

CROSS POLLINATION

Halton Master Gardeners Monthly Newsletter
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Halton Region
Master Gardeners



Bloodroot, *Sanguinaria canadensis*

By Janet Mackey - Halton Master Gardener

What a delight in early spring to see the brilliant white blooms of bloodroot (*Sanguinaria canadensis*). They emerge from under a thick layer of fallen leaves and often, even some old crusted snow. I don't quite notice them from the window. It usually takes a walk along the path to see the unique clasping leaves. Growing in clumps, each flower stem is wrapped up with a leaf. The flower will rise a further 15 cm (6") above the leaf, fully open, and disappear once pollinated. The pale-green leaf doesn't fully open until after pollination. Once expanded to their full-size (20 cm/9" across, and 30cm/12" in height) the thick leaves gather energy through photosynthesis. Some may fade from their location during the heat of summer, while others may persist.

As a member of the poppy (Papaveraceae) family and also as a spring ephemeral, flowers on bloodroot only last a few days, closing at night and on cloudy days to protect the pollen for a time when insects are more active. They are a welcome sight to bees and flies that can withstand cooler spring weather. While not containing any nectar, the pollen is extremely valuable to the visitors who both consume and feed it to their larvae. An unusual feature of this flower is that the stamen will bend away from the pistil to make the stigma accessible to insects. If no insects visit, the stamen will then bend towards the pistil to self-pollinate. Amazing!

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PLANT FEATURE



A bee visiting bloodroot. Image: [Saltwire](#)

Pollinated flowers develop a fruit capsule under the leaves. When it's ripe, it splits open allowing the seeds to disperse. Attached to the seeds are packets of [elaiosome](#), a favourite food of ants. They bring seeds to their nests, eat the elaiosome and feed it to their larvae, and dispose of the seeds in a nutrient-rich midden where they germinate.



Ants disperse the seeds of bloodroot after consuming the [elaiosome](#). Image: [Great Hollow Nature Preserve](#)

The Indigenous peoples in our region have historically used bloodroot for a variety of purposes. These included the use of the red sap as a dye and parts of the plant for medicinal purposes. It should be noted that the rhizome (thick, underground roots) are considered poisonous and, if ingested, can be fatal. (see: Bloodroot, [Wildflower.org](#))



(L - R) The large lobed leaves of bloodroot, a seedpod, fruit capsule, and seeds containing elaiosome. Image: [Univ. of Wisconsin Hort.](#)

Will bloodroot fit in your garden? It depends, of course, on the available light, the type of soil, and the moisture level. Moist to mesic conditions and a cover of deciduous trees are ideal. So is humus-rich soil with plenty of leaf litter. Increasing readily by seed or by division, bloodroot makes an excellent groundcover. The rhizomes can be divided in spring or fall.

Finally, while bloodroot is still plentiful in natural spaces, be sure to source plants from a reputable supplier. Check the nurseries from this list on the [Halton Master Gardeners website](#). ❀

Read More:

- Bloodroot, [The Natural Web](#)
- Bloodroot, *Sanguinaria canadensis*, [Wisconsin Hort.](#)
- Ants in My Plants, [Roads End Naturalist](#)




MARCH 'TO-DO' LIST

by Claudette Sims, Halton Master Gardener

- General Pruning** – March is a good time to prune, repair winter damage & check for disease such as Black Knot Fungus. Always use clean, sharp tools. Remove dead, damaged, diseased wood. Cut back branches to just above another branch or a bud. Do NOT prune spring flowering shrubs until after they bloom. Detailed pruning information [here](#).
- Pruning with Wildlife in Mind** – Use the '[chop & drop](#)' 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 '[snags](#)' in place as long as it is safe to do so.
- Overgrown Shrubs** – Use [rejuvenation or renewal pruning](#) to restore scraggly or overgrown shrubs. Which shrubs can you renew or rejuvenate? Here's [a list!](#)
- 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. Detailed [hydrangea info here!](#)
- 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. More info on our [clematis factsheet](#).
- Fruit Trees** – [Prune](#) apple, cherry, plum, pear before flower buds swell. Remove any dead, diseased twigs and prune for open shape. Pear trees generally don't require pruning, except for shaping.
- Raspberries** – 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. Detailed [info here](#).

Try this March break activity with your family or just for yourself. Create a nature mandala with help from the [RBG](#).



Look for more nature mandala ideas on [Pinterest](#).

- Blueberries** – Early March, prune out dead, damaged, diseased wood to an open shape to increase air circulation. [More info here](#) about blueberries.
- Houseplants** – Increase water and feeding as plants start actively growing.
- Amaryllis** - After the flowers have faded, cut the flower stalk to within 1" of the top of the bulb. Give plants a maximum of sun and feed 'weekly, weakly' to produce a large healthy bulb & flowers for next year.
- Start** onions, garlic, yellow onions when the soil can be worked. Separate cloves just before planting and plant about 2" below soil.
- Order Plants** – Check our map on nurseries in Ontario for ideas. Nurseries specializing in native plants are marked with green stars.
- Learn New Skills** – Watch this [RBG webinar](#) to find out how to **Manage Rain Where it Falls:** Webinar.
- Plan your 2023 Garden!** [Learn how on page 4!](#)

PLANNING YOUR 2023 GARDEN

by Claudette Sims, Halton Master Gardener

Spring is a season of renewal and the ideal time to rethink your garden. Are there disappointing areas where plants are just not thriving? Are there invasive plants that need to be removed and replaced? Are you rethinking your relationship with nature and dreaming of a garden that supports wildlife as well as people? Here are some ideas on how to effect change that will transform your garden into the haven of your dreams.

Start With Smart Plant Choices

Make “the right plant for the right place” your new mantra. It has taken me a long time to realize that going to the nursery and buying plants based on what catches my eye does not always end well. Despite adding amendments, the rhododendrons I planted in my clay soil have never thrived and I’ve been left with sad, sulking shrubs. Changing garden conditions to suit individual plants is like trying to house a goldfish in a gerbil cage—it just doesn’t make sense. There are plenty of great plants that will happily grow in clay/sand, moist/dry or sun/shade conditions, so why complicate things?

Where possible, find plants grown and available in your area. Check our [map of Ontario nurseries](#) for vendors. Native plant nurseries appear first and are starred.

Choose plants that match your sun, soil and moisture conditions. [In Our Nature](#) has an extensive list of plants for specific conditions, e.g. [clay](#), [shade](#), [wet](#) areas. [Ontario Native Plants](#) has a filter that allows you to choose plants that match your light, moisture and soil type. They also have an [online catalogue](#) of wildflowers, trees and shrubs and giving specific growing condition information. Heather Holm has [excellent posters](#) for similar conditions.

Check the growing zone information of plants. Hamilton and Burlington are in Zone 6a/b. Plant tags may have U.S. zone information, so to be safe, choose plants that are hardier than your zone, e.g., zone 5 or 4 or lower. Don’t know your growing zone? You can find it [here](#).



Heather Holm has suggestions for loam, [clay](#), [moist](#) and [sand](#) conditions.

Say NO to Invasive Plants

There is increasing proof of the harm that non-native invasive plants cause to biodiversity, the economy, and even human health, e.g., [Japanese barberry](#) is known to harbour ticks that spread Lyme disease. Spring is an ideal time to check for invasive plants as they are often green long before native plants have emerged. Be aware that nurseries are still allowed to sell invasive plants, so if you’re not sure which plants are invasive, check the [Credit Valley Conservation Authority Priority Invasive Plants](#) list before buying. Focus on removing Category 1 and 2 plants first as these have the most potential for harm. Check the [Best Management Practices](#) of the Ontario Invasive Plant Council for suggestions on how to remove invasive plants. As soon as an area has been cleared of invasive plants, fill it with non-invasive plants to prevent further invasion.

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2023 GARDEN (CON'T)

Choose Native Plants

When choosing new plants, consider native plants first. If you're concerned that a native plant garden will look weedy, think again. Garden design is a function of the design, not the plants, and native plant gardens can be formal if that's the look you prefer.

[In Our Nature](#) has a great downloadable resource called "Choosing the Right Native Plants for Your Yard". Note: They do request your contact information.

Keystone plants support a larger number of native species and make great sense to include. [Top Keystone Plant Genera in Eastern Temperate Forests - Ecoregion 8](#) includes trees, shrubs and top pollinator, butterfly and moth host plants. For those who are very serious about planting historically native plants from our area, this is the list for reference: [Oldham's List of the Vascular Plants of Ontario's Carolinian Zone](#) (Ecoregion 7E)

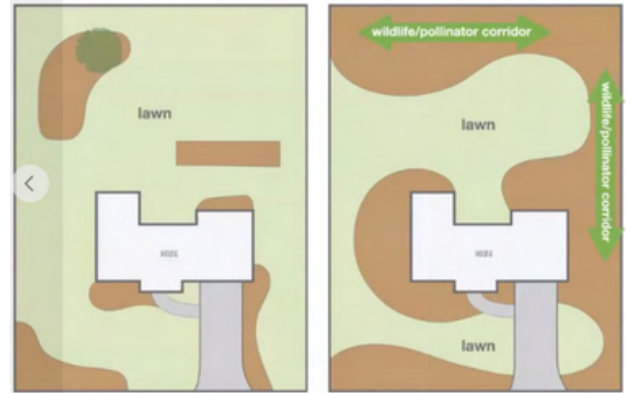
ONPLANTS.CA		2 0 2 3 PERENNIAL CATALOG										office@onplants.ca			
Scientific Name	Common Name	Height	Fl. Time	Fl. Color	Fl. Shape	Fl. Size	LIGHT			MOISTURE			SOIL TEXTURE		
							Shade	P. Shade	Sun	Wet	Dry	Wetland	Wetland	Wetland	Wetland
WILDFLOWERS															
<i>Agastache foeniculum</i>	Anise Hyssop	4 to 7	3.0	2.0	fringe		X	X	X	X	X	X	X	X	X
<i>Allium ornatum</i>	Nodding Onion	2 to 7	1.5	1.0	fringe		X	X	X	X	X	X	X	X	X
<i>Anaphalis margaritacea</i>	Pearly Everlasting	2 to 7	2.0	2.0	fringe		X	X	X	X	X	X	X	X	X
<i>Anemone canadensis</i>	Canada Anemone	3 to 7	1.0	3.0	fringe		X	X	X	X	X	X	X	X	X
<i>Aquilegia canadensis</i>	Wild Columbine	3 to 7	2.0	1.0	woodland		X	X	X	X	X	X	X	X	X
<i>Asarum canadense</i>	Wild Ginger (Pre-1900)	3 to 7	0.5	1.0	fringe	X				X	X	X	X	X	X
<i>Asclepias incarnata</i>	Swooping Milkweed	3 to 7	4.0	3.0	wet areas		X	X	X	X	X	X	X	X	X
<i>Asclepias speciosa</i>	Common Milkweed	3 to 7	3.0	2.0	fringe		X	X	X	X	X	X	X	X	X
<i>Asclepias tuberosa</i>	Butterfly Milkweed	3 to 7	2.0	2.0	fringe		X	X	X	X	X	X	X	X	X
<i>Baptisia australis</i>	Blue Wild Indigo	4 to 7	4.0	4.0	fringe		X	X	X	X	X	X	X	X	X
<i>Caltha palustris</i>	Marsh Marigold	3 to 7	1.0	1.0	wetland		X	X	X	X	X	X	X	X	X
<i>Campanula rotundifolia</i>	Heartbell	3 to 7	1.0	1.0	fringe	X	X	X	X	X	X	X	X	X	X
<i>Chelone glabra</i>	White Turtlehead	3 to 7	3.0	2.0	woodland		X	X	X	X	X	X	X	X	X
<i>Chimaphila arifolia</i>	White	4 to 7	0.5	1.0	fringe		X	X	X	X	X	X	X	X	X
<i>Corynephorus lanceolatus</i>	Lanceleaf coneflower	4 to 7	1.5	2.0	fringe		X	X	X	X	X	X	X	X	X
<i>Echinacea purpurea</i>	Purple Coneflower	4 to 7	4.0	1.0	fringe		X	X	X	X	X	X	X	X	X
<i>Equisetum maculatum</i>	Spoiled Joe-Pye	3 to 7	7.0	3.0	wetland		X	X	X	X	X	X	X	X	X
<i>Erythraea macrophylla</i>	Large leaved Aster	3 to 8	4.0	3.0	woodland	X	X	X	X	X	X	X	X	X	X
<i>Fragaria vesca</i>	Woodland Strawberry	5 to 7	0.5	1.0	woodland		X	X	X	X	X	X	X	X	X
<i>Fragaria virginiana</i>	Wild Strawberry	5 to 7	0.5	1.0	woodland		X	X	X	X	X	X	X	X	X
<i>Geranium maculatum</i>	Wild Geranium	3 to 7	1.0	1.0	woodland	X	X	X	X	X	X	X	X	X	X
<i>Geum rivale</i>	Water Avens	3 to 7	2.0	1.0	wet areas		X	X	X	X	X	X	X	X	X
<i>Geum triflorum</i>	Prairie Smoke	3 to 7	0.5	1.0	fringe		X	X	X	X	X	X	X	X	X
<i>Gentiana andrewsii</i>	Bottle Gentian	3 to 7	2.0	1.0	woodland		X	X	X	X	X	X	X	X	X

Wildflowers for various garden conditions from Ontario Native Plants

Planning Your Garden for Biodiversity

How you design and maintain your garden can make a huge difference. I used to talk about pollinator gardens, but now my emphasis has changed to biodiverse plantings that support pollinators as well as beneficial insects, birds and animals—which in turn supports humans as well. We are all part of nature.

Create a Cohesive Design or Master Plan



Planting Areas Without Connected Purpose

Planting Areas That Define Space

Connected gardens help wildlife. (brown areas are gardens) Heather Holm - [Creating and Managing Habitat for Native Bees](#)

Include as many **different species** and types of plants as possible to support the maximum numbers of wildlife species. **Planting in masses** makes it easier for bees to find their favourite plants and also looks more intentional. Design your garden so that the **beds are connected**, rather than broken up. This helps wildlife navigate our fragmented ecosystems. **Reduce your lawn** by adding new garden beds using native plants. Add native plants in hard to manage areas such as slopes, wet or dry areas. Add "[soft landings](#)", shrubs and plants under the dripline of trees. This is critical for many caterpillars to complete their life cycle. Soft landings also allow you to "leave the leaves" and provide habitat for insects that overwinter on leaves and litter. Use plants to create a "green" mulch. Spend less on mulching and more on plants!



Soft landings provide critical shelter and habitat ([Heather Holm](#))

2023 GARDEN (CONT'D)

Wildflowers

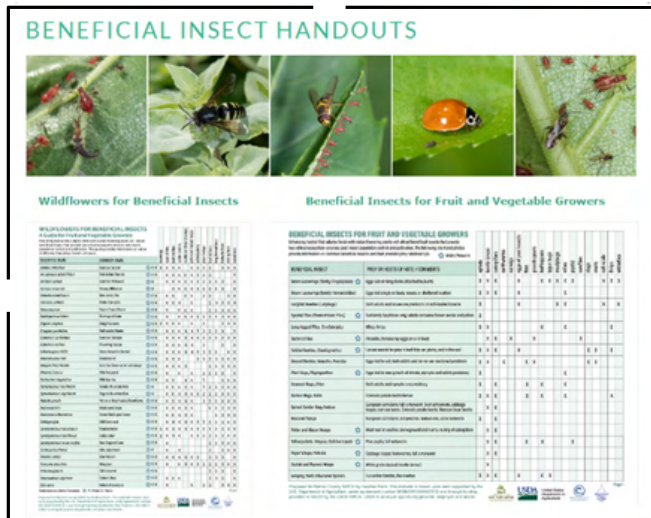
Wildflowers provide essential **pollen** and **nectar** resources for insects. In return, insects provide important pollination services for most plants, including many grown for food. Since most “bugs” eat other bugs, insects provide invaluable services controlling other insects. More insects also means more birds. Insects are the “little things that run the world” and are essential to our well being.

Pollen and sugar properties vary from one flower to another but native flowers provide the best options for our native insects and bees. **Pollen** is the more important floral resource and is essential for female bees to produce eggs and for bee health and disease resistance. **Nectar** is fuel (carbs) for bees and other insects and provides sugars, minerals, amino acids and secondary metabolites. Heather Holm has numerous posters of wildflowers that support pollinators.

berries, nuts, and seeds. Many shrubs and trees are the larval hosts to gorgeous butterflies and moths that are essential food sources for the young of native birds. 🌸

Learn Even More!

- [Recommended Native Trees and Shrubs](#)
- [Recommended Native Wildflowers and Grasses](#)
- [Butterfly Larvae Host Food Plants](#)
- [Bee Sweet Nature Company larval host trees and shrubs](#)
- Heather Holm video - [Creating and Managing Habitat for Native Bees](#)

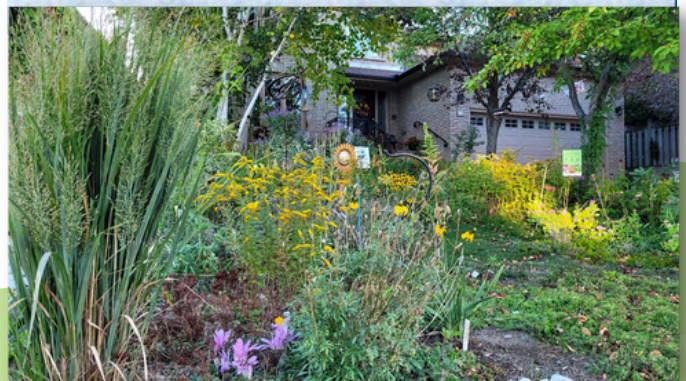


Beneficial Insects keep your garden healthy by reducing plant pests. (Heather Holm)

Beauty Isn't Petal Deep

Your garden is a protest. It is a place of defiant compassion. It is a space to help sustain wildlife and ecosystem function while providing an aesthetic response that moves you. For you, beauty isn't just petal-deep but goes down into the soil, farther down into the aquifer and back up into the air and for miles around on the backs and legs of insects. You don't have to see microbes in action, birds eating seeds, butterflies laying eggs, ants farming aphids. Your garden is a protest for all the ways in which we deny our life by denying other lives. Plant some natives. Be defiantly compassionate.

Benjamin Vogt
A New Garden Ethic: Cultivating Defiant Compassion for an Uncertain Future



Trees and Shrubs

Trees and shrubs are the foundation of a well-designed garden and can add interest all year long. Because of their size, trees and shrubs provide more generous nectar and pollen resources but also offer habitat as well as food in the form of

SEED GERMINATION AND SOIL TEMPERATURE

By Bev Wagar, Halton Master Gardener

Are you planning to start plants from seed this spring? Whether you're sowing seeds indoors under lights or outdoors directly into the garden, knowing the germination requirements for each species (and they're all different) will lead to better germination rates and more efficient use of limited space on shelves and garden beds.

For commercial seeds, germination information is printed on the seed packet. For seeds saved from home gardens, there are good online resources (see sidebar on next page) that list the number of weeks in advance of the average date of last frost for your region, as well as how deep to sow the seed.

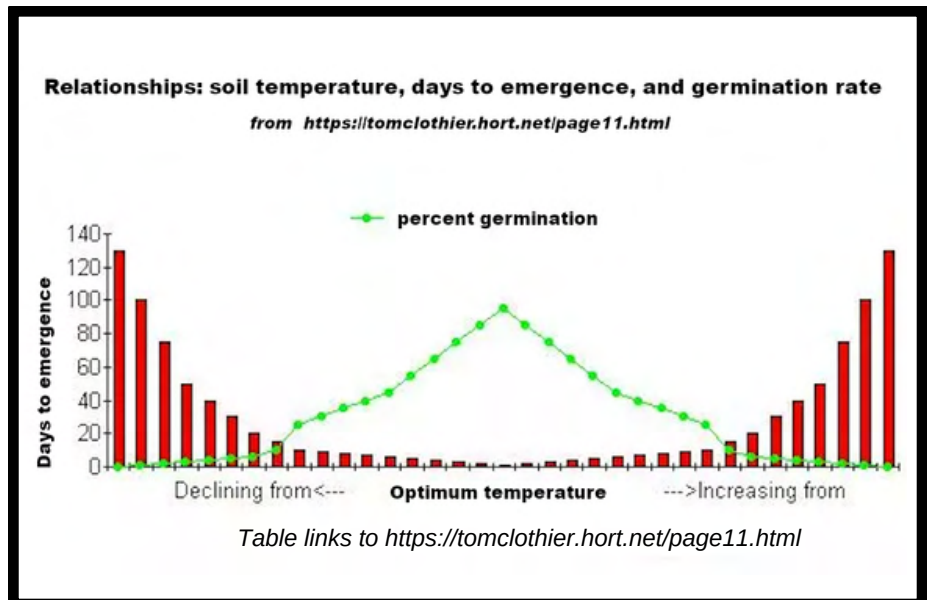
In addition to depth and timing, germination information will usually include an optimum temperature. For example, Hawthorn Farm Organic Seeds web site states: "Start peppers indoors 8 weeks before your frost free date. Sow seeds .5 cm deep and keep warm (27 - 32°C)." Is this a reference to a cozy house with a good furnace? No—these are *soil* temperatures.

It's the soil temperature that matters

Whether we're starting seeds indoors or outdoors, the ambient air temperature does not correspond closely to that of the soil. Soil temperature is more stable than air—it takes longer to heat up and cool down—and at night it can warm the surrounding air. The presence of moisture, in both the air and the soil, will affect their relative temperatures as well. For more detail on soil-air interactions, read and bookmark Penn State Extension's article "Soil Temperature and Seed Germination." It's an excellent, plain-language overview of these concepts.

Optimum germination temperature

Each species has an optimum soil temperature at which the most seeds will germinate in the least time. As the temperature moves away from this optimum, two things happen: the percentage of seeds to germinate decreases and the length of time to germination increases. Germination rates can be plotted on a graph, as follows.



Let's look at the specific temperatures and times for some common vegetables. The following table is also from <https://tomclothier.hort.net/page11.html>. Despite the uncertainty around the data (his work is widely respected and quoted but Clothier does not list his sources), the graph is useful to illustrate the relationship between soil temperature and germination rates. The numbers in parentheses are the days to seedling emergence; the number in red is the optimal daytime soil temperature.

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SEED GERMINATION AND SOIL TEMPERATURE (CONT'D)

Percentage of Seedlings Produced at Different Temperatures

Crops	32°F	41°F	50°F	59°F	68°F	77°F	86°F	95°F	104°F
Asparagus	0	0	61(53)	80(24)	88(15)	95(10)	79(12)	37(19)	0
Beans, lima	0	0	1	52(31)	82(18)	90(7)	88(7)	2	0
Beans, snap	0	0	1	97(16)	90(11)	97(8)	47(6)	39(6)	0
Beets	0	53(42)	72(17)	88(10)	90(6)	97(5)	89(5)	35(5)	0
Cabbage	0	27	78(15)	93(9)	0(6)	99(5)	0(4)	0	0
Carrots	0	48(51)	93(17)	95(10)	96(7)	96(6)	95(6)	74(9)	0
Cauliflower	0	0	58(20)	60(10)	0(6)	63(5)	45(5)	0	0
Celery	0	72(41)	70(16)	40(12)	97(7)	65	0	0	0
Cucumber	0	0	0	95(13)	99(6)	99(4)	99(3)	99(3)	49
Eggplant	0	0	0	0	21(13)	53(8)	60(5)	0	0
Lettuce	98(49)	98(15)	98(7)	99(4)	99(3)	99(2)	12(3)	0	0
Muskmelon	0	0	0	0	38(8)	94(4)	90(3)	0	0
Okra	0	0	0	74(27)	89(17)	92(13)	88(7)	85(6)	35(7)
Onions	90(136)	98(31)	98(13)	98(7)	99(5)	97(4)	91(4)	73(13)	2
Parsley	0	0	63(29)	0(17)	69(14)	64(13)	50(12)	0	0
Parsnips	82(172)	87(57)	79(27)	85(19)	89(14)	77(15)	51(32)	1	0
Peas	0	89(36)	94(14)	93(9)	93(8)	94(6)	86(6)	0	0
Peppers	0	0	1	70(25)	96(13)	98(8)	95(8)	70(9)	0
Radish	0	42(29)	76(11)	97(6)	95(4)	97(4)	95(3)	0	0
Spinach	83(63)	96(23)	91(12)	82(7)	52(6)	28(5)	32(6)	0	0
Sweet Corn	0	0	47(22)	97(12)	97(7)	98(4)	91(4)	88(3)	10
Tomatoes	0	0	82(43)	98(14)	98(8)	97(6)	83(6)	46(9)	0
Turnips	1	14	79(5)	98(3)	99(2)	100(1)	99(1)	99(1)	88(3)
Watermelon	0	0	0	17	94(12)	90(5)	92(4)	96(3)	0

Numbers in () are the days to seedling emergence. Number in red = optimal daytime soil temperature for maximum production in the shortest time.

Note the high germination rates regardless of temperature for certain species. Onion, parsnip, and spinach, for example, will germinate at near-zero temperatures—but they’ll take a long time to do it.

At 0C / 32F lettuce has a 98% germination rate—if you can wait 49 days.

Conversely, tomatoes won’t germinate at all if the temperature is less than 10C / 50F. And peppers, no matter how long you wait, will not pop up until 15C / 59F. Both tomatoes and peppers have an optimum germination temperature of 25C / 77F. And watermelon’s optimal temperature is a sweltering 35C / 95F!

Here are some additional online resources:

Melissa J. Will (a.k.a. ‘the Empress of Dirt’) has a comprehensive temperature chart in her article "[Best Soil Temperatures for Sowing Vegetable Seeds](#)". For each of 57 types of vegetable, Melissa researched the sites of professional grower’s associations as well as academic papers to determine the optimal soil temperature.

The US extension services publish lists that are nearly identical. [Alabama University’s extension](#) includes the minimum, optimum, and maximum temperatures, as well as the optimum range, for 27 garden vegetables. The [one from Oregon State](#) includes a useful comparison of germination rates at various seeding depths. Once a reliable resource for Ontario vegetable growers, OMAFRA’s *Online Gardener’s Handbook 2010* is no longer available.

Googling for seed germination information?

limit your search results to reliable educational sites by adding “site:.edu” or “site:.org” at the end of your search terms.

Example: *germination requirements corn seed site:.edu*

SEED GERMINATION AND SOIL TEMPERATURE (CONT'D)

Measuring soil temperature

Soil thermometers are available from many garden supply retailers. But it's possible to use an ordinary meat thermometer as well. Any digital type with a long enough metal probe and a low enough range should work well. Some digital thermometers are accurate to within one degree celsius between -20C and 120C. You can test yours by taking the temperature of something in your refrigerator or freezer.



*A digital meat thermometer can measure soil temperature
Image: Bev Wagar CC BY-NC*

Outdoors, take temperature readings on three consecutive days at the same time, usually at mid-morning. Insert the probe to a depth of two inches for seeds or four to six inches for transplants. Many experts advise growers to wait until nighttime temperatures are consistently above 10C before testing soil temperatures in the daytime.

For indoor seed-starting setups, take the temperature of your seed starting mix. Fill the plugs or cells with moistened mix, tamp it lightly to settle any large air pockets and, if you're using a humidity dome or clear cover, put it on. Turn on your heat mat and lights (if you're using them), set the tray in the intended spot, and wait for several hours before taking the temperature. Wait for an hour and repeat until the temperature reading is consistent. If you're scientifically inclined you can compare the daytime and evening temperatures as well. When you're happy with the temperature range go ahead and sow.

Too hot? Too cold?

If your heat mat does not have an adjustable thermostat and your soil mix becomes too hot for the intended seeds, the easiest solution is to raise the seed tray off the mat. Try placing a cookie rack between the heat mat the tray—the air gap will reduce the upward movement of heat.

Here are some more ideas:

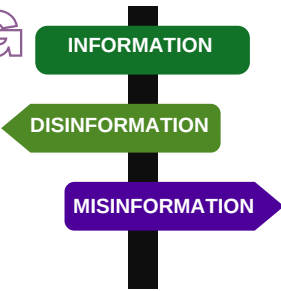
- put a clear clear plastic dome or cover over the tray, if you haven't already done so
- place a thin layer of rockwool or other fireproof insulation under the tray
- lay 12" ceramic floor tiles under the tray
- suspend the heat mat *under* the shelf so the heat must rise through the shelf slats or rack lattice
- run a fan (but ensure it doesn't dry out the surface of your soil mix)

Raising or lowering the lights will affect soil temperature. Modern LED systems do not generate a lot of heat, but you may find it will make a difference to have the lights closer to the trays.

If you want to start seeds indoors and a heat mat is unavailable, remember that commercial heat mats have thermostatic controls to prevent overheating and eliminate the risk of fire. Even the very inexpensive ones have this safety feature. If you decide to try a DIY method to generate bottom heat, please put safety first.

If you cannot find a practical (or safe) way to keep your soil temperature within the desired range, just accept the fact that germination at room temperature will take longer and the germination rate will decrease. So long as your soil temperature is above the minimum for any germination, you can just wait longer and expect fewer. You may want to start earlier and sow a lot more seeds than you need. ❀

GARDENING
 Myths



UNDERSTANDING FACT FROM FICTION

by Kirsten McCarthy, Halton Master Gardener

Myth: Adding Sand to Clay Soil will help drainage

Many people in Southwestern Ontario struggle to plant in a garden of clay soil. Although clay is very nutrient rich, it isn't the most well-draining soil and is often very difficult to work with, especially during a drought when it turns rock hard. It is common to want to "fix the problem" by adding sand to the soil in the hopes of making it more "well-draining" and easier to work with.



The danger of adding sand is that large sand particles mixed with tiny clay particles will result in a concrete-like mixture. It takes the addition of 50% of total soil volume to significantly change the texture of clay soils. That means adding a truckload

of sand to a small garden patch to change soil texture and using a fairly aggressive means to mix it together thoroughly. The problem with clay soil is not the texture, but the lack of aggregate structure. Adding sand will not fix this.

Clay Soils are Forever

Like diamonds, clay soils are highly structured at the atomic level. No amount of sand added to a clay soil will change its texture. The large sand particles provide a surface onto which the tiny clay particles adhere. The result can be more difficult to manage than the original clay.

[Linda Brewer, Senior Faculty Research assistant in Oregon State University's College of Agricultural Sciences.](#)

Instead, use organic matter, such as compost, to loosen heavy soils; it is light in composition and also improves nutrient quality. Also, use mulch to improve the aggregate structure of clay soil and protect it from compaction. Even walking the same path down your garden can injure your soil. No need to dig it in—just lay mulch on top of the soil. Give it time and you won't believe the difference! An undisturbed four-inch layer of arborist wood chips can turn a hard clay soil into a surprisingly workable soil in just a few years.

More Information:

- [Like Diamonds, Clay Soils are Forever - Oregon State Univ.](#)
- [Managing Clay Soils in The Home Garden - Univ. of California](#)



By Hariette Henry, Halton Master Gardener

Dear Durham region: Thank you for your question. It is encouraging to know that educators in Canada and in the Province of Ontario are making efforts to include Indigenous knowledge, history and experience (past and present) into the school curriculum. You mention that you are looking for a recommendation for native species of plants that have traditional medicinal properties. Unfortunately, it is not within our purview to recommend medicinal plants of any kind as many of them can cause allergic reactions or can even be toxic. To recommend them would require us to have specific medical training or certification, which we do not have.

In Indigenous cultures medicinal plants have not only practical uses but also social meanings that characterize deep and complex connections with the land as well as the traditions and ceremonies of the original inhabitants. Non-Indigenous people who take part in these traditions should do so with knowledge, respect, and understanding—ideally by consulting Indigenous people themselves. For millennia, plants have been fundamental to the lives of Indigenous peoples—as sources of food, nutrition and medicines—and central to their ceremonial traditions, spiritual beliefs and language. We therefore strongly suggest contacting the Indigenous communities and / or organizations in your area. Durham is home to the Mississaugas of Scugog Island First Nation and the Oshawa and Durham Region Métis Council. Contact information for both organizations can be found in the links below.

There is a public garden within Durham region in the Town of Ajax that you could visit when the weather gets warmer.

“We are working with our school to plant an Indigenous Garden. We are looking for native species that have traditional medicinal properties or uses. Can anyone recommend a resource or species to plant. Durham Region. Thanks!”

The Town of Ajax and Ajax Pickering Hospital worked to bring the “Indigenous Community and Healing Garden” together last year. The garden was created on the grounds of the hospital and provides spaces of relief and recreation for hospital staff, patients, volunteers and community members. It was conceived and designed by Miinikaan Innovation and Design, a consultancy specializing in the creation of Indigenous gardens. Input was sought at every stage of the planning and execution process to ensure that the garden was based on Indigenous history and storytelling. Elder Kim Wheatley, from Shawanaga First Nation, was engaged in 2020 to consult on the importance of Indigenous gardens, traditions and ceremonies. The garden is home to a variety of plant-life purposely selected to reflect Indigenous agroecology (the application of ecological principles to agricultural systems and practices).



*Seven circular beds in the foreground, surrounded by seven raised planter boxes represents everyone having a place in the community.
Photo: Ajax Hospital Foundation*

Continued on next page



The heart of the garden presents a large circle featuring seven circular demonstration beds and seven raised planter boxes which form an arch around the circle. This design honours the Indigenous teaching that everyone has a place in the community. Seven grandfather stones are placed throughout the garden and are a physical representation of the Grandfather Teachings, which serve as a code of conduct to the Indigenous way of life. For a description of the design elements including a plant list see “Additional Information Links” below.

The Three Sisters, a traditional practise of planting corn, beans and squash together, were planted in the circular demonstration beds last year. This planting method has been practised by many Indigenous peoples throughout Turtle Island for centuries. In this agricultural tradition the corn provides support for the beans that scramble up it, the beans fix nitrogen which fertilizes the corn and the squash, and the squash grows along the ground, cooling the soil, preventing moisture loss and preventing weeds from germinating. This is a very sustainable planting method as it contributes to long term fertility of the soil without the use of chemical fertilizers. For more information on The Three Sisters look to the article from our newsletter, Cross Pollination July 2021, in the links below.



*Three Sisters planting plan, taken June 13th, 2022
Photo: Isabel Belanger*



*Three Sisters planting plan, taken July 18th, 2022
Photo: Isabel Belanger*

Finally, Kayanase, a nursery that specializes in Indigenous plants, would be a great resource when you get to the execution stage of the project. They recommend that you send an email to sales@kayanase.ca explaining what you are looking for and they will be happy to help. We hope the ideas and information provided will help you in your efforts to tackle this worthwhile project successfully. ✿

Take a Closer Look!

Additional Information Links

[Indigenous Community and Healing Garden, design plan & plant list.](#)

[Indigenous Community and Healing Garden, Land Acknowledgement.](#)

[The Three Sisters](#), Isabel Belanger, Cross Pollination July 2021.

[Plants, People and Places, The Roles of Ethnobotany and Ethnoecology in Indigenous Peoples' Land Rights in Canada and Beyond.](#)

[Bad vibes: Critics decry the cultural appropriation of Indigenous plant medicines and smudging](#), Capital Current, Carleton University

Local Indigenous Groups

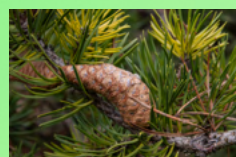
Mississaugas of Scugog Island First Nation.
Oshawa and Durham Region Métis Council.

Indigenous Nursery

Kayanase – 993 Highway #54 P.O. Box 820,
Ohsweken, ON N0A 1M0, 519-751-0568, email:
sales@kayanase.ca

GARDEN INSPIRATION

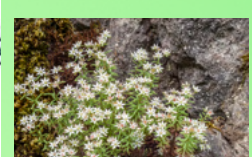
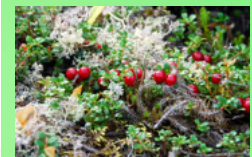
Want more greenery in your winter landscape? Consider planting one of these native evergreen trees or shrubs. Not only are these ten native trees and shrubs beautiful, but they also provide habitat and food for wildlife.



TEN NATIVE TREES, SHRUBS + PERENNIALS FOR WINTER GREENERY



- Christmas Fern (*Polystichum acrostichoides*)
- Eastern Hemlock (*Tsuga canadensis*)
- Eastern Red Cedar (*Juniperus virginiana*)
- Eastern White Pine (*Pinus strobus*)
- Jack Pine (*Pinus banksiana*)
- Northern Bayberry (*Myrica pensylvanica*)
- Partridge Berry (*Mitchella repens*)
- Trumpet Honeysuckle (*Lonicera sempervirens*)
- White Cedar (*Thuja occidentalis*)
- Wild Stonecrop (*Sedum ternatum*)



#homegrownnationalpark #deeplyrootedlandscapes

MULCHITIS AMERICANIS

MULCHITIS AMERICANIS PREVENTS PLANT DIVERSITY



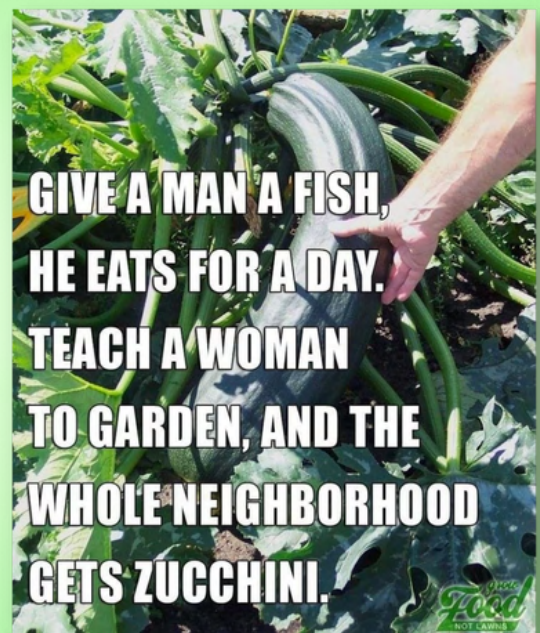
MULCHITIS AMERICANIS CAN BE FATAL TO TREES



Avoid the risk of 'Mulchitis Americanis' by using natural leaf mulch, by planting densely and by using ground covers.



HEALTHY YARDS



Gardening Humour FB

What's Growing On?



Royal Botanical Gardens

Frogs!

A Ribbiting Exhibit

Winter Exhibit



[Landscape for Life](#)



[How to Spot Garden Pests](#)

We're here to answer your gardening 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](#)
- Follow us on [Facebook](#)

SPRING TIDE BULB SHOW

Spring at the Cottage

9 a.m. – 5 p.m. Daily

MARCH 10-19, 2023

Gage Park Greenhouse

9 a.m. – 5 p.m. Daily



Free Parking and Admission
Food Donation appreciated
[Gage Park Greenhouse in Hamilton](#)



Check our [calendar](#) for events



Why do leprechauns love to garden?

They have green thumbs!

Why shouldn't you iron a four-leaf clover?

You don't want to press your luck!

What's Growing On?

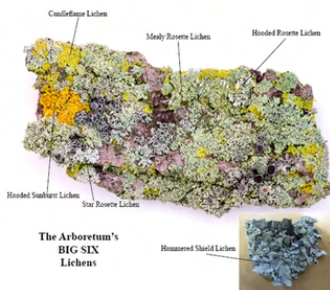
March is Maple Syrup Season!



[Conservation Halton Events](#)

[Bronte Creek Park Festival](#)

[Click here for a listing of festivals in the Greater Toronto Hamilton Area](#)



A new species of lichen has been discovered, and it's only found in the Arboretum!



Learn about [lichen!](#)

Watch this [video](#) about it!

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.

Your [donations](#) support our work!

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