with. I'm a somewhat careless, lazy and haphazard gardener, and I have hundreds of lilies, but almost no lily beetles. Unlike Japanese Beetles that can travel over distances and arrive in swarms to decimate your garden, lily beetles tend to stay put. Therefore, they are fewer in number and more easily controlled.

Lily beetles first arrived in Canada in the 1940s, likely in a shipment of lily bulbs, and they've been making their way across the country ever since. They're now in every province except BC, and they have no natural predators, so it's up to gardeners to control them.

Adults are bright red and look like an elongated ladybug, without the spots. Their larvae are a little more difficult to see because they tend to hide on the underside of the leaves and cover themselves with their own frass (excrement), looking like a black slimy mass. That both hides them and protects them from predators and ensures any topical insecticide you might want to use against them won't reach the grub.

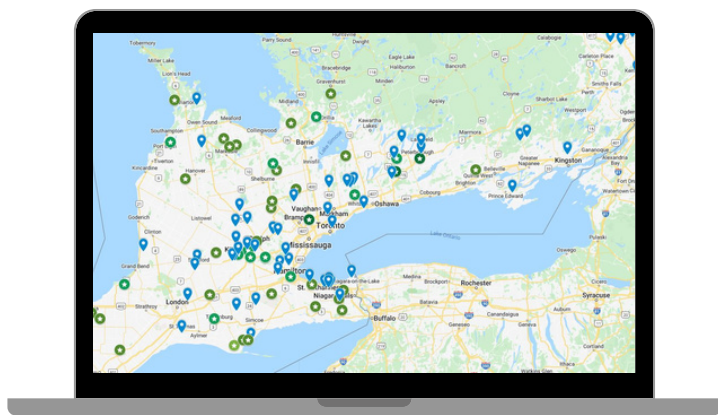
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LILIES (CONT'D)

The easiest control is to be vigilant—and it's not that big a commitment. Early in the spring, when the ground first warms up, you'll find the over-wintering adults emerge from the soil and leaf litter. Since they're bright red, they are easy to spot and you'll find them on or near emerging lily shoots as well as on Fritillaria. I hunt them in the morning and crush them by hand, but you can also drown them in a pail of soapy water. By late spring any that survive are already laying eggs which are also bright orange and can be found on the underside of the lily leaves. Dispatch them as you see fit, as you did the adults.

Any you miss will hatch and become larvae which are also easy to spot and get rid of—though slightly more revolting—if you know what you are looking for. Any larvae that survive will burrow underground and pupate, emerging in fall to feed before returning to the soil to hibernate and emerging in spring to start all over. There are many chances throughout the growing season to catch and kill them, and trust me, even a lazy gardener can easily control them if you are consistent. ✿

MAP OF NURSERIES IN ONTARIO



Visit our [Halton Master Gardeners website](#) to find a map of nurseries across Ontario:

- Nurseries that specialize in native plants are identified with a star ★
- Other independent nurseries are identified with a 'pin' 📍

AVOID 'CAT'ASTROPHES



Photo: Gardening Humour FB

Many cold weather crops like lettuce & kale can be started now in containers if the soil isn't workable. Follow package directions for plant spacing. Sorry, we couldn't find any info on how to space puppies!



GARDEN ACTIVISM — ARE YOU AT RISK?

By Bev Wagar, Halton Master Gardener

Does your love of gardening come with strong opinions, ideas that sometimes bolt from the brain and barge headlong into the world? When thoughts and convictions grow mouths and legs, do be wary—it could be a case of gardening activism!

There is no cure but, with care, activism is a manageable condition. In fact, most activists lead healthy, productive, and meaningful lives.

Even if you're not showing symptoms, take this handy quiz to see where you're at on the activist spectrum. Don't be surprised if you need to sit down with a cup of tea or a knitting basket. Or you may need to make a call, send a few emails, rattle some chains...



- ☐ You talk a lot about why we should not be doing the things we used to do.
- ☐ You're always telling people where they can get native plants.
- ☐ You can't go for a walk with friends without providing fascinating educational commentary on wayside plants.
- ☐ You explain Ecozones when someone asks about climate zones.
- ☐ You tell wildly hilarious jokes about "blue dawn."
- ☐ You read and recommend gardening books with "[revolution](#)", "[manifesto](#)" or "[defiant](#)" in the title.



Did you plant these? At midnight?

- ☐ You've guerrilla gardened an abandoned planter, a back alley, a boulevard, a hellstrip, a crack in the sidewalk.
- ☐ You've participated in a garden rescue.
- ☐ You get cranky when gardeners express love for their ditch lilies, vinca, goutweed, and lily of the valley. Rose of Sharon too, sometimes.
- ☐ You grow plants because everyone needs more great plants and everyone loves to find plants on their doorstep.
- ☐ You've quit a Facebook group because members keep gushing over "certain" plants.
- ☐ You argue with city gardening staff about how they should "get out of the 1800s".
- ☐ You're constantly doing imaginary makeovers on other people's gardens, replacing all the exotics and invasives with "better" plants.
- ☐ Your front yard is turfgrass free. Give yourself a bonus point if you have a sign explaining why it looks that way.
- ☐ You handle a lot of seeds. You save, trade, give away, and mail them to strangers.

What's your score?

What's your score? Are you an activist?

- 11 to 15:** Hey Che, you're a garden activist!
- 7 to 10:** You've tried it and liked it...
- 6 to 9:** You're in the activist ecoregion but not the activist zone
- 0 to 5:** You're not an activist. But watch out—no one is fully immune!

SPRING FLOWERING NATIVE PLANTS FOR YOUR GARDEN

by Claudette Sims, Halton Master Gardener

My garden is alive with plants in the spring. Luscious red tulips, golden daffodils, brightly coloured crocus and blue Siberian Squill make for an impressive display. While they are beautiful, all of these plants come from other countries and many are of little value to our native insects or birds. Sadly, some like [Siberian Squill](#) which originates from Russia are now on the invasive plant list and I'm spending more time 'ungardening', e.g. trying to remove it and less time enjoying my garden. By choosing to plant exotic species, we are losing our botanical heritage.

So I'm now adding plants that reflect our relationship to the land. [Wild ginger](#) is a great groundcover alternative. [Canada mayflower](#) our native 'lily-of-the-valley' replaces the invasive European variety. There are five varieties of trillium, our provincial flower, that are native to Ontario. I've added two so far. Native violets are host plants for several [frittillary butterflies](#), so by planting them, you actually grow flowers AND butterflies.

[Wood poppies](#) are just as showy as daffodils, without the hassle of dealing with dying foliage for a month. I look forward to seeing the lovely white flowers of bloodroot, the vivid red of [wild columbine](#) and the calming blues of [woodland phlox](#). My garden is mirroring my pride in living in an area rich in botanical treasures. ❀



Infographic by Justin Lewis



Photo: Anastasia Lozen FB

Did you know that Master Gardeners of Ontario [proposed bunchberry](#), a lovely native groundcover as our national flower? Sadly, it was not endorsed by parliament.

QUESTION OF THE MONTH

By Claudette Sims, Halton Master Gardener

I was hoping someone can identify the bush these beautiful cedar waxwings are in. Photo was taken yesterday in Caledonia.

Master Gardeners of Ontario Facebook Group (March 11)



At this time of year, more nutritious native berries may all have been eaten, leaving only the berries of this invasive species. Or there may be no native plants at all in an entire neighbourhood, leaving birds with few food options. So while birds do eat the berries, this shrub should never be planted in gardens. Luckily, there are lots of excellent native plants whose berries are healthier for birds. Here are some great choices for your garden:



Poster by Justin Lewis

The oval to round berries (rose hips) in clusters and the presence of thorns identifies this shrub as multiflora rose (*Rosa multiflora*), an "unwanted" invasive plant. "Each hip typically contains 5 to 11 seeds, but may contain more. A single plant can produce 500,000 seeds or more per year. Seeds can remain viable in soil for 10 to 20 years." ❀

Take a Closer Look!

[Multiflora Rose \(*Rosa multiflora*\)](#)

[Native Plant Alternatives to Multiflora Rose](#)



What's Growing On?



Royal Botanical Gardens

- Tropical rainforest [special event](#) is on until May 1st
- [Oaks and Acorns Play Sessions](#) Early Years Program
- [Hikes](#), virtual events and so much more.
- There's something for everyone at [RBG](#)

Answering your Gardening Questions!

We're still answering your garden questions!

Send us an [email](#). It's what we do best!

- Do you have a passion for gardening and sharing your knowledge? Learn more about [joining us](#).
- Interested in attending a meeting?
- Contact us at [Halton Master Gardeners](#)

Arbour Day in Ontario is April 29

Plant a Native Tree!

How about a maple, beechnut, oak or cherry tree?

Year of the Garden
Année du jardin

2022



[Virtual presentation](#) with Mark Cullen

[Visit the Arboretum in Guelph](#)



[Earth Day Activities](#)
in Halton Region



Check our [Calendar of Events!](#)

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 our 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.

Your [donations](#) support our work!

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