



Toronto Master Gardeners

Toronto Master Gardeners are trained volunteers dedicated to providing horticultural information to the public.

For answers to horticultural questions contact the Toronto Master Gardeners' Info Line at the Toronto Botanical Garden (416) 397-1345 (Mon. to Fri. 10 a.m. to 1 p.m and Sat., Sun. and Holidays noon to 3 p.m.) or our website, www.questions.torontomastergardeners.ca.

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Toronto Botanical Garden

Toronto Botanical Garden is a volunteer-based, charitable organization whose purpose is to inspire passion, respect and understanding of gardening, horticulture, the natural landscape and a healthy environment.

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BROADLEAF EVERGREEN SHRUBS

Description

A broadleaf evergreen holds its leaves year-round and has broad leaves rather than the needles borne on conifers and therefore add year-round interest, structure and foliage to a garden. They all need good soil drainage, ample moisture, especially before freeze-up in the winter, a good layer of mulch around the roots (not touching the stems), and a location that is protected from strong winds. Excessive amounts of snow should be gently swept off evergreens in order to avoid breakage. When choosing a broadleaf evergreen shrub, consideration has to be given to the zone, soil type and location. The following broadleaf evergreen shrubs are all hardy to the Toronto area:

Buxus microphylla – Boxwood.

Zones 5. Height 60 cm. – 1.5 m. Spread 60cm. – 1 m.

These evergreen shrubs, which do not bear showy flowers, can be integrated into shrub border, used as hedging, topiaries, or as an unclipped more relaxed-looking specimen.

Prefers loamy, loose, well-drained soil. Roots are close to the surface and should not be disturbed. Full sun or partial shade

Pests: Psyllid, leaf miner, mites.

Disease: Boxwood blight.

Daphne x burkwoodii – Burkwood Daphne

Zones 4. Height – 1.2 m. Spread – 1 m.

This is a semi-evergreen shrub. The leaves may fall near the end of winter. Pinkish/ white, very fragrant flowers in May so site near a path. D. 'Carol Mackie' has cream-edged leaves.

Requires well-drained soil, high in organic matter, moisture, sun or shade, neutral to acidic soil. They do not like to be pruned or moved.

Fertilize in early spring.

Pests: aphids. Diseases: Root and crown rot.

***Euonymus fortunei* – Euonymus.**

Zone 5. Height 1m. – 1.25 m. Spread 90 cm. – 1.25 m

Small greenish/white flowers in June/July, followed by orange/red seeds.

Use for foliage colour and year-round foliage. Foundation planting of specimen

Prefers moist, loamy soil in sun or shade.

E. 'Emerald Gaiety' - silver edged leaves.

E. 'Emerald 'n' Gold' – dark green leaves with yellow margins.

Pests: Scale

Diseases: Powdery Mildew, Crown Gall.

***Ilex meserveae* – Holly**

Zones 5. Height 3 – 4.5 m. Spread 2.5 – 4 m.

Requires male and female plants to produce berries. A new cultivar I. 'Berri Magic' has male and female plants together.

Requires well-drained, slightly acidic soil, rich in organic matter. Will grown in sun or part shade. For best berry production and compact growth, choose a sunny location. Can be pruned any time during the dormant season. Prune only to shape the plant or remove dead or injured twigs.

Fertilize in early spring with acidic fertilizer.

Pests: Scale, bud moth, red mites, leafminers.

Diseases: Fusarium dieback, tar spot

***Mahonia aquifolium* – Oregon Grape Holly**

Zone 4. Height – 1.2 m. Spread – 1.2 m.

Excellent shade tolerance. Yellow scented flowers in spring. The ½" long grapelike fruit matures in the summer. Leaf tips can brown at winter's end, but new leaves emerge as apple green to bronzy orange and mature to dark green. These plants require moist, acidic, well-drained soil, and a shady environment protected from winter sun and wind.

Use in shrub borders or as a mass planting. Remove unwanted suckers. To renovate neglected shrubs, cut old branches back to ground leaving young ones unpruned.

Fertilize in early spring with acidic fertilizer.

Diseases: leaf spot. Remove affected leaves and destroy.

***Pieris japonica* – Japanese Pieris**

Zone 6. Height 1.2 – 2 m. Spread 1 – 2 m.

Drooping white "lily of the valley" type flowers in spring. For some varieties, the new growth is apple green, bronze and rich red turning to green in maturity.

Moist acidic, well-drained soil, rich in organic matter in partial shade. Protect from winter sun and wind. North or east side of house is ideal. Provide good air circulation. Very slow growing, elegant shape. Little or no pruning is required. After blooming, remove spent flowers.

Pieris japonica 'Mountain Fire' – new growth is intense burning red.

Pieris 'Variegata,' is a smaller selection with foliage edged in white. Good for a shady nook.

Pests: Lacebug

Diseases: Root rot.

Rhododendrons* and *Azaleas

Zones 4. Range in height from 60 cm. to 3.5 m. Spread 1 m. to 2 m.

All bloom in the spring in colours, ranging through, white, pink, purple, lavender, red, yellow. Rhododendrons are either large leaved (elipidote) or small leaved (lepidote).

Plant in a location that will receive no mid-day sun, but ideally where the plant will receive a minimum of 4 –5 hours sun, or bright light over a longer period, in order to set bud. The optimum planting conditions are – a sloping site for good drainage, with wind shelter, year-round shade between 10 and mid-afternoon, or ample bright light from the east in the summer morning.

Plant in acidic soil, rich in organic matter (sulphur pellets, shredded pine bark, shredded oak leaves, dampened peat moss, will acidify the soil). Never plant too deeply. Ensure soil is level with root ball. Rhododendrons are very shallow-rooted, therefore, the soil at their base should not be cultivated. Apply a 2" – 4" layer of mulch around plant so that water runs into plant and not away from it.

Fertilize in early spring and after blooming. Remove spent flowers after blooming by snapping off old flowers with fingers.

PJM Rhododendrons are smaller leaved and more graceful than the larger leaved varieties. This variety is resistant to vine weevils

Pests: Black vine weevils, lace bugs, scale, rhododendron borers, rhododendron whiteflies.

Diseases: Root and Crown rot, dieback, blight.

Disorder: Iron deficiency.

***Viburnum rhytidophyllum* – Leatherleaf viburnum.**

Zone 6. Height 3.5 – 5 m. Width 3.5 – 5 m.

Very large, rounded shrub with coarsely textured leaves, works as screening or background shrub. Creamy flowers in May and followed by red fruit. .

Grows best in shade and should be sheltered from winter sun and wind. Prefers soil full of organic matter, moist and well drained.

Pests: Aphids, scale, Japanese beetles, thrips.

Diseases: Botrytis blight, crown gall, powdery mildew, leaf spot, rust, antracnose.

General Cultivation Requirements:

When planting, dig hole twice as wide as root ball. Ensure roots are not wrapped around root ball, if they are, gently loosen so that they will grow out into the planting hole. Fill hole with water before planting. If soil is heavy amend with sand and organic matter.

Provide ample moisture and drainage. All broadleaf evergreens should be watered deeply before freeze-up to avoid winter dessication.

Keep mulch topped up annually.

Organic Pest Control:

Aphids: Maintain healthy plant growth. Do not over fertilize with nitrogen. Knock aphids off plant with a strong jet of water. Repeat as needed. Control ants that guard aphid colonies by placing sticky bands around stems at the base of the plant. Insecticidal soap may also be used.

Bud Moth: Apply dormant oil before bud break in spring.

Japanese Beetles: When beetle numbers are high in mid-summer, cover smaller or more valuable garden plants with floating row covers or screens. In the morning, handpick or shake beetles from plant onto ground sheet and destroy.

Lace bug: Keep plant healthy. Spray with insecticidal soap or pyrethrins.

Leafminers: Handpick and destroy mined leaves and destroy egg clusters. Attract native parasitic wasps.

Psyllid: Early detection is essential. Spray with insecticidal soap as leaves are expanding.

Red Mites: Apply insecticidal soap. Apply summer oil on plants that can tolerate it.

Rhododendron Borers: Prune out all affected branches and seal the cut with grafting wax to prevent more borers from entering. Best defence against borers is a healthy and vigorous plant.

Rhododendron Whiteflies: Use insecticidal soap, or summer oil on a cloudy day. Test insecticidal soap and oil sprays on a few leaves before applying to the entire plant.

Scale: Apply dormant oil before bud break in spring. Summer oil is effective for plants that will tolerate it. Remove scale with Q-tip dipped in rubbing alcohol. Be vigilant in spotting infestations and treat as early as possible.

Thrips: Native predators attack thrips. Use insecticidal soap.

Vine Weevil: At night, knock weevils off plant and destroy them. Apply solution of insect parasite nematodes (well watered into soil) to control larvae in late spring and early fall. Intercept adult weevils by tying a 6" high band of plastic wrap painted with sticky trap glue around the trunk.

Diseases:

Anthracnose: Clean up garden debris and space plants to increase air movement, keeping leaves dry while watering and avoid working in the garden when plants are wet. Rake up and destroy all infected growth at the first sign of infection. Copper fungicides control these fungi if applied before disease takes hold, but should only be used as a last resort.

Blight (Boxwood): Prune out infected branches back to healthy tissue. Discard all prunings. Disinfect pruning shears after each cut with rubbing alcohol. No fungicide is effective in controlling this disease.

Botrytis Blight: Prevent damage by choosing a planting site with good air circulation. Plant in well-drained soil and keep air circulation high with proper spacing. Remove faded flowers and destroy infected plant parts to reduce spread of disease.

Crown Gall: Large corky galls. Infected plant cannot be cured but will survive for many years. Prune out and destroy affected stems below galled area. Sterilize pruning shears after each cut with rubbing alcohol. Destroy severely infected shrubs. The bacteria will remain in the soil for 2-3 years. Replant only with resistant species such as barberry, boxwood, holly, mountain laurel or elderberry.

Dieback: Usually only a single branch is affected. Reduce stress to plants by planting in partial shade and watering during dry periods. Avoid wounding the plant. Prune infected plant well below dieback. Clean pruning tool between cuts with a mixture of 1 part bleach to 9 parts water.

Fusarium Dieback: Cut out damaged twigs and destroy. Disinfect pruning shears.

Leaf Spot: Rake up and destroy all fallen leaves throughout the season. Will not kill the shrub. To control leaf spot use a copper spray in late spring.

Powdery Mildew: Prune and destroy heavily diseased branches. Remove and destroy fallen leaves. Plant in sunny area and do not overcrowd plants. Avoid overhead watering. Fungicide will protect foliage from infection but will not remove the white fungal growth from the leaves.

Rust: Avoid amendments high in nitrogen and prune, space and water carefully to increase air circulation and keep leaves dry. Pick off and destroy infected leaves. Sulfur spray, used when spots first appear, kills new spores.

Root–Crown Rot: Plant wilts and a portion of the root becomes soggy and pulls away easily. Caused by poor drainage. No cure, therefore avoid purchasing plants that lack normal green colour, appear wilted in the morning, or have dark, discoloured roots. Plant in well-drained and well-aerated soil. Do not set plants any deeper than original soil level.

Tar Spot: Caused by fungus, *Phacidium curtissi*. Remove and destroy badly spotted leaves and prune to improve air circulation and overcrowding. Clean up and destroy fallen leaves.

Disorders:

Iron Deficiency: Leaves are yellow and plant severely loses vigour. Usually caused by soil that is too alkaline. Adjust the pH by sprinkling ¼ cup of elemental sulphur onto the surface of the soil before you mulch each plant. High acidic mulches help cure the problem. In severe cases use iron chelate.

Winter Injury: To prevent winter injury from occurring choose cultivars that are reliably hardy in your zone. Spray evergreens with an antitranspirant to reduce winter water loss from the leaves. In windy areas, create a windbreak with stakes and burlap or wrap susceptible bushes in burlap for the winter. Prune out all injured branches. Water well before freeze up.

References:

- The City of Toronto adopted a new municipal by-law (spring 2009) that restricts the use of pesticides. For details about the by-law visit the Pesticide by-law page on Toronto Public Health's Web site at www.city.toronto.on.ca/pesticides or www.toronto.ca/health. Questions may be e-mailed to pesticide@toronto.ca.
- The Weston Family Library at the Toronto Botanical Garden is an excellent source of information on all aspects of horticulture. The book and periodical catalogue can be accessed from the website: <http://www.torontobotanicalgarden.ca/library/search.htm>

Bibliography:

- Dirr, Michael A. *Dirr's Hardy Trees and Shrubs – An Illustrated Encyclopedia*. Portland, Oregon: Timber Press, 1997.
- *Rodale's Pest and Disease Problem Solver – A Chemical-Free Guide to Keeping your Garden Healthy*. Emmaus, Pennsylvania: Rodale Press, Inc., 1996.

Websites:

Clemson University: <http://www.clemson.edu/extension/hgic/pests/index.html>

Factsheets are produced by the Toronto Master Gardeners in association with the Toronto Botanical Garden. They provide introductory information about a broad range of horticultural topics and are intended for personal use and study purposes. Should your gardening group or organization wish to use multiple copies we ask that you inform the Toronto Botanical Garden at info@torontobotanicalgarden.ca.

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