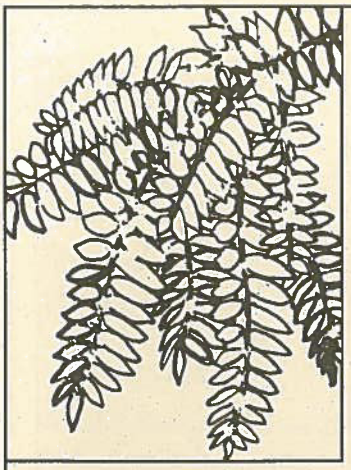
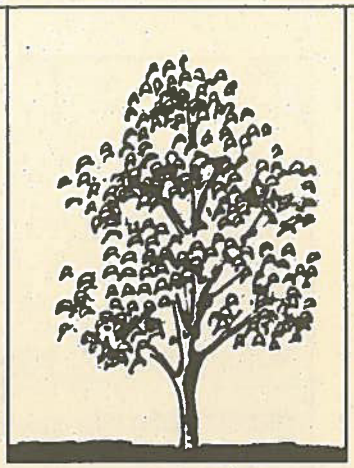
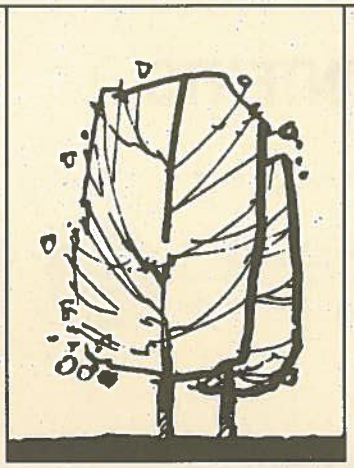
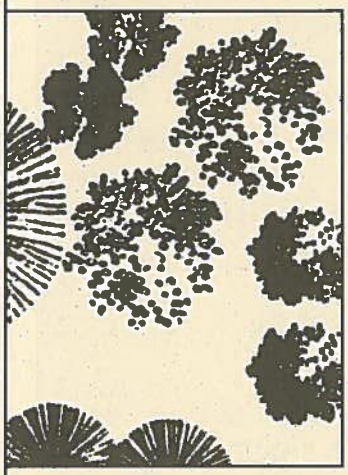
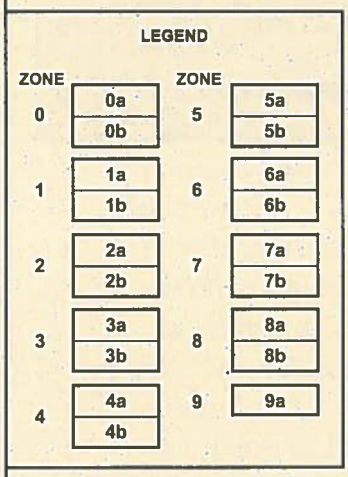


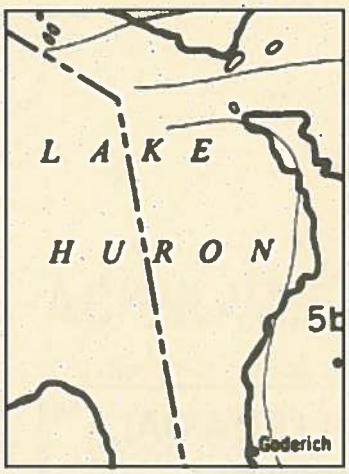


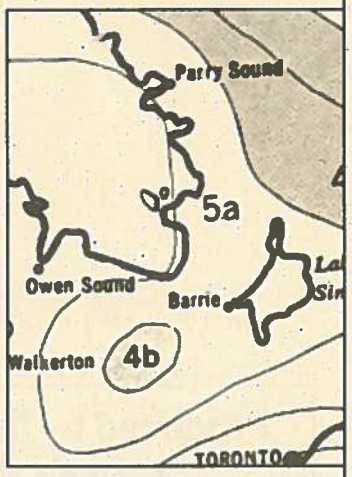




A REFERENCE GUIDE FOR SELECTING AND HANDLING PLANT MATERIAL







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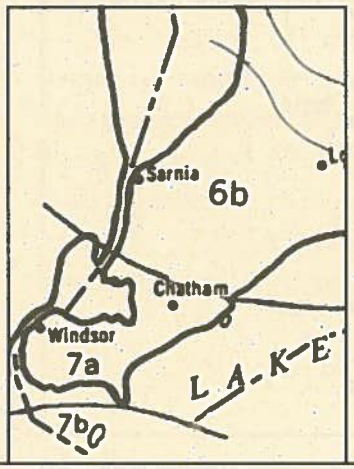

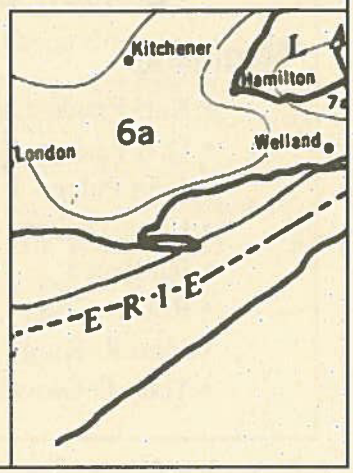

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INTRODUCTION

This guide has been developed as part of *The Green Book, A Manual of Landscape Practice in Ontario*. *The Green Book* is a series of references for soft landscape development prepared by the **Liaison Committee** of the **Landscape Ontario Horticultural Trades Association** and the **Ontario Association of Landscape Architects** (LOHTA/OALA).

The mounting pressures on the overall environmental health of our communities make it vital to maintain and expand healthy urban forests and landscapes. Of utmost importance is the proper evaluation of a planting site and the selection of plant material that is best suited for that particular location. It is essential that the plant material selection process be based on the best and most current information available.

All those involved in selecting plant material for landscape development should be aware of the following information:

- Botanical and common names of plant material;
- The hardiness zone of the site;
- Standard sizing specifications for deciduous trees, coniferous trees and shrubs;
- Condition of the soil at the planting site;
- All other site-specific, potentially limiting environmental conditions;
- The time of year the planting will take place;
- The source of the plant material.

It is the intention of this guide to reinforce the importance of these factors and point out considerations that will apply when selecting plant material for any situation.

It is hoped that *The Green Book* will become the standard guideline for all who work in the landscape industry including municipalities, provincial and federal agencies and the individual alike.

These guides are endorsed by:

HORTICULTURAL TRADES ASSOCIATION
landscape ontario.com
Green for Life!

Comments and suggestions to improve the Guide are invited and should be addressed to:

The LOHTA/OALA Liaison Committee:

c/o **LOHTA/OALA**
7856 Fifth Line South
R.R. #4 - Stn. Main,
Milton, Ontario
L9T 2X8

Copies of this and other guides may be obtained from this office.

ACKNOWLEDGEMENTS

The Green Book and its Guides required the thoughtful attention that can only come from the experience, knowledge and dedication of individual committee members.

The members of the Liaison Committee by generously giving their time and expertise, provided the resource without which this work could not have been completed. Without the timely reminder of meeting dates, word processing and production provided by LOHTA staff, this work would not be where it is today. A special thanks is in order.

PLANT NAMES

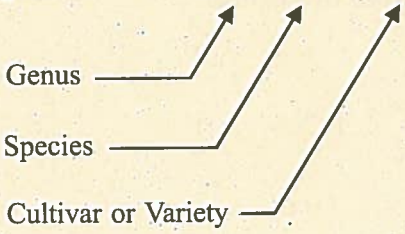
Plant material is identified by both its botanical name and common name(s). The botanical name is based on the scientific discipline that places each plant in a family of similar plants, and assigns each a genus and separate species. This method of naming plants is universal and, if correctly used, means a *Larix decidua* is the identical plant in Canada, as it is in the rest of the world.

Nursery catalogues generally list plants by their genus, species and cultivars. The correct botanical names for plants should be determined through references such as *Hortus Third* or *Bailey's Encyclopedia* .

Often plants are known by more than one common name. Specifying the correct botanical name (genus and species) of a plant eliminates misunderstanding regarding the identity of the plants specified.

Example:

Common Name	**Botanical Name**
Globe Spruce	*Picea abies* 'Globosum'



NURSERY STOCK SPECIFICATION

The Canadian Nursery Trades Association (CNTA) produces the *Canadian Standards for Nursery Stock* (latest edition.) This sets the minimum standards by which Canadian nursery stock should be judged. If all those involved in the specification, selection, installation and supply of plant material follow the CNTA Standards, there should be no misunderstanding over plant material sizes and conditions.

For these guidelines to work, plant material sizing specifications must be adhered to. The incremental size change must remain constant as shown in the example below from the CNTA Standards:

EVERGREENS AND DECIDUOUS CONIFERS 3.2
Designation of Size Grades
Height or spread measurements to be stated as follows:

in 5 cm increments ..... to 30 cm
in 10 cm increments ..... from 30 to 60 cm
in 20 cm increments ..... from 60 to 100 cm
in 25 cm increments ..... from 100 to 200 cm
in 50 cm increments ..... from 200 to 500 cm
in 100 cm increments .. from 500 cm and over

Please note: Do not interpret these figures as a measure of caliper size. All sizes are to be specified in metric units. Do not convert imperial sizes to obtain metric sizes as this will not provide an accurate comparison.

For copies of the current *Canadian Standards for Nursery Stock*, contact the Canadian Nursery Landscape Association

7856 Fifth Line South
R.R. #4 Stn. Main
Milton, Ontario L9T 2X8
Phone: (905) 875-1399

SELECTION

In addition to winter hardiness, the following two elements must be considered when specifying plant material for a given location and zone.

1. The below-ground soil environment where roots grow. Soil conditions that need to be assessed are: type, depth and surface area, drainage, pH and watertable. Some plants grow better in 'dry' soils while others are more tolerant of wet conditions.

2. The above-ground environment. Suitability, aesthetics and functions should be assessed for the existing levels of air pollution as well as other factors that directly influence the site's microclimate, including temperature extremes, wind and shade patterns.

1) SOIL CONDITION

Conditions of the soil which play a major role in the success of transplanting and future growth include pH; density; moisture levels; proportion of organic, inorganic matter and contaminents; soil temperature and porosity. The most carefully cultivated nursery stock will fail to thrive when in inappropriate soil. In many cases, it will be necessary to amend the existing and surrounding soil.

Soil tests should be obtained prior to any planting. Accurate knowledge of soil conditions will aid in the selection of plants; allows the amendment of the soil (if necessary) and therefore increases the chance of survival of the plant. Some details on soil amendment for planting can be found in the *Reference Guide for Planting Details*, the first brochure in *The Green Book* series.

2a) SITE SUITABILITY

This involves the three dimensional space and relationship to other elements in the landscape. Plants must have sufficient room to grow to develop the envisioned character of the landscape. A tall, columnar tree may make a good barrier if planted closely in a row, but will not make a good street tree where a leafy canopy is highly desirable. The plants should also be in scale with the surroundings.

A horse chestnut makes a majestic statement in a large park, but may not make a good street tree — particularly on a tight boulevard where maintenance is an issue. The impact of fruit seed production and leaves on landscape maintenance should always be considered when selecting plants.

The presence of pedestrian traffic may make it necessary to select plants grown specifically for this purpose.

Cultivated varieties may grow better in urban conditions whereas native species may prefer a forest-like environment.

2b) AESTHETICS

The general appearance, character and form of the plant must fit with the design intent and harmonize with the surrounding environment. Plants of different species may adapt equally well to similar site conditions, but may not create the same aesthetic effect.

Plants may be selected for other aesthetic features such as colour and texture of the foliage and fruit, branching habits, bark characteristics or simply personal preference. A series of plants recommended for specific purposes are listed in the Appendix. The selection of too wide a variety of plant types may result in a loss of unity and purpose to the landscape.

Selecting too wide a variety of plant types may result in a loss of unity and purpose to the landscape. However, planting a monoculture, or only one type of plant creates problems, too, in that an insect or disease infestation can wipe out the whole landscape.

2c) ENVIRONMENTAL FUNCTIONS

In addition to the aesthetic benefit to the landscape, most plants can be used to impact positively on the surrounding environment. Plants can be used in scientific ways to ameliorate pollution and other negative problems. For example, plants may be selected as visual and physical barriers, to attract wildlife, act as a windbreak, noise barrier or privacy screen.

In bio-engineering, plants are selected for the purpose of reducing erosion, to fortify streambanks and filter out pollution in stormwater. Some plants are used for their ability to release moisture to the air and cool their surroundings. Other plants offer the ability to absorb and withstand car pollutants, or reduce noise and dust. Some species can withstand salt spray or winter accumulations.

Green plants are responsible for the most important metabolic process on earth – namely, photosynthesis. During this complex process, green plants take in carbon dioxide which is incorporated into plant sugar molecules, and release oxygen to the atmosphere.

SOURCE & HANDLING

All plant material should be nursery grown and root pruned and/or transplanted during the growing seasons.

Nurseries are usually careful to select seed and vegetative propagation material from hardiness zones that are comparable to the hardiness zone in which their nursery is located. Plants that are transplanted into a colder zone may not survive if they have been grown in a milder zone. Whenever possible, plants should be pre-selected in the field (i.e., Nursery).

It is the responsibility of the nursery grower to ensure that correct cultural practices such as root pruning and proper transplanting have been undertaken on all plant material to ensure good development of a healthy, fibrous root system.

The practice of collecting native plants from the natural environment for project sites is not recommended. Nursery stock that has been propagated vegetatively or from seed should be utilized wherever possible.

TIME OF DIGGING

Plants should be dug in the proper season. Most deciduous plants can be dug bareroot in a dormant state. All plants dug during periods of active growth must have a soil ball.

BALLED & BURLAPPED STOCK

Deciduous material is usually dug early in the growing season before bud break, or when dormant in fall. These pre-dug plants can be successfully transplanted throughout the summer.

BAREROOT STOCK

Coniferous material should not be dug bare root.

Dig deciduous plants bareroot only when dormant in late fall or early spring. Bareroot plants can be kept dormant in proper cold storage where temperature and humidity are controlled. Plants from cold storage should not be planted after May 30th unless proper post-planting care is provided. Ideally plants from cold storage should have their roots puddled in a mud slurry for several hours before planting. Make sure roots are well moistened before and after installation. Protect roots from wind, sun and freezing temperatures as these elements will cause damage.

Be aware of the deceptive practice of "false balling." This occurs when bareroot plants are misrepresented as container grown, balled and burlapped or wire basket material. Because these plants have not had a chance to generate new absorbing roots, false balled material can be identified by the ease with which they can be pulled out of the potting mixture.

CONTAINER GROWN STOCK

The following recommendations apply only to plants grown at a nursery in containers.

Coniferous and deciduous container grown stock can be installed throughout the planting season due to the minimal disturbance of roots when transplanting.

Plants grown in containers receive regular amounts of water and fertilizer while in the nursery. Because theses plants are grown in well drained, porous media, they will need more frequent watering than bare root or balled and burlap material when planted in the landscape.

PLANTING SUCCESS

The key to transplanting success is to minimize stress on plants, both before and after they are planted. This includes handling and transporting the plants correctly, protecting them from drying wind and sun, ensuring they are well watered before and after planting, and making sure the soil at the planting site is properly amended to give the plants a good start. Planting success approaching 100 per cent can be achieved by eliminating stress on plant material.

TRANSPLANTING STOCK

Coniferous material can be transplanted virtually throughout the year except during the time of active growth and before new growth has hardened off.

Deciduous material should not be transplanted during the hot dry summer to avoid excessive stress from which the plant may never recover. Refer to the *Reference Guide on Planting Details* for additional information.

PLANTING CALENDAR

Timing is critical to the survival and minimization of shock to a plant being transplanted. A calendar for planting bare root, balled, container grown and tree spaded plant material has been assembled below.

Obviously weather conditions control planting periods to a large extent. A snow storm, frozen ground or muddy soil may make transplanting on March 15 (or any other date) impossible. Planting later than the recommended time period may result in significant winter damage. Drought conditions and high winds are other major considerations.

Certain other circumstances such as site access, contract completion date or penalty for instance could control planting periods. However, such situations must be carefully weighed before calculated risks are taken along with proper skills and precautions to extend the planting period. The result may be that a tree normally planted in spring may be fall planted, given that proper technique and post-care are followed to wean the plant through the shock period.

SPRING PLANTING

Experience has shown that some species require special considerations in transplanting. The plant material listed below has been singled out as best when dug in a dormant state in spring and immediately transplanted thereafter. The same plants will not have high survival rate when heeled in for the summer and transplanted in fall.

DECIDUOUS TREES

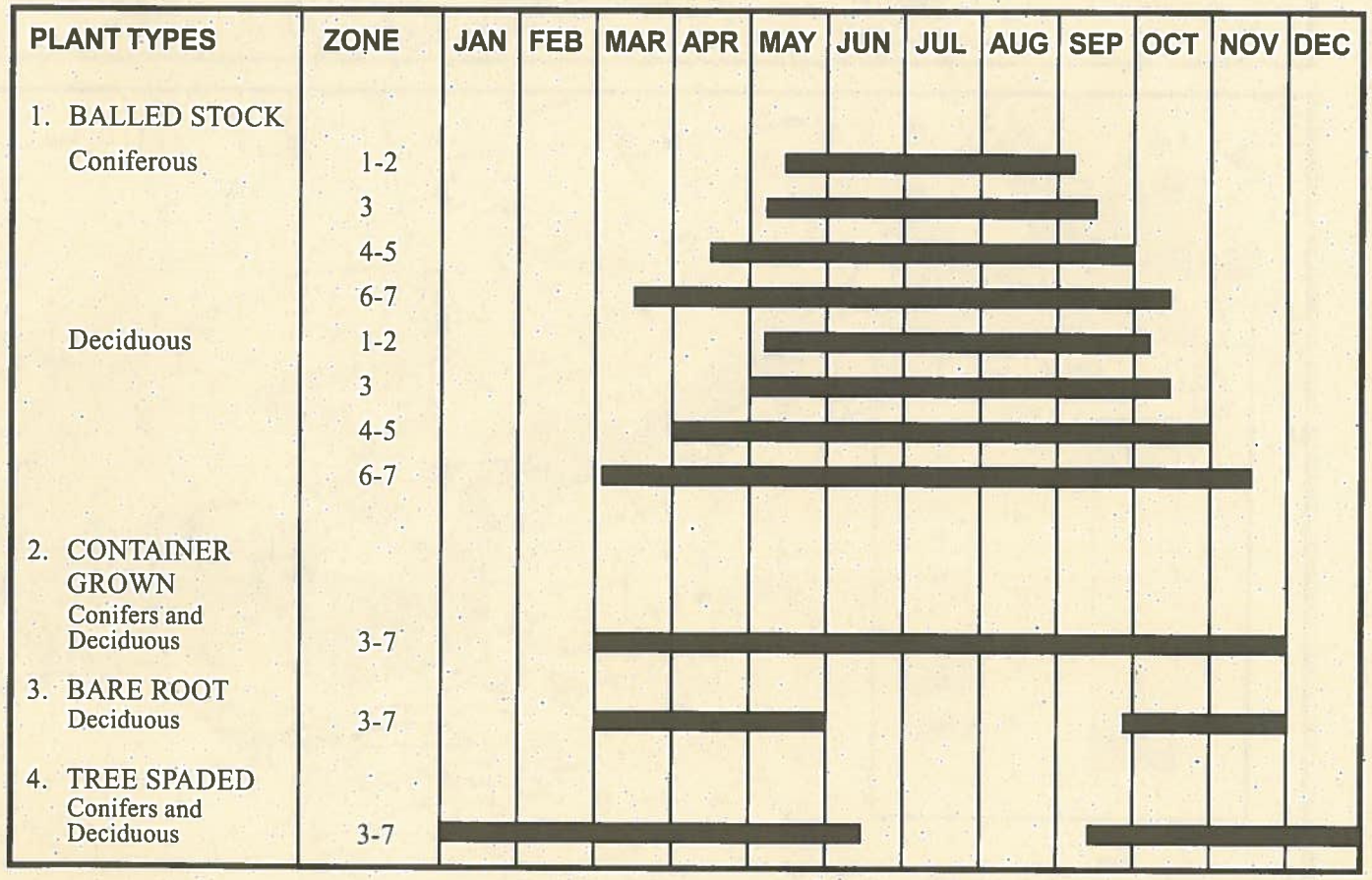
Acer rubrum and cultivars
Acer saccharinum and cultivars
Ailanthus
Betula and cultivars
Carya and var.
Juglans and var.
Ostrya
Platanus and var.
Populus and var.
Prunus and var.
Quercus and var.
Salix and var.

SHRUBS

Cercis
Cornus alternifolia
Cornus florida and var.
Cornus kousa
Cotinus and var.
Daphne and var.
Hibiscus syriacus
Pieris japonica
Rhododendron spp.

CONIFEROUS TREES

Larix and var.
Tsuga and var.



PLANT HARDINESS ZONES OF CANADA

(Fig. 1)

PLANT HARDINESS ZONES

The map on page 8 (Fig. 1), first published in 1967 by the Department of Agriculture Plant Research Institute is specifically tailored for Canada.

The map is in two sections, one for the eastern half of Canada and one for the western half and shows the areas of winter hardiness for ornamental plants in the more heavily populated areas of Canada. The map is based on a formula that takes into consideration several meteorological factors affecting the hardiness of a plant in a given location. The most important element in plant survival is the minimum temperature during the winter. Other important considerations are the length of the frost-free period, summer rainfall, maximum temperatures, snow cover and wind.

An Ontario map (Fig. 2), following this page is an adaptation of (Fig. 1) for ease of the reader's orientation.

The hardiness areas have been divided into 10 zones. The one marked 0 is the coldest. Other zones are progressively milder, to 9, which is the mildest. The list below contains representative plants that normally survive in each zone. Users should locate their own area on the map and so establish the zone in which the plants are to be grown. Sometimes, even though older plants are hardy, young plants of many species may be tender and need protection during the first winter.

Small areas with peculiar microclimates often exist within a zone. These areas are colder or milder than the surrounding area. They are usually too small to locate on the hardiness map or they may not have been recorded. In addition, sharp changes in elevation, as found in mountainous or hilly regions, cause a difference in climate that cannot be accurately indicated on the map. The user should also remember that the zone lines are arbitrarily drawn and that the zones merge gradually into each other. Consequently, conditions near the border of one zone may closely approximate those of an adjacent zone.

Another map, prepared by the USDA and in use since 1960 has many similarities in a broad sense, however it lacks the accuracy and detail of the Canadian map and should be used with this in mind.

The Canadian Plant Hardiness Zone Map has been correlated with publications such as *Ornamental Shrubs for Canada* and *A Checklist of Ornamental Trees of Canada* as well as many Canadian Nursery Catalogues. It is therefore the recommended base.

INDICATOR PLANTS

These are plants that survive the coldest temperatures in the zone in which they normally succeed. The following are some examples.

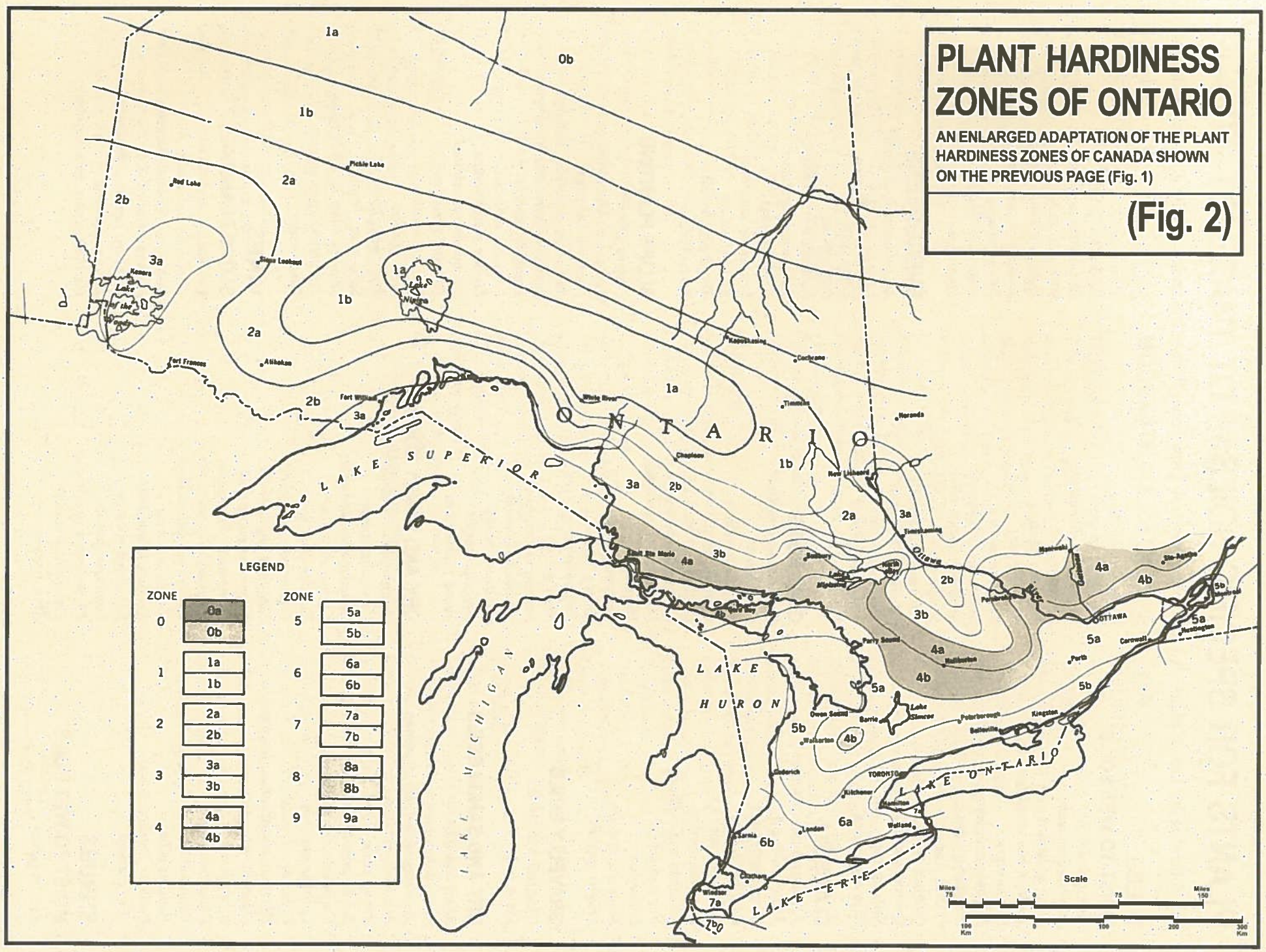
Latin Name	Zone	Common Name
Buxus sempervirens	9a	English Box
Hypericum hookerianum		Hidcote
Prunus laurocerasus		Cherry-laurel
Acer palmatum	6	Japanese Maple
Deutzia gracilis		Slender Deutzia
Forsythia x intermedia 'Spectabilis'		Showy Forsythia
Cotinus coggygria	5	Smokebush
Forsythia ovata		Early Forsythia
Viburnum carlesii		Fragrant Viburnum
Hydrangea paniculata 'Grandiflora'	4	Pegee Hydrangea
Philadelphus 'Boquet Blanc'		Boquet Blanc Mockorange
Taxus cuspidata		Japanese Yew
Euonymus alata	3	Winged Spindletree
Rhus typhina		Staghorn Sumac
Spiraea x vanhouttei		Bridalwreath Spirea
Caragana arborescens	2	Siberian Peashrub
Cornus alba 'Siberica'		Siberian Dogwood
Cotoneaster integerrima		European Cotoneaster
Amelanchier alnifolia	1	Saskatoon berry
Cotoneaster lucida		Hedge Cotoneaster
Pinus mugo var. Mugo		Mugo Pine

Material reprinted from: Plant Research Institute, Research Branch, Canada Department of Agriculture, Ottawa, Canada.

PLANT HARDINESS ZONES OF ONTARIO

AN ENLARGED ADAPTATION OF THE PLANT HARDINESS ZONES OF CANADA SHOWN ON THE PREVIOUS PAGE (Fig. 1)

(Fig. 2)



PLANTS FOR SPECIFIC SOILS

The following are lists of plants that have been proven to grow better than others under specific growing conditions:

TREES

MOIST TO WET SOILS

Acer rubrum
Acer saccharinum
Alnus glutinosa
Amelanchier alnifolia
Betula nigra
Fraxinus excelsior
Populus species
Prunus padus
Quercus alba
Quercus palustris
Salix species
Tilia americana

CLAY SOILS

Aesculus hippocastanum
Alnus glutinosa
Carpinus betulus
Catalpa species
Crataegus species
Fraxinus species
Gleditsia triacanthos
Ilex species
Laburnum
Magnolia species
Prunus species

GRAVELLY SOILS

Gleditsia triacanthos
Pinus mugo

DRY AND SANDY SOILS

Abies concolor
Acer platanoides
Acer negundo/A. saccharinum
Ailanthus altissima
Aralia elata
Betula populifolia/B. verrucosa
Carpinus caroliniana
Catalpa speciosa
Celtis occidentalis
Fraxinus pensylvanica lanceolata
Gleditsia triacanthos
Picea pungens
Pinus banksiana
Pinus sylvestris
Populus alba
Robinia psuedoacacia
Tilia cordata

SHRUBS

MOIST TO WET SOILS

Acer negundo
Cornus alba
Cornus stolonifera
Forsythia species
Hippophae rhamnoides
Kerria japonica
Lonicera Maacki
Salix caprea
Salix purpurea
Sambucus canadensis
Symphoricarpos albus
Symphoricarpos orbiculatus
Viburnum cassinoides
Viburnum dentatum
Viburnum lentago
Viburnum opulus
Viburnum trilobum

CLAY SOILS

Chaenomeles japonica
Cornus mas
Corylus avellana
Cotinus coggygria
Deutzia species
Euonymus species
Hamamelis virginiana
Hypericum
Ilex aquifolium
Kerria japonica
Philadelphus species
Rhus glabra
Sambucus racemosa
Viburnum lantana
Viburnum opulus
Weigela species
Yucca filamentosa

DRY AND SANDY SOILS

Acanthopanax sieboldianus
Caragana species
Chaenomeles japonica
Cornus racemosa
Cotinus coggygria
Cotoneaster acutifolia
Eleagnus angustifolia
Euonymus europaeus
Hamamelis virginiana
Hippophae rhamnoides
Hypericum kalmianum
Kerria japonica
Kolkwitzia amabilis
Ligustrum species
Lonicera species
Physocarpus opulifolius
Potentilla fruticosa
Rhus typhina
Ribes alpinum
Rosa rugosa
Salix alba 'Tristis'
Shepherdia argentea
Sorbaria sorbifolia
Spiraea x Vanhouttei
Tamarix pentandra
Ulmus pumila
Viburnum lantana
Viburnum lentago

EVERGREENS

Arctostaphylos uva-ursi
Cytisus praecox
Erica carnea
Ilex species
Juniperus horizontalis
Juniperus virginiana
Larix laricina
Leucothoe catesbaei
Rhododendron
Thuja occidentalis
Yucca species

SLOPE PLANTING

Cornus species
Forsythia 'Arnold Dwarf'
Forsythia suspensa
Juniperus chinensis 'Sargentii'
Juniperus horizontalis cultivars
Lonicera maacki
Lonicera morrowi
Myrica pensylvanica
Pachysandra terminalis
Potentilla fruticosa
Rhus aromatica
Rhus typhina
Rosa multiflora
Salix alba 'Tristis'
Stephanandra incisa 'Crispa'
Symphoricarpos species
Vinca minor

VINES

SLOPE PLANTING

Celastrus scandens
Clematis paniculata
Euonymus fortunei 'Vegetus'
Hedera helix
Lonicera japonica 'Halliana'
Lycium chinense
Parthenocissus quinquefolia

PLANTS TOLERANT TO SALT

HIGH TOLERANCE

TREES

Acer platanoides (Norway maple)
Aesculus hippocastanum (horse chestnut)
Ailanthus altissima (tree of heaven)
Carya ovata (shagbark hickory)
Fraxinus americana (white ash)
Gleditsia triacanthos (honeylocust)
Larix species (larches)
Picea pungens (blue spruce)
Pinus Banksiana (jack pine)
Pinus nigra (Austrian pine)
Populus alba (European silver poplar)
Populus deltoides (eastern cottonwood)
Populus grandidentata (largetooth aspen)
Populus tremuloides (trembling aspen)
Prunus virginiana (chokecherry)
Pyrus species (pears)
Quercus alba (white oak)
Quercus macrocarpa (bur oak)
Quercus prinus (pin oak)
Quercus robur (English oak)
Quercus rubra (red oak)
Robinia pseudoacacia (black locust)
Sorbus species (mountain ashes)
Ulmus glabra (Wych elm)
Ulmus procura (English elm)

SHRUBS

Caragana arborescens (Siberian pea shrub)
Elaeagnus angustifolia (Russian olive)
Euonymus alatus (winged euonymus)
Juniperus species (junipers)
Lonicera species (honeysuckles)
Pinus mugo (mugo pine)
Rhus typhina (staghorn sumac)
Ribes alpinum (alpine currant)
Shepherdia argentea (buffaloberry)
Spiraea x Vanhouttei (bridalwreath spirea)
Symphoricarpus species (snowberry/coralberry)
Syringa species (lilacs)
Tamarix pentandra (tamarisk)

MODERATE TOLERANCE

TREES

Acer rubrum (red maple)
Acer saccharinum (silver maple)
Acer saccharum (sugar maple)
Alnus glutinosa (black alder)
Alnus rugosa (speckled alder)
Betula papyrifera (white birch)
Betula populifolia (gray birch)
Catalpa species (catalpas)
Fraxinums pennsylvanica (green ash)
Juglans nigra (black walnut)
Juglans regia (English walnut)
Picea abies (Norway spruce)
Prunus serotina (black cherry)
Tilia americana (basswood)
Ulmus americana (white elm)

SHRUBS

Acer ginnala (amur maple)
Buxus microphylla (Japanese boxwood)
Cydonia oblonga (quince)
Forsythia x intermedia (border forsythia)
Ligustrum lucidum (glossy privet)
Philadelphus species (Mockoranges)
Rhus glabra (smooth sumac)
Pyracantha species (Firethorns)
Salix pentandra (laurel-leaf willow)
Taxus species (Yews)
Ulmus pumila (Siberian elm)
Viburnum Opulus (European highbush cranberry)
Viburnum trilobum (American highbush cranberry)

LOW TOLERANCE

TREES

Abies balsamea (balsam fir)
Acer pseudoplatanoides (sycamore maple)
Amelanchier species (Serviceberries)
Carpinus Caroliniana (blue beech)
Celtis occidentalis (hackberry)
Cercis canadensis (eastern redbud)
Crataegus species (hawthorns)
Fagus grandifolia (American beech)
Ginkgo biloba (ginkgo)
Liquidambar styraciflua (sweet gum)
Liriodendron tulipifera (tulip tree)
Malus 'Hopa' (Hopa crabapple)
Morus species (mulberries)
Ostrya virginiana (ironwood)
Picea glauca (white spruce)
Pinus resinosa (red pine)
Pinus strobus (white pine)
Pinus sylvestris (Scots pine)
Pseudotsuga menziesii (Douglas fir)
Salix alba 'Tristis' (golden weeping willow)
Thuja occidentalis (eastern white cedar)
Tsuga canadensis (hemlock)

SHRUBS

Alnus incana (Alder)
Chaenomeles speciosa (flowering quince)
Cornus racemosa (gray dogwood)
Cornus stolonifera (red osier dogwood)
Cornus stolonifera 'Flaviramea' (yellow twig dogwood)
Kolkwitzia amabilis (beautybush)
Ligustrum vulgare (common privet)
Rosa species (roses)
Sambucus racemosa (European red elder)
Spiraea x bumalda 'Frobeli' (Frobel's spirea)

Source of Information:
The Ontario Shade Tree Council

PLANTS FOR SCREENS & SHADE

DECIDUOUS TREES
SCREENS (WINDBREAKS)
Acer ginnala
Acer platanoides
Acer rubrum
Acer saccharum
Cornus mas
Crataegus phaenopyrum
Fraxinus americana
Fraxinus pennsylvanica var. *lanceolata*
Malus baccata
Populus alba
Populus nigra 'Italica'
Populus tremuloides
Quercus species
Tilia species
Ulmus pumila

CONIFEROUS TREES
SCREENS (WINDBREAKS)
Juniperus virginiana
Picea abies
Picea glauca
Picea omorika
Picea pungens
Picea pungens 'Glauca'
Pinus nigra
Pinus resinosa
Pinus strobus
Pseudotsuga menziesii 'Glauca'
Thuja occidentalis
Tsuga canadensis

SHRUBS
SCREENS (WINDBREAKS)
Amelanchier canadensis
Caragana arborescens
Cornus mas
Elaeagnus angustifolia
Elaeagnus umbellata
Euonymus europaea
Forsythia intermedia
Kolkwitzia amabilis
Ligustrum species
Lonicera tatarica
Philadelphus coronarius
Salix pendandra
Syringa vulgaris

DENSE HEDGES
Chaenomeles japonica
Crataegus species
Elaeagnus angustifolia
Gleditsia triacanthos
Hippophae rhamnoides
Malus sargentii
Pyracantha coccinea
Rosa multiflora
Shepherdia argentea

SHADE (UNDERSTORY)
Acanthopanax Sieboldianus
Acer campestre/A. pensylvanicum
Amelanchier species
Arctostaphylos uva ursi
Buxus species
Carpinus caroliniana
Caryopteris incana
Cercis canadensis
Cornus alba
Corylus species
Daphne cneorum
Euonymus alata 'Compacta'
Euonymus europaeus
Euonymus fortunei 'Coleratus'
E. fortunei 'Vegetus'
Gautheria procumbens
Hammamelis virginiana
Hydrangea species
Ilex species
Kerria japonica
Kalmia latifolia
Leucothoe Fontanesiana
Ligustrum species
Lonicera species
Mahonia aquifolium
Paxistima canbyi
Pieris japonica
Rhododendron species
Ribes alpinum
R. odoratum
Rubus odoratus
Salix caprea
Sambucus nigra
S. racemosa
Sorbus aucuparia
Stephanandra incisa
Styrax japonica
Symphoricarpos species
Viburnum species

PERENNIALS
SHADE (UNDERSTORY)
Aegopodium podograria
Ajuga reptans
Asarum canadense
Bergenia cordifolia
Convallaria majalis
Epimedium pinnatum
Hemerocallis species
Hosta species
Monarda didyma
Tradescantia virginiana

PERENNIALS
SEMI-SHADE
Aconitum napellus
Aquilegia species
Doronicum plantagineum
Gallium odoratum
Lobelia Cardinalis
Mertensia virginiana
Viola odorata

WILDFLOWERS
SHADE
Arisaema triloba
Hepatica americana
Tiarella cordifolia
Trillium grandiflorum

FERNS
SHADE
Adiantum pedatum
Dryopteris marginalis
Matteucia struthiopteris
Osmunda cinnamomea
Polystichum acrostichoides

PLANTS WITH NOTABLE ATTRIBUTES

SUMMER COLOUR FOLIAGE

BLUE

Abies concolor
Picea pungens 'Glauca'
Picea pungens 'Hoopsi'

BLUE-GREEN

Chamaecyparis nootkatensis 'Pendula'
Juniperus chinensis 'Sargentii'
Junipers conferta 'Blue Pacific'
Juniperus horizontalis 'Blue Acres'
Juniperus horizontalis 'Prince of Wales'
Juniperus horizontalis 'Wiltonii'
Juniperus sabina 'Tamariscifolia'
Lonicera Korolkowii 'Zabellii'

GRAY

Elaeagnus angustifolia
Elaeagnus umbellata
Hippophae rhamnoides
Populus alba 'Pyramidalis'
Populus alba 'Raket'
Salix repens
Shepherdia argentea

PURPLE

Corylus maxima 'Purpurea'
Cotinus coggygria 'Royal Purple'
Fagus sylvatica 'Purpureo-pendula'
Fagus sylvatica 'Riversii'
Fagus sylvatica 'Spaethiana'
Malus 'Royalty'
Prunus 'Thundercloud'

RED

Acer palmatum 'Atropurpureum'
Acer palmatum 'Bloodgood'
Acer platanoides 'Crimson King'
Acer platanoides 'Deborah'
Acer platanoides 'Schwedler'
Malus 'Radiant'
Prunus virginiana 'Schubert'
Rosa rubrifolia

WHITE VARIEGATED

Acer platanoides 'Drummondii'
Cornus alba 'Elegantissima'
Euonymus fortunei 'Emerald Gaiety'

YELLOW

Chamaecyparis pisifera 'Filifera Aura Nana'
Cytissus praecox 'Allgold'
Euonymus fortunei 'Sheridan Gold'
Gleditsia triacanthos 'Sunburst'
Ligustrum vicaryi
Ligustrum vulgaris 'Aureum'
Philadelphus coronarius 'Aureus'
Physocarpus opulifolius 'Luteus'
Sambucus canadensis 'Aurea'
Sambucus nigra 'Aurea'
Thuja occidentalis 'Douglasii Aurea'
Thuja occidentalis 'Sunkist'

YELLOW VARIEGATED

Cornus alba 'Spaethi'
Euonymus fortunei 'Emerald 'n Gold'
Euonymus fortunei 'Goldtip'
Euonymus fortunei 'Sunspot'
Juniperus chinensis 'Pfitzeriana Aurea'
Juniperus chinensis 'Pfitzeriana Old Gold'
Weigela nana 'Variegata'

PURPLE, PINK & GREEN

Fagus sylvatica 'Tricolor'

AUTUMN COLOUR

TREES

Acer rubrum
Acer saccharum
Amelanchier species
Betula species
Celastrus species
Cornus alternifolia
Cornus florida
Crataegus lavallei
Crataegus phaenophyrum
Fagus sylvatica 'Purpurea'
Ginkgo biloba
Metasequoia glyptostroboides
Quercus palustris
Quercus rubrum
Sorbus americana
Sorbus aucuparia

SHRUBS

Acer ginnala
Acer palmatum
Cercidiphyllum japonicum
Cornus mas
Cornus racemosa
Cotinus coggygria
Cotoneaster apiculata
Cotoneaster divericata
Enkianthus campanulatus
Euonymus alatus
Euonymus coloratus
Euonymus europaeus
Hypericum kalmianum
Ilex verticillata
Juniperus horizontalis 'Plumosa Compacta'
Kerria japonica
Ligustrum obtusifolium
Magnolia soulangeana
Mahonia aquifolium
Myrica pensylvanica
Parthenocissus quinquefolia
Parthenocissus tricuspidata
Paxistima canbyi
Pyrus calleryana
Rhus aromatica
Rhus typhina
Ribes aureum
Rosa rugosa
Viburnum dentatum
Viburnum lentago

PLANTS FOR SPECIFIC SPACES

The following are lists of plants that have been proven to grow better than others under specific growing conditions:

CONFINED ROOT SPACES

TREES

Acer campestre
Acer ginnala
Acer platanoides
Fraxinus pennsylvanica
Ginkgo biloba
Malus x species
Populus 'Tower'

ROCK GARDENS

SHRUBS

Abies koreana
Abies lasiocarpa 'Compacta'
Acer palmatum
Buxus species
Chamaecyparis cyano 'Viridis'
Chamaecyparis obtusa 'Nana Gracilis'
Chamaecyparis pisifera 'Filifera Nana'
Chamaecyparis pisifera 'Filifera Aurea Nana'
Cotoneaster adpressus
Cotoneaster dammeri
Cotoneaster horizontalis
Cotoneaster praecox
Cytisus x Beanii
Euonymus fortunei cultivars
Hypericum calcinum
Juniperus communis 'Repanda'
Juniperus horizontalis cultivars
Juniperus procumbens 'Nana'
Picea glauca 'Echiniformis'
Picea glauca 'Nidiformis'
Picea pungens 'Glauca Globosa'
Spiraea x *bumalda*
Symphoricarpos chenaulti 'Hancock'
Tsuga canadensis 'Jeddeloh'
Viburnum opulus 'Nana'
Yucca species

GROUND COVERS

Arctostaphylos uva ursi
Daphne burkwoodii
Daphne cneorum
Erica carnea
Gaultheria procumbens
Hedera helix
Iberis sempervirens
Microbiota decussata
Paxistima canbyi
Vinca minor

Most top grafted standards
Miniature roses
Perennials
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