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Alberta Yards & Gardens

What to Grow

Alberta Yards & Gardens



Shelley Barkley

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Introduction

Gardening in Alberta can be a fun and interesting challenge. Of the many books and references on the market that help you grow plants for your yard and garden, very few can answer the perennial question: "but what grows well in Alberta?"

Well here is a growers' guide to make your gardening easier. *Alberta Yards and Gardens: What to Grow* gives you the information you need to successfully grow ornamental trees and shrubs, small fruits and berries, flowers, vegetables, herbs and even water plants in the extremes of the Alberta climate. With summer high temperatures over 30 degrees Celsius and winter lows of minus 40, gardening in Alberta presents an interesting environment for either the hobby gardener or the specialist.

Building on the strengths of the earlier *Alberta Horticultural Guide*, this new book updates and expands on many topics of interest to the Alberta gardener. Tried and true tips for pruning trees and shrubs and for wintering roses are combined with new sections on specialty gardens to attract birds and butterflies. Or try your hand at water gardening or growing herbs. Harvest and preserve your favorite herbs and avoid paying expensive supermarket prices for these delicious seasonings.

The wealth of information contained in this book can be applied to a large rural or suburban yard or garden or to a small balcony garden in the city. Whatever your needs, this new growers' guide can help make your Alberta garden a success.



Woody Ornamentals





Woody Ornamentals

Home Landscape Planning and Design

Effective landscapes don't just happen; they are planned and re-planned before holes are dug, plants are set in place and sod is laid. Planning starts with defining the purposes of landscaping and deciding what will suit the owners' lifestyles. Landscaping objectives vary from owner to owner but typically include creating a showcase of beauty, a pleasant recreation space, an outdoor entertainment area, green playgrounds for children and perhaps attracting wild life.

Ornamental plants and landscaping also often have value beyond their aesthetic qualities and beauty. They can be used effectively to control noise, glare, traffic, temperature, wind, solar radiation and erosion, so these attributes should be factored into the planning process.

Time and money are important aspects to consider in a landscape design. The long-term plan must consider the time or money available for routine maintenance like lawn mowing. Landscape construction materials and plants can cost tens of thousands of dollars over several years, so home owners should keep the landscape plan within their financial means.

Libraries and book stores have many books on landscaping for "do-it-yourselfers." Alberta Agriculture, Food and Rural Development has a publication called *Landscaping Alberta Yards*, Agdex 271/17-2, which is a

good source of basic landscaping information. In addition to books, several computer software programs are available that assist in basic landscape design. Be aware that plants listed in software from outside Alberta may not be suitable for our climate; however, basic design features still apply.

How to Plant

Container-grown plant material can be planted throughout the growing season. However, bare-rooted trees and shrubs should be planted in the spring.

Tips

- Keep roots moist and protected from the sun and wind until planted.
- Dig holes large enough to accommodate the root ball. Be generous when digging the hole.
- Carefully remove the plant from the container. All hard containers, whether plastic or peat, need to be removed.
- If the tree or shrub is balled and burlap covered, cut or loosen the binding but leave the burlap wrapping attached to the soil ball.
- Check the condition of the root ball. Look for encircling or girdling roots, and if any are present, prune roots on the outside of the soil ball to promote new root growth. The soil ball must be kept as intact as possible. If root pruning is not necessary, a light combing of the outer surface of the soil ball will encourage new root growth.
- The top surface of root ball should be at or just below the existing soil level.
- Work top soil beneath and among roots until the hole is filled. When backfilling balled and burlap covered plant material, be sure all the burlap is buried; any left sticking out will act as a wick, drawing moisture away from the root ball.
- Tamp soil firmly before watering to ensure good contact between soil and roots.
- Water thoroughly and top up the soil level with additional soil.
- Plants may take years to recover from transplant shock.

Within 15 metres of overhead utility lines, plant only small-growing trees. Large trees like poplar, elm, ash and spruce will eventually grow into the

overhead line and will have to be severely pruned or removed. This type of pruning will shorten their lives, making them susceptible to insects and diseases, and at the very least, their natural form will be destroyed.

Pruning Notes

Pruning is as easy to do well as it is to do poorly. Applying a few basic pruning principles will improve plant health and shape, flower display and bark color. The time to prune and the techniques to use vary with the species.

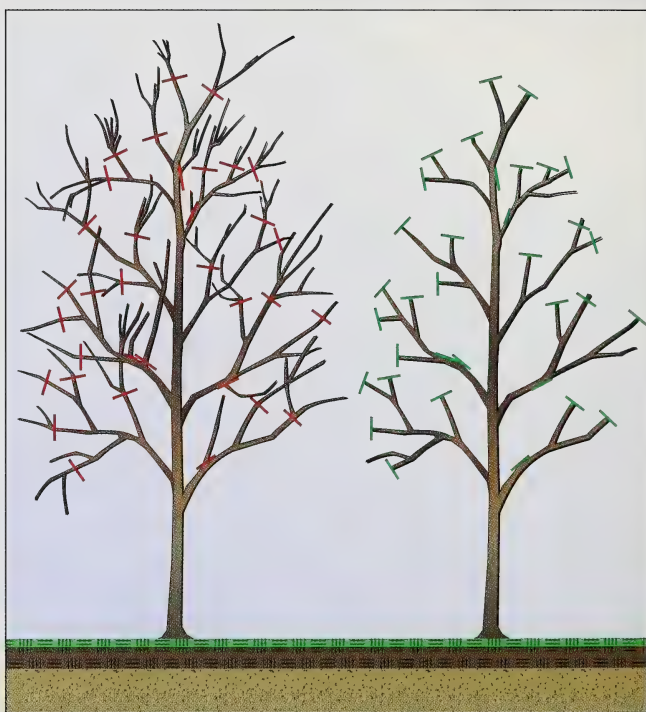


Figure 1. Careful pruning improves plant health and shape.



Basic Pruning Principles

1. Use the proper tool for the job and be sure it is sharp.
2. Visualize the eventual size, shape and height of the plant.
3. Removing diseased, broken or damaged wood may be enough.
4. Select the main stems of shrubs or scaffold branches on trees.
5. Remove weak crotches, crossed or rubbing branches, suckers and watersprouts.
6. Thin the crown to well spaced, strong branches or stems, secondary branches and laterals to allow for light and air movement into the crown.
7. When removing branches, cut back to the branch collar, the swelling at the base of the branch where it meets the stem or another larger branch. When heading back, cut back to a lateral bud growing in the direction you want the tree to grow. **Do not leave stubs.**
8. A general rule of thumb is to remove no more than 30 per cent of live wood from the tree or shrub at any one time. It is better to remove too little, rather than too much. Woody ornamentals can always be pruned again next year.

When to Prune

Pruning is done at two different times of the year in Alberta. Dormant season pruning makes the plant grow, while summer pruning will dwarf the growth.

Major pruning is best done the first part of March through to the end of April. Trees that bleed (birch, maple and walnut) are pruned when one third of the leaves are unfolding, which is usually from May through June. The threat of Dutch elm disease has prompted the endorsement of pruning elm trees from October 1 to March 31.

Pruning after mid-July will trigger plant growth (instead of winter bud setting), which threatens winter hardiness. Fall pruning leaves the cambium layer open to the extremes of winter, which can damage delicate plant tissue.

Prune spring and early summer flowering shrubs, like lilac, bridalwreath spirea, flowering plums and cherries, after they have finished flowering. These plants produce flowers on last year's growth, so pruning before they flower decreases the number of flowers. Summer and fall flowering shrubs bloom on the current season's wood, so they can be pruned while dormant in the spring.

Deciduous Trees

Proper annual pruning begun early in the life of a tree is less damaging than waiting until a tree is older. This early pruning will result in a strong tree with an attractive shape.

Select a leader, the main stem of the tree, and then remove any additional ones. Select vigorous side branches with strong crotches to serve as the main structure for tree.

Maintenance pruning of established trees consists mainly of the following:

- removal of dead, broken or diseased branches
- removal of one of a pair of crossed or rubbing branches
- removal of water sprouts growing on the trunk and main branches, and suckers growing from the trunk base or roots
- periodic thinning and heading back young branches to maintain a compact plant

Coniferous Evergreens

The removal of entire branches on evergreens creates unsightly gaps that will never fill in. The most commonly needed pruning on evergreens is the cutting of new growth to make the trees bushier or to redirect growth.

Leader removal does not make the tree bushier; instead, the tree simply produces two or three new leaders. These extra leaders are not strongly attached to the tree and can break away. Unfortunately, this breakage often occurs years after the multiple leaders form, leaving a disfigured tree.

Prune spruce late in the spring after new growth has elongated but before new needles have hardened off. This growth can be cut with hand pruners. Occasionally, spruce will become lopsided by growing faster on one side. This situation can be corrected by cutting back the vigorous side into one-year-old wood until the opposite side catches up. Repeat this step as many years as necessary until symmetry is restored. Take care that pruning cuts are not made into growth older than two years because cuts made into older wood will result in the removal of the growing points of that branch.

Pinch the new growth of pines with the fingers after the candles have elongated but before needles have opened out. If the growth is cut instead of pinched, the needle ends will turn brown. Whether pruning spruce, fir or pine, leave a minimum of 5 cm of new growth.



Side branches of spruce and pine are often removed from the ground up to a height of 1 to 2 m. This removal is done for grass mowing, but since grass often stops growing under these trees because of needle accumulation, it is a questionable practice. An alternative is to remove the grass from the base of the tree to 15 cm beyond the tips of the bottom branches, which will prevent lawn maintenance equipment from damaging these branches.

The growth of spreading junipers can be kept in check by an annual pruning. Be sure to cut into wood with needles on it.

Vines

Prune hops back at the ground in the fall and remove as they will come from the ground in the spring. Remove dead wood from Virginia creepers and head back to ensure branching. *Clematis* (*C.*) *ligustifolia* and *C. tangutica* grow from last year's wood; they require thinning and training. The removal of dead wood is often the only pruning hybrid clematis require.

Browning of Evergreens

Discoloration of evergreen leaves is commonly caused by environmental conditions, not necessarily by insects or diseases. Depending on the severity of damage and type of evergreen, portions of or the entire branch can turn yellow, brown, red-brown or reddish-purple. Some types of injury result in the death of entire plants or portions thereof.

The key to the correct diagnosis of evergreen browning is careful plant examination. Foliage color change is the most obvious symptom; however, examining roots, branches, trunks and the ground surrounding the trees may give clues as to the exact cause of the problem.

Here are descriptions of the major types of evergreen browning and suggestions for prevention and remedial care:

Autumn Needle Shed

The loss of old needles inside evergreen conifers is a natural process, although stress will intensify the needle drop. This drop is often blamed on disease or insects. The foliage throughout the interior portion of conifers

turns yellow, then brown and finally drops off. This drop is most pronounced in the fall and often coincides with leaf loss in deciduous trees.

Drought Damage

Drought-stressed trees gradually turn yellowish-green, then purple or light brown. Discoloration starts at the top and progresses downward, and moves from the tips of branches inward. Severely stressed trees will lose needles following the same pattern.

Drought stress can affect any evergreens when water supplies are severely limited and soil moisture is depleted. It may occur in shallow-rooted trees that have been well watered for a number of years and then neglected. Soil compaction, pavement and other obstructions may interfere with water penetration and increase stress. Drought stress predisposes trees to spider mite attacks.

Note:

No amount of water applied in the fall will reverse drought injury that occurred during the previous growing season. A thorough, deep soaking two or three times during the hot days of summer will ensure that plant material will go into winter in the best condition possible.

Winter Injury

Springtime needle discoloration on previously healthy evergreens is often a symptom of some form of winter injury. Winter damage has several symptoms, depending upon the type of evergreen and the severity of the damage. With cedar, leaf scales fade from green to light tan or reddish-brown. Needle tips of spruce and pine turn brown and become dry. Winter damage may occur on a few branches at the tree top only, on one side only facing prevailing winds or buildings, or over the entire tree. Severe winter injury may even cause the loss of most of the needles, and the plant can die.

Dry soils are more likely to predispose roots to damage than soils that contain a good moisture supply. Root injury may occur when the soil is dry, and the injury is often worse during winters when there is little snowfall. Winter root damage may not be noticed until the following summer when the plants suddenly turn brown and die. Young trees are often the hardest hit.



Reducing winter injury

Winter injury to evergreens can be minimized by using a few precautions:

- Avoid planting trees and shrubs near light-colored or reflective structures.
- Damage is usually reduced in sites protected from the wind, especially in the chinook zone of Southern Alberta.
- Do not apply nitrogen fertilizers to woody plant material between mid-July and September 15.
- Water evergreens during the first two weeks of October to ensure they have sufficient moisture in the root zone to prevent root damage. Repeat this watering early in the spring, once the ground thaws.
- Evergreens on the south and west side of buildings, especially under an overhang, should be well-watered in the fall because they are very susceptible to winter injury.
- Erect canvas, burlap or slatted screens on the south and west sides of exposed small evergreens to prevent desiccation (drying). This approach will shade the plants and prevent excessive moisture loss by the wind. Screens should be about one foot away from the plant material. Do not wrap trees and shrubs with burlap. Wrapping can cause plant damage through overheating.

Recommended Trees and Shrubs

The plants in the following charts are general recommendations for selections to grow under Alberta conditions.

The heights and spreads listed indicate the average that may be expected in most cultivated garden soil, assuming the plants are adequately watered, fertilized and cultivated, and are planted in a location appropriate to the plant's requirements. Many of the larger shrubs, in the 3 to 6 m height range, will make small trees when pruned and trained.

This publication is only a guide. Reputable nurseries may have many wonderful, hardy selections available and can give advice on the best plants for your area.



Recommended Trees and Shrubs












Common name	Botanical name	Height (m)	Spread (m)	Notes
Coniferous (Evergreen) Trees				
Douglas Fir				
Douglas Fir	<i>Pseudotsuga menziesii glauca</i>	12	5	
Fir				
Balsam Fir	<i>Abies balsamea</i>	10	4	
Siberian Fir	<i>Abies sibirica</i>	10	6	
White Fir	<i>Abies concolor</i>	8	5	
Larch				
Siberian Larch	<i>Larix sibirica</i>	12	5	
American Larch	<i>Larix laricina</i>	10	4	
Weeping Larch	<i>Larix decidua</i> 'Pendula'	2.5	2.5	
Pine				
Bristle-cone Pine	<i>Pinus aristata</i>	6	3	
Eastern White Pine	<i>Pinus strobus</i>	12	6	
Jack Pine	<i>Pinus banksiana</i>	12	5	
Limber Pine	<i>Pinus flexilis</i>	8	3	
Lodgepole Pine	<i>Pinus contorta latifolia</i>	12	3	
Ponderosa Pine	<i>Pinus ponderosa</i>	12	6	
Red Pine	<i>Pinus resinosa</i>	12	6	
Scots Pine	<i>Pinus sylvestris</i>	12	6	
Swiss Mountain Pine	<i>Pinus uncinata</i>	6	3	
Swiss Stone Pine	<i>Pinus cembra</i>	10	3	
White Bark Pine	<i>Pinus albicaulis</i>	10	3	
Spruce				
Blue Colorado Spruce	<i>Picea pungens</i> 'Glauca'	12	5	
Colorado Spruce	<i>Picea pungens</i>	12	5	

Common name	Botanical name	Height (m)	Spread (m)	Notes
Fat Albert Spruce	<i>Picea pungens</i> 'Fat Albert'	13	6	
Hoopsi Spruce	<i>Picea pungens</i> 'Hoopsii'	12	3	
Kosters Blue Spruce	<i>Picea pungens</i> 'Koster'	12	5	
Engelman Spruce	<i>Picea englemanni</i>	12	5	
Norway Spruce	<i>Picea abies</i>	15	8	✱
Serbian Spruce	<i>Picea omorika</i>	10	4	✱
White Spruce	<i>Picea glauca</i>	15	5	✱
Black Hills Spruce	<i>Picea glauca</i> 'Densata'	15	5	

Coniferous (Evergreen) Shrubs

Cedar, Arborvitae

Brandon Cedar	<i>Thuja occidentalis</i> 'Brandon'	6	2	✱ ✱ ✱
Emerald Green Cedar	<i>Thuja occidentalis</i> 'Smaragd'	6	2	✱ ✱ ✱
Holmstrup Cedar	<i>Thuja occidentalis</i> 'Holmstrupii'	6	2	✱ ✱ ✱
Little Champion Cedar	<i>Thuja occidentalis</i> 'Little Champion'	2	1	✱ ✱ ✱
Little Gem Cedar	<i>Thuja occidentalis pumila</i>	0.45	0.6	✱ ✱ ✱
Little Giant Cedar	<i>Thuja occidentalis</i> 'Little Giant'	0.6	0.6	✱ ✱
Techny Cedar	<i>Thuja occidentalis</i> 'Techny'	5	4	✱ ✱
Skybound Cedar	<i>Thuja occidentalis</i> 'Skybound'	6	2	✱ ✱ ✱

-  plant has ornamental flowers
-  requires sunny, well-drained location
-  requires winter protection
-  susceptible to fireblight
-  requires winter protection
-  plant has not had sufficient testing for a recommendation
-  needs special growing conditions
-  graduate from the Regional Woody Plant Test Program
-  only grow male plants
-  hardy in most of Alberta; borderline for chinook areas
-  shade tolerant

 plant attacked by the honeysuckle aphid

Common name	Botanical name	Height (m)	Spread (m)	Notes
Ware's Siberian Cedar	<i>Thuja occidentalis</i> 'Wareana'	3	2	 
Woodwards Globe Cedar	<i>Thuja occidentalis</i> 'Woodwardii'	1.5	1.5	  
Cypress				
Siberian Cypress	<i>Microbiota decussata</i>	0.2	2	 
Fir				
Dwarf Balsam Fir	<i>Abies balsamea</i> 'Nana'	0.6	0.3	
Coniferous Shrubs				
Juniper				
Blue Hetz Juniper	<i>Juniperus chinensis</i> 'Glauca Hetzii'	0.6	1.5	
Blue Pfitzer Juniper	<i>Juniperus chinensis</i> 'Pfitzerana Glauca'	0.7	2	
Gold Coast Juniper	<i>Juniperus chinensis</i> 'Gold Coast'	0.75	2	
Golden Pfitzer Juniper	<i>Juniperus chinensis</i> 'Aureo-Pfitzerana'	0.75	2	
Old Gold Juniper	<i>Juniperus chinensis</i> 'Old Gold'	0.7	2	
Common Juniper	<i>Juniperus communis</i>	0.6	2	
Andorra Juniper	<i>Juniperus horizontalis</i> 'Plumosa'	0.3	3	
Bar Harbor Juniper	<i>Juniperus horizontalis</i> 'Bar Harbor'	0.15	3	
Blue Carpet Juniper	<i>Juniperus horizontalis</i> 'Blue Carpet'	0.15	3	
Blue Chip Juniper	<i>Juniperus horizontalis</i> 'Blue Chip'	0.15	2	
Blue Rug Juniper	<i>Juniperus horizontalis</i> 'Wiltonii'	0.2	3	



Common name	Botanical name	Height (m)	Spread (m)	Notes
Compact Andorra Juniper	<i>Juniperus horizontalis</i> 'Plumosa Compacta'	0.25	3	
Dunvegan Blue Juniper	<i>Juniperus horizontalis</i> 'Dunvegan Blue'	0.2	2	
Hughes Juniper	<i>Juniperus horizontalis</i> 'Hughes'	0.3	3	
Prince of Wales Juniper	<i>Juniperus horizontalis</i> 'Prince of Wales'	0.15	3	
Wapiti Juniper	<i>Juniperus horizontalis</i> 'Wapitii'	0.3	3	
Savin Juniper	<i>Juniperus sabina</i>	1	2	
Arcadia Juniper	<i>Juniperus sabina</i> 'Arcadia'	0.6	2	
Blue Danube Juniper	<i>Juniperus sabina</i> 'Blue Danube'	0.6	2	
Broadmoor Juniper	<i>Juniperus sabina</i> 'Broadmoor'	0.3	2	
Buffalo Juniper	<i>Juniperus sabina</i> 'Buffalo'	0.3	2	
Calgary Carpet Juniper	<i>Juniperus sabina</i> 'Calgary Carpet'	0.6	2	
Hicks Juniper	<i>Juniperus sabina</i> 'Hicksii'	0.6	2	
Skandia Juniper	<i>Juniperus sabina</i> 'Skandia'	0.45	2	
Tamarix Juniper	<i>Juniperus sabina</i> 'Tamariscifolia'	0.45	2	



plant has ornamental flowers



susceptible to fireblight



needs special growing conditions



only grow male plants



shade tolerant



requires sunny, well-drained location



requires winter protection



plant has not had sufficient testing for a recommendation



graduate from the Regional Woody Plant Test Program





hardy in most of Alberta; borderline for chinook areas



plant attacked by the honeysuckle aphid


Common name	Botanical name	Height (m)	Spread (m)	Notes
Rocky Mountain Juniper	<i>Juniperus scopulorum</i>	3	1.5	
Blue Heaven Juniper	<i>Juniperus scopulorum</i> 'Blue Heaven'	3	1.5	
Cologreen Juniper	<i>Juniperus scopulorum</i> 'Cologreen'	3	1.5	☼
Gray Gleam Juniper	<i>Juniperus scopulorum</i> 'Gray Gleam'	3	1.5	
Medora Juniper	<i>Juniperus scopulorum</i> 'Medora'	3	1.5	
Moonglow Juniper	<i>Juniperus scopulorum</i> 'Moonglow'	3	1.5	☼
Skyrocket Juniper	<i>Juniperus scopulorum</i> 'Skyrocket'	3	1.5	
Tabletop Blue Juniper	<i>Juniperus scopulorum</i> 'Tabletop Blue'	1.5	1.5	☼
Tolleson's Weeping Juniper	<i>Juniperus scopulorum</i> 'Tolleson's Weeping'	3	1.5	
Winter Blue Juniper	<i>Juniperus scopulorum</i> 'Winter Blue'	0.8	2	☼
Witchita Blue Juniper	<i>Juniperus scopulorum</i> 'Witchita Blue'	3	1.5	
Blue Star Juniper	<i>Juniperus squamata</i> 'Blue Star'	0.3	1.5	☼
Pine				
Dwarf Mugo Pine	<i>Pinus mugo pumilo</i>	1	2	
Mugo Pine	<i>Pinus mugo mugo</i>	2	2	
Spruce				
Compact Blue Spruce	<i>Picea pungens</i> 'Glauca Compacta'	3	2	★
Montgomery Spruce	<i>Picea pungens</i> 'Montgomery'	3	2	



Common name	Botanical name	Height (m)	Spread (m)	Notes
Dwarf Alberta Spruce	<i>Picea glauca albertiana</i>	3	2	
Dwarf Norway Spruce	<i>Picea abies</i> 'Ohlendorffii'	1.5	2	
Nest Spruce	<i>Picea abies</i> 'Nidiformis'	1	1.5	

Broadleaved Evergreen Shrubs



Bearberry

Kinnikinnick	<i>Arctostaphylos uva-ursi</i>	0.15	2	
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Azaleas (check for selections available at local garden centres and nurseries)

Deciduous Trees

Alder

American Alder	<i>Alnus crispa</i>	3	3	
Speckled Alder	<i>Alnus rugosa</i>	5	3	

Ash

Black Ash	<i>Fraxinus nigra</i>	10	5	♂
Fallgold Black Ash	<i>Fraxinus nigra</i> 'Fallgold'	10	5	
Mancana Ash	<i>Fraxinus mandschurica</i> 'Mancana'	8	5	
Manchurian Ash	<i>Fraxinus mandshurica</i>	8	5	
Green Ash	<i>Fraxinus pennsylvanica lanceolata</i>	12	8	



plant has ornamental flowers



susceptible to fireblight



needs special growing conditions



only grow male plants



shade tolerant



requires sunny, well-drained location



requires winter protection



plant has not had sufficient testing for a recommendation



graduate from the Regional Woody Plant Test Program



hardy in most of Alberta; borderline for chinook areas



plant attacked by the honeysuckle aphid

Common name	Botanical name	Height (m)	Spread (m)	Notes
Marshall's Seedless Ash	<i>Fraxinus pennsylvanica</i> 'Marshall's Seedless'	12	8	
Patmore Ash	<i>Fraxinus pennsylvanica</i> 'Patmore'	12	8	
Prairie Spire Ash	<i>Fraxinus pennsylvanica</i> 'Prairie Spire'	10	5	
Summit Ash	<i>Fraxinus pennsylvanica</i> 'Summit'	12	8	
Birch				
Chinese Paper Birch	<i>Betula albo-sinensis</i>	8	5	
Paper Birch	<i>Betula papyrifera</i>	12	6	
Chickadee Birch	<i>Betula papyrifera</i> 'Chickadee'	12	6	
River Birch	<i>Betula nigra</i>	5	4	
Water Birch	<i>Betula occidentalis</i>	6	5	
European Birch	<i>Betula pendula</i>	12	6	
Cutleaf Weeping Birch	<i>Betula pendula</i> 'Gracilis'	15	8	
Weeping Birch	<i>Betula pendula</i> 'Tristis'	12	6	
Young's Weeping Birch	<i>Betula pendula</i> 'Youngii'	5	10	
Buckeye, Horsechestnut				
Ohio Buckeye	<i>Aesculus glabra</i>	8	5	
Caragana				
Sutherland Caragana	<i>Caragana arborescens</i> 'Sutherland'	5	1	
Cherry, Plum				
Amur Cherry	<i>Prunus maackii</i>	12	10	 
Black Cherry	<i>Prunus serotina</i>	6	5	 
Chokecherry	<i>Prunus virginiana melanocarpa</i>	5	3	



Common name	Botanical name	Height (m)	Spread (m)	Notes
Dropmore Mayday	<i>Prunus padus</i> 'Dropmore'	10	10	
Mayday Tree	<i>Prunus padus commutata</i>	10	10	
Muckle Plum	<i>Prunus x nigrella</i> 'Muckle'	4	3	
Pin Cherry	<i>Prunus pensylvanica</i>	5	3	
Schubert Chokecherry	<i>Prunus virginiana</i> 'Schubert'	5	5	
Wild Plum	<i>Prunus americana</i>	5	4	
Elm *				
American Elm	<i>Ulmus americana</i>	20	15	
Brandon Elm	<i>Ulmus americana</i> 'Brandon'	15	10	
Manchurian Elm	<i>Ulmus pumila</i>	10	8	
Jacan Elm	<i>Ulmus davidiana japonica</i> 'Jacan'	12	10	
Japanese Elm	<i>Ulmus davidiana japonica</i>	12	10	
Hawthorn				
Arnold Hawthorn	<i>Crateagus arnoldiana</i>	4	3	
Chocolate Hawthorn	<i>Crategus erythropoda</i>	5	3	
Fleshy Hawthorn	<i>Crategus succulenta</i>	5	3	
Snowbird Hawthorn	<i>Crategus x mordenensis</i> 'Snowbird'	3	2	
Toba Hawthorn	<i>Crategus x mordenensis</i> 'Toba'	3	2	

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- shade tolerant
- hardy in most of Alberta; borderline for chinook areas

plant attacked by the honeysuckle aphid
 * it is illegal to import elms into Alberta from areas where disease occurs

Common name	Botanical name	Height (m)	Spread (m)	Notes
Lilac				
Tree Lilac	<i>Salix reticulata</i> 'Ivory Silk'	5	5	
Linden/Basswood				
American Linden	<i>Tilia americana</i>	15	8	 
Dropmore Linden	<i>Tilia x flavescens</i> 'Dropmore'	12	6	 
European Basswood	<i>Tilia cordata</i>	12	6	 
Morden Linden	<i>Tilia cordata</i> 'Morden'	10	5	 
Maple				
Amur Maple	<i>Acer tataricum ginnala</i>	4	4	
Baron Manitoba Maple	<i>Acer negundo</i> 'Baron'	14	12	
Manitoba Maple	<i>Acer negundo</i>	14	12	
Silver Maple	<i>Acer saccharinum</i>	20	15	
Tartarian Maple	<i>Acer tataricum</i>	6	5	
Mountain Ash				
American Mountain Ash	<i>Sorbus americana</i>	10	6	 
European Mountain Ash	<i>Sorbus aucuparia</i>	8	6	  
Green's Mountain Ash	<i>Sorbus scopulina</i>	5	4	 
Pyramidal Mountain Ash	<i>Sorbus aucuparia</i> 'Fastigiata'	8	4	  
Russian Mountain Ash	<i>Sorbus aucuparia</i> 'Rossica'	8	4	  
Showy Mountain Ash	<i>Sorbus decora</i>	6	4	 
Oak				
Bur Oak	<i>Quercus macrocarpa</i>	10	10	
Pear				
Ussurian Pear	<i>Pyrus ussuriensis</i>	8	5	  
Poplar, Aspen, Cottonwood				
Assiniboine Poplar	<i>Populus x 'Assiniboine'</i>	20	15	




Common name	Botanical name	Height (m)	Spread (m)	Notes
Balsam Poplar	<i>Populus balsamifera</i>	25	15	♂
Brooks #4 or #6 Poplar	<i>Populus</i> x 'Brooks #4' or '#6'	20	15	
Brown Twig Poplar	<i>Populus tristis</i>	20	15	♂
Griffin Poplar	<i>Populus</i> x 'Griffin'	10	4	☼
Northwest Poplar	<i>Populus</i> x <i>jackii</i> 'Northwest'	20	15	
Plains Cottonwood	<i>Populus deltoides</i>	30	20	♂
Prairie Spire Poplar	<i>Populus</i> x <i>canescens</i> 'Prairie Spire'	10	2	
Swedish Columnar Aspen	<i>Populus tremula</i> 'Erecta'	12	1.5	✱
Tower Poplar	<i>Populus</i> x <i>canescens</i> 'Tower'	10	1.5	✱
Trembling Aspen	<i>Populus tremuloides</i>	10	6	♂ ✱
Russian Olive				
Russian Olive	<i>Elaeagnus angustifolia</i>	6	6	
Saskatoon				
Saskatoon	<i>Amelanchier alnifolia</i>	3	2	✿
Alt glow Saskatoon	<i>Amelanchier alnifolia</i> 'Alt glow'	5	2	✿
Walnut, Butternut				
Black Walnut	<i>Juglans nigra</i>	15	15	☼
Butternut	<i>Juglans cinerea</i>	12	12	☼
Manchurian Walnut	<i>Juglans mandshurica</i>	10	10	☼

- | | | |
|------------------------------------|---|---|
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| ☼ susceptible to fireblight | ☼ requires winter protection | |
| ✱ needs special growing conditions | ✿ plant has not had sufficient testing for a recommendation | |
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| ✱ shade tolerant | ☼ hardy in most of Alberta; borderline for chinook areas | |

Common name	Botanical name	Height (m)	Spread (m)	Notes
Willow				
Acute Leaf Willow	<i>Salix acutifolia</i>	15	15	
Coyote Willow	<i>Salix exigua</i>	5	5	☼
French Pussy Willow	<i>Salix caprea</i>	5	3	
Golden Willow	<i>Salix alba vitellina</i>	15	15	☼
Laurel-leaf Willow	<i>Salix pentandra</i>	15	15	
Prairie Cascade Willow	<i>Salix</i> x 'Prairie Cascade'	5	5	✱ ☼
Pussy Willow	<i>Salix discolor</i>	4	3	
Red-barked White Willow	<i>Salix alba chermesina</i>	12	10	☼
Siberian Silver Willow	<i>Salix alba sericea</i>	12	10	☼
Deciduous Shrubs				
Birch				
Dwarf Birch	<i>Betula glandulosa</i>	2	2	☼
Swamp Birch	<i>Betula pumila glandulifera</i>	4	3	☼
Broom				
Golden Broom	<i>Cytisus ratisbonensis</i>	1	1	✿ ☼
Purple Broom	<i>Cytisus purpureus</i>	0.45	1	✿ ☼
Rock Garden Broom	<i>Cytisus decumbens</i>	0.5	1	✿ ☼
Buffaloberry				
Russet Buffaloberry	<i>Shepherdia canadensis</i>	1	1	
Silver Buffaloberry	<i>Shepherdia argentea</i>	4	3	
Burning Bush				
Winged Burning Bush	<i>Euonymus alata</i>	2	2	☼
Dwarf Winged Burning Bush	<i>Euonymus alata</i> 'Compacta'	1	1	☼
Maack's Burning Bush	<i>Euonymus maackii</i>	3	3	☼
Spindle Tree	<i>Euonymus europaea</i>	2	2	☼



















Common name	Botanical name	Height (m)	Spread (m)	Notes
Dwarf Narrow-leaved Burning Bush	<i>Euonymus nana</i>	0.6	1	
Turkestan Burning Bush	<i>Euonymus nana</i> 'Turkestanica'	1	1	

Caragana

Common Caragana	<i>Caragana arborescens</i>	3	3	
Fern-leaved Caragana	<i>Caragana arborescens</i> 'Lorbergii'	3	2	
Golden Caragana	<i>Caragana arborescens</i> 'Golden'	3	3	
Walker Weeping Caragana	<i>Caragana arborescens</i> 'Walker'	0.5	3	
Weeping Caragana	<i>Caragana arborescens</i> 'Pendula'	1	2	
Globe Caragana	<i>Caragana frutex</i> 'Globosa'	1	1	
Pygmy Caragana	<i>Caragana pygmaea</i>	1	2	
Shagspine Caragana	<i>Caragana jubata</i>	1	1	
Tidy Caragana	<i>Caragana microphylla</i> 'Tidy'	2	2	

Cherry, Plum, Almond

Chinese Bush Cherry	<i>Prunus japonica</i>	1	1	
Double-flowering Plum	<i>Prunus triloba</i> 'Multiplex'	2	2	
Flowering Plum	<i>Prunus triloba</i>	2	2	 
Mongolian Cherry	<i>Prunus fruticosa</i>	1	1	

- | | | |
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Common name	Botanical name	Height (m)	Spread (m)	Notes
Nanking Cherry	<i>Prunus tomentosa</i>	2	2	
Purple-leaved Sandcherry	<i>Prunus x cistena</i>	1.5	1.5	 
Russian Almond	<i>Prunus tenella</i>	1	1	
Sandcherry	<i>Prunus pumila</i>	0.3	1.5	 
Western Sandcherry	<i>Prunus besseyi</i>	0.7	2	 
Chokeberry				
Black Chokeberry	<i>Aronia melanocarpa</i>	2	2	
Cotoneaster				
Brickberry Cotoneaster	<i>Cotoneaster tomentosus</i>	2	2	 
European Cotoneaster	<i>Cotoneaster integerrimus</i>	2	2	 
Hedge Cotoneaster	<i>Cotoneaster lucidus</i>	2	2	 
Peking Cotoneaster	<i>Cotoneaster acutifolius</i>	2	2	 
Red Bead Cotoneaster	<i>Cotoneaster submultiflorus</i>	3	3	 
Currant				
Albol Currant	<i>Ribes missouriense</i> 'Albol'	2	2.5	 
Alpine Currant	<i>Ribes alpinum</i>	1	1.5	
Golden Flowered Currant	<i>Ribes aureum</i>	2	2	 
Small Leaved Alpine Currant	<i>Ribes alpinum microphyllum</i>	1	1.5	 
Daphne				
Carol Mackie Daphne	<i>Daphne x burkwoodii</i> 'Carol Mackie'	0.9	0.9	
February Daphne	<i>Daphne mezereum</i>	0.6	0.5	 
Rose Daphne	<i>Daphne cneorum</i>	0.3	0.7	 
Dogwood				
Tartarian Dogwood	<i>Cornus alba</i>	1	1.5	
Gold-leaved Dogwood	<i>Cornus alba</i> 'Spaethii'	1	1	 



Common name	Botanical name	Height (m)	Spread (m)	Notes
Mottled Dogwood	<i>Cornus alba</i> 'Gouchaultii'	1	1	
Purple Twig Dogwood	<i>Cornus alba</i> 'Kesselringii'	1	1	
Siberian Coral Dogwood	<i>Cornus alba</i> 'Sibirica'	1	1	
Silver-leaved Dogwood	<i>Cornus alba</i> 'Argenteo-marginata'	1	1	
Variegated Siberian Dogwood	<i>Cornus alba</i> 'Sibirica Variegata'	1	1	
Variegated Dogwood	<i>Cornus alba</i> 'Elegantissima'	1	1	
Red Osier Dogwood	<i>Cornus stolonifera</i>	2	3	
Golden Twig Dogwood	<i>Cornus sericea</i> 'Flaviramea'	1.5	2	
Low Dogwood	<i>Cornus sericea</i> 'Kelseyi'	1	1	
White Gold Dogwood	<i>Cornus sericea</i> 'White Gold'	0.7	1	
Elder				
American Elder	<i>Sambucus canadensis</i>	2	2	
Golden Elder	<i>Sambucus canadensis</i> 'Aurea'	3	2	
European Elder	<i>Sambucus racemosa</i>	4	3	
Golden European Elder	<i>Sambucus racemosa</i> 'Aurea'	3	2	
Golden Plume Elder	<i>Sambucus racemosa</i> 'Plumosa Aurea'	2	2	
Redman Elder	<i>Sambucus racemosa</i> 'Redman'	3	2	











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Common name	Botanical name	Height (m)	Spread (m)	Notes
Sutherland Golden Elder	<i>Sambucus racemosa</i> 'Sutherland Golden'	2.5	2	
False Spirea				
Aurora False Spirea	<i>Sorbaria</i> x 'Aurora'	1.5	2	
Ural False Spirea	<i>Sorbaria sorbifolia</i>	2	3	
Forsythia				
Floraliz Forsythia	<i>Forsythia ovata</i> 'Floraliz'	1	1	
Korean Forsythia	<i>Forsythia ovata</i>	1	1	 
Northern Gold Forsythia	<i>Forsythia</i> x 'Northern Gold'	1	1	 
Hazelnut				
American Hazelnut	<i>Corylus americana</i>	2	2	
Beaked Hazelnut	<i>Corylus cornuta</i>	2	2	
European Hazelnut	<i>Corylus avellana</i>	2	1	
Honeysuckle				
Albert Regal Honeysuckle	<i>Lonicera spinosa</i> 'Alberti'	0.6	1.5	
Arnold Red Honeysuckle	<i>Lonicera tatarica</i> 'Arnold Red'	3	2.5	
Beavermore Honeysuckle	<i>Lonicera tatarica</i> 'Beavermore'	2.5	2	  
Carleton Honeysuckle	<i>Lonicera tatarica</i> 'Carleton'	2.5	2	 
Frosty Honeysuckle	<i>Lonicera tatarica</i> 'Frosty'	2.5	2	 
Tartarian Honeysuckle	<i>Lonicera tatarica</i>	2.5	2	 
Dropmore Honeysuckle	<i>Lonicera</i> x <i>bella</i> 'Dropmore'	2.5	2	 
Emerald Mound Honeysuckle	<i>Lonicera xylosteum</i> 'Emerald Mound'	0.5	1	 
Miniglobe Honeysuckle	<i>Lonicera xyleostoides nana</i> 'Miniglobe'	0.5	1	 



Common name	Botanical name	Height (m)	Spread (m)	Notes
Clavey's Dwarf Honeysuckle	<i>Lonicera xyleostoides</i> 'Clavey's Dwarf'	1	1.5	
George Bugnet Honeysuckle	<i>Lonicera caerulea edulis</i> 'George Bugnet'	1	1	 
Sakhalin Honeysuckle	<i>Lonicera maximiwoczii sachalinensis</i>	1.5	1.5	 
Sweet Berry Honeysuckle	<i>Lonicera caerulea edulis</i>	1.5	1.5	
Twinberry Honeysuckle	<i>Lonicera involucrata</i>	2	1.5	
Zabel's Honeysuckle	<i>Lonicera korolkowii</i> 'Zabelii'	2	2	 
Hydrangea				
Annabelle Hydrangea	<i>Hydrangea arborescens</i> 'Annabelle'	1	1	 
Pee Gee Hydrangea	<i>Hydrangea. paniculata</i> 'Grandiflora'	1	1	  
Praecox Hydrangea	<i>Hydrangea paniculata</i> 'Praecox'	1	1	  
Snowhills Hydrangea	<i>Hydrangea arborescens</i> 'Grandiflora'	0.75	1	  
Labrador Tea				
Labrador Tea	<i>Ledum groenlandicum</i>	0.2	1	


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Common name	Botanical name	Height (m)	Spread (m)	Notes
Lilac				
Assessippi Lilac	<i>Syringa x hyacinthiflora</i> 'Assessippi'	3	2.5	
Pocohontas Lilac	<i>Syringa x hyacinthiflora</i> 'Pocohontas'	3	2.5	 
Coral Lilac	<i>Syringa x prestoniae</i> 'Coral'	3	2.5	
Donald Wyman Lilac	<i>Syringa x prestoniae</i> 'Donald Wyman'	3	2.5	
Hiawatha Lilac	<i>Syringa x prestoniae</i> 'Hiawatha'	3	2.5	 
James McFarlane Lilac	<i>Syringa x prestoniae</i> 'James McFarlane'	3	2.5	 
Minuet Lilac	<i>Syringa x prestoniae</i> 'Minuet'	3	2.5	 
Miss Canada Lilac	<i>Syringa x prestoniae</i> 'Miss Canada'	3	2.5	
Common Lilac	<i>Syringa vulgaris</i>	3	2.5	
Belle de Nancy Lilac	<i>Syringa vulgaris</i> 'Belle de Nancy'	3	2.5	
Charles Joy Lilac	<i>Syringa vulgaris</i> 'Charles Joly'	3	2.5	
Ellen Willmott Lilac	<i>Syringa vulgaris</i> 'Ellen Willmott'	3	2.5	 
Katherine Havemeyer Lilac	<i>Syringa vulgaris</i> 'Katharine Havemeyer'	3	2.5	 
Ludwig Spaeth Lilac	<i>Syringa vulgaris</i> 'Ludwig Spaeth'	3	2.5	 
Madame Lemoine Lilac	<i>Syringa vulgaris</i> 'Madame Lemoine'	3	2.5	 
President Grevy Lilac	<i>Syringa vulgaris</i> 'President Grevy'	3	2.5	



Common name	Botanical name	Height (m)	Spread (m)	Notes
President Lincoln Lilac	<i>Syringa vulgaris</i> 'President Lincoln'	3.5	2.5	 
Primrose Lilac	<i>Syringa vulgaris</i> 'Primrose'	3	2.5	 
Souvenir de Louis Spaeth Lilac	<i>Syringa vulgaris</i> 'Souvenir de Louis Spaeth'	3	2.5	 
Dwarf Korean Lilac	<i>Syringa meyeri</i> 'Palabin'	2	2	 
Late Lilac	<i>Syringa villosa</i>	3	2.5	
Miss Kim Lilac	<i>Syringa patula</i> 'Miss Kim'	3	2	
Persian Lilac	<i>Syringa x persica</i>	2	2	 
Royalty Lilac	<i>Syringa x josiflexa</i> 'Royalty'	3	2.5	 
Rouen Lilac	<i>Syringa x chinensis</i>	2	2	
Mockorange				
Audrey Mockorange	<i>Philadelphus x 'Audrey'</i>	1.5	1.5	  
Galahad Mockorange	<i>Philadelphus x 'Galahad'</i>	1.5	1.5	  
Minnesota Snowflake Mockorange	<i>Philadelphus x 'Minnesota Snowflake'</i>	1.5	1	  
Snowbelle Mockorange	<i>Philadelphus x 'Snowbelle'</i>	1.5	1.5	  
Waterton Mockorange	<i>Philadelphus lewisii</i> 'Waterton'	1.5	1.5	 
Ninebark				
Common Ninebark	<i>Physocarpus opulifolius</i>	2.5	2	


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 shade tolerant

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



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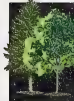
Common name	Botanical name	Height (m)	Spread (m)	Notes
Dart's Gold Ninebark	<i>Physocarpus opulifolius</i> 'Dart's Gold'	1	1	 
Dwarf Ninebark	<i>Physocarpus opulifolius</i> 'Nanus'	1	1	 
Golden Ninebark	<i>Physocarpus opulifolius</i> 'Luteus'	2	2	
Panax				
Spiny Panax	<i>Acanthopanax sessiliflorus</i>	2	2	
Potentilla				
Dahurian Potentilla	<i>Potentilla davurica</i>	0.8	0.8	 
Sutter's Gold Potentilla	<i>Potentilla davurica</i> 'Sutter's Gold'	0.8	0.8	 
Abbotswood Potentilla	<i>Potentilla fruticosa</i> 'Abbotswood'	0.7	0.8	
Coronation Triumph Potentilla	<i>Potentilla fruticosa</i> 'Coronation Triumph'	1	1	
Gold Finger Potentilla	<i>Potentilla fruticosa</i> 'Goldfinger'	1	1	 
Goldstar Potentilla	<i>Potentilla fruticosa</i> 'Goldstar'	1	1	
Jackman's Potentilla	<i>Potentilla fruticosa</i> 'Jackmanii'	1	1	
Katherine Dykes Potentilla	<i>Potentilla fruticosa</i> 'Kathrine Dykes'	1	1	
Longacre Potentilla	<i>Potentilla fruticosa</i> 'Longacre'	0.7	0.7	
Moonlight Potentilla	<i>Potentilla fruticosa</i> 'Moonlight'	1	1	
Primrose Beauty Potentilla	<i>Potentilla fruticosa</i> 'Primrose Beauty'	1	1	 
Red Ace Potentilla	<i>Potentilla fruticosa</i> 'Red Ace'	.75	1	
Snowbird Potentilla	<i>Potentilla fruticosa</i> 'Snowbird'	0.7	0.7	 



Common name	Botanical name	Height (m)	Spread (m)	Notes
Snowflake Potentilla	<i>Potentilla fruticosa</i> 'Snowflake'	0.7	0.7	 
Tangerine Potentilla	<i>Potentilla fruticosa</i> 'Tangerine'	1	1	
Yellowbird Potentilla	<i>Potentilla fruticosa</i> 'Yellowbird'	0.7	0.7	 
Gold Drop Potentilla	<i>Potentilla parvifolia</i> 'Ferreri'	0.6	0.6	
Wineleaf Potentilla	<i>Potentilla tridentata</i>	0.15	1	 
Prinsepia				
Cherry Prinsepia	<i>Prinsepia sinensis</i>	2	1.5	
Salt Tree				
Siberian Salt Tree	<i>Halimodendron halodendron</i>	2	2	
Sea Buckthorn				
Sea Buckthorn	<i>Hippophae rhamnoides</i>	3	3	
Snowberry				
Snowberry	<i>Symphoricarpos albus</i>	1	1	
Wolfberry	<i>Symphoricarpos occidentalis</i>	1	1	
Spirea				
Anthony Waterer Spirea	<i>Spiraea x bumalda</i> 'Anthony Waterer'	.06	1	 
Billiard Spirea	<i>Spiraea x billardii</i>	2	2	 

- | | | |
|--|---|---|
|  plant has ornamental flowers |  requires sunny, well-drained location |  plant attacked by the honeysuckle aphid |
|  susceptible to fireblight |  requires winter protection | |
|  needs special growing conditions |  plant has not had sufficient testing for a recommendation | |
|  only grow male plants |  graduate from the Regional Woody Plant Test Program | |
|  shade tolerant |  hardy in most of Alberta; borderline for chinook areas | |











Common name	Botanical name	Height (m)	Spread (m)	Notes
Bridalwreath Spirea	<i>Spirea</i> x 'Vanhouttei'	1.5	1.5	 
Crispa Spirea	<i>Spirea</i> x <i>bumalda</i> 'Crispa'	0.5	1.5	  
Fairy Queen Spirea	<i>Spirea</i> x 'Fairy Queen'	1	1	  
Froebel's Spirea	<i>Spirea</i> x <i>bumalda</i> 'Froebelli'	0.6	1	 
Garland Spirea	<i>Spirea</i> x <i>arguta</i>	1.5	1.5	 
Goldflame Spirea	<i>Spirea</i> x <i>bumalda</i> 'Goldflame'	0.6	1	  
Goldmound Spirea	<i>Spirea japonica</i> 'Goldmound'	1	1	 
Halward's Silver Spirea	<i>Spirea nipponica</i> 'Halward Silver'	2	2	 
Korean Spirea	<i>Spirea trichocarpa</i>	2	2	 
Little Princess Spirea	<i>Spirea japonica</i> 'Little Princess'	0.4	0.4	 
Shirobana Spirea	<i>Spirea japonica</i> 'Shirobana'	0.6	0.6	 
Snowwhite Spirea	<i>Spirea</i> x 'Snowwhite'	1.5	1.5	  
Three-lobed Spirea	<i>Spirea trilobata</i>	1	1	 
Sumac				
Cutleaf Staghorn Sumac	<i>Rhus typhina lacinata</i>	3	3	
Lemonade Sumac	<i>Rhus trilobata</i>	1	1	
Smooth Sumac	<i>Rhus glabra</i>	3	4	
Staghorn Sumac	<i>Rhus typhina</i>	3	3	
Tamarisk				
Amur Tamarisk	<i>Tamarix ramosissima</i>	3	3	
Viburnum, Cranberry				
American Highbush Cranberry	<i>Viburnum trilobum</i>	3	2	
Alfredo Cranberry	<i>Viburnum trilobum</i> 'Alfredo'	2	2	
Dwarf Highbush Cranberry	<i>Viburnum trilobum</i> 'Compactum'	1	1	



Common name	Botanical name	Height (m)	Spread (m)	Notes
Arrowwood	<i>Viburnum dentatum</i>	2	2	
European Cranberry	<i>Viburnum opulus</i>	2	2	
Dwarf European Cranberry	<i>Viburnum opulus</i> 'Nanum'	1	1	
Snowball Cranberry	<i>Viburnum opulus</i> 'Roseum'	2	2	
Nannyberry	<i>Viburnum lentago</i>	4	3	
Wayfaring Tree	<i>Viburnum lantana</i>	3	2	
Weigela				
Centennial Weigela	<i>Weigela</i> x 'Centennial'	2	2	
Minuet Weigela	<i>Weigela florida</i> 'Minuet'	0.6	0.9	
Pink Princess Weigela	<i>Weigela florida</i> 'Pink Princess'	2	2	
Willow				
Blue Fox Willow	<i>Salix brachycarpa</i> 'Blue Fox'	2	1.5	
Dwarf Basket Willow	<i>Salix purpurea nana</i>	1	1	
Polar Bear Willow	<i>Salix silicicola</i> 'Polar Bear'	3	1	
Wolf Willow	<i>Elaeagnus commutate</i>	2	2	
Woolly Willow	<i>Salix lantana</i>	0.5	1	
Woadwaxen, Greenwood				
Vancouver Gold Greenwood	<i>Genista pilosa</i> 'Vancouver Gold'	0.1	1	
Dyer's Greenwood	<i>Genista tinctoria</i>	0.6	1	

- | | | |
|----------------------------------|---|---|
| plant has ornamental flowers | requires sunny, well-drained location | plant attacked by the honeysuckle aphid |
| susceptible to fireblight | requires winter protection | |
| needs special growing conditions | plant has not had sufficient testing for a recommendation | |
| only grow male plants | graduate from the Regional Woody Plant Test Program | |
| shade tolerant | hardy in most of Alberta; borderline for chinook areas | |

Common name	Botanical name	Height (m)	Spread (m)	Notes
Lydia Greenwood	<i>Genista tinctoria</i> 'Lydia'	0.6	1	  
Climbers				
Bittersweet				
Bittersweet	<i>Celastris scandens</i>	2		
Clematis				
Golden Clematis	<i>Clematis tangutica</i>	3		
Jackmanii Clematis	<i>Clematis</i> x 'Jackmanii'	3		 
Hagely Hybrid Clematis	<i>Clematis</i> x 'Hagely'	3		 
Ville de Lyon Clematis	<i>Clematis</i> x 'Ville de Lyon'	3		 
Grape				
Riverbank Grape	<i>Vitis riparia</i>			
Honeysuckle				
Dropmore Scarlet Trumpet Honeysuckle	<i>Lonicera</i> x <i>brownii</i> 'Dropmore Scarlet Trumpet'	3		
Hops				
Common Hops	<i>Humulus lupulus</i>	6		
Virginia Creeper				
Engelman's Virginia Creeper (self clinging)	<i>Parthenocissus quinquefolia</i> 'Engelmannii'	10		 
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	10		 

-  plant has ornamental flowers
-  susceptible to fireblight
-  needs special growing conditions
-  only grow male plants
-  shade tolerant
-  requires sunny, well-drained location
-  requires winter protection
-  plant has not had sufficient testing for a recommendation
-  graduate from the Regional Woody Plant Test Program
-  hardy in most of Alberta; borderline for chinook areas

 plant attacked by the honeysuckle aphid



Height Selector Chart

Vines and Climbers

Bittersweet

Golden Clematis, Jackmanii Clematis, Hagely Hybrid Clematis,
Ville de Lyon Clematis

Riverbank Grape

Dropmore Scarlet Trumpet Honeysuckle

Common Hops

Engelmann's Virginia Creeper (self clinging), Virginia Creeper

Climbing Roses

Ground Covers – up to 30 cm

Siberian Cypress

Andorra Juniper, Bar Harbor Juniper, Blue Carpet Juniper,
Blue Chip Juniper, Blue Rug Juniper, Compact Andorra Juniper,
Dunvegan Blue Juniper, Hughes Juniper, Prince of Wales Juniper,
Wapiti Juniper, Broadmoor Juniper, Buffalo Juniper, Blue Star Juniper

Kinnikinnick

Sandcherry

Rose Daphne

Labrador Tea

Wineleaf Potentilla

Vancouver Gold Greenwood

Dwarf Shrubs – up to 1 m

Little Gem Cedar, Little Giant Cedar

Dwarf Balsam Fir

Blue Hetz Juniper, Blue Pfitzer Juniper, Gold Coast Juniper,
Golden Pfitzer Juniper, Old Gold Juniper, Savin Juniper, Arcadia Juniper,
Blue Danube Juniper, Calgary Carpet Juniper, Hicks Juniper,
Skandia Juniper, Tamarix Juniper, Winter Blue Juniper, Common Juniper

Dwarf Mugo Pine

Nest Spruce

Golden Broom, Purple Broom, Rock Garden Broom

Russet Buffaloberry

Dwarf Winged Burning Bush, Dwarf Narrow-leaved Burning Bush,
Turkestan Burning Bush

Walker Weeping Caragana, Weeping Caragana, Globe Caragana,
Pygmy Caragana, Shagspine Caragana

Chinese Bush Cherry, Mongolian Cherry, Russian Almond,
Western Sandcherry

Alpine Currant, Small-leaved Alpine Currant

Carol Mackie Daphne, February Daphne

Tartarian Dogwood, Gold-leaved Dogwood, Mottled Dogwood,
Purple Twig Dogwood, Siberian Coral Dogwood,
Silver-leaved Dogwood, Variegated Siberian Dogwood,
Variegated Dogwood, Red Osier Dogwood, Golden Twig Dogwood,
Low Dogwood, White Gold Dogwood

Floraliz Forsythia, Korean Forsythia, Northern Gold Forsythia

Albert Regal Honeysuckle, Emerald Mound Honeysuckle,
Miniglobe Honeysuckle, Clavey's Dwarf Honeysuckle,
George Bugnet Honeysuckle

Annabelle Hydrangea, Pee Gee Hydrangea, Praecox Hydrangea,
Snowhills Hydrangea

Dart's Gold Ninebark, Dwarf Ninebark

Potentilla

Snowberry, Wolfberry



Anthony Waterer Spirea, Bridalwreath Spirea, Crispa Spirea,
Fairy Queen Spirea, Frobel's Spirea, Goldflame Spirea,
Goldmound Spirea, Little Princess Spirea, Shirobana Spirea,
Snowwhite Spirea, Three-lobed Spirea

Lemonade Sumac

Dwarf Highbush Cranberry, Dwarf European Cranberry

Minuet Weigela

Dwarf Basket Willow, Woolly Willow

Dyer's Greenwood, Lydia Greenwood

Small Shrubs – 1 to 2 m

Little Champion Cedar, Woodward's Globe Cedar

Tabletop Blue Juniper

Mugo Pine

Dwarf Norway Spruce

Dwarf Birch

Winged Burning Bush, Spindle Tree

Tidy Caragana

Double-flowering Plum, Flowering Plum, Nanking Cherry,
Purple-leaved Sandcherry

Black Chokeberry

Brickberry Cotoneaster, European Cotoneaster, Hedge Cotoneaster,
Peking Cotoneaster

Albol Currant, Golden Flowered Currant

American Elder, Golden Plume Elder

Aurora False Spirea, Ural False Spirea

American Hazelnut, Beaked Hazelnut, European Hazelnut

Sakhalin Honeysuckle, Sweet Berry Honeysuckle,
Twinberry Honeysuckle, Zabel's Honeysuckle

Dwarf Korean Lilac, Persian Lilac, Rouen Lilac

Audrey Mockorange, Galahad Mockorange, Minnesota Snowflake
Mockorange, Snowbelle Mockorange, Waterton Mockorange

Golden Ninebark

Spiny Panax

Cherry Prinsepia

Siberian Salt Tree

Billiard Spirea, Garland Spirea, Halward's Silver Spirea, Korean Spirea

Alfredo Cranberry, Arrowwood, European Cranberry,
Snowball Cranberry

Centennial Weigela, Pink Princess Weigela

Blue Fox Willow

Medium Shrubs – 2 to 3 m

Weeping Larch

Ware's Siberian Cedar

Blue Heaven Juniper, Cologreen Juniper, Gray Gleam Juniper,
Medora Juniper, Moonglow Juniper, Rocky Mountain Juniper,
Skyrocket Juniper, Tolleson's Weeping Juniper, Wichita Blue Juniper

Compact Blue Spruce, Montgomery Spruce, Dwarf Alberta Spruce

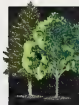
American Alder

Saskatoon

Maack's Burning Bush

Common Caragana, Fern-leaved Caragana, Golden Caragana

Red Bead Cotoneaster



Golden Elder, Golden European Elder, Redman Elder,
Sutherland Golden Elder

Arnold Red Honeysuckle, Beavermore Honeysuckle,
Carleton Honeysuckle, Frosty Honeysuckle, Tartarian Honeysuckle,
Dropmore Honeysuckle

Assessippi Lilac, Pocohontas Lilac, Coral Lilac, Donald Wyman Lilac,
Hiawatha Lilac, James McFarlane Lilac, Minuet Lilac, Miss Canada Lilac,
Common Lilac, Belle de Nancy Lilac, Charles Joy Lilac,
Ellen Wilmott Lilac, Katherine Havemeyer Lilac, Ludwig Spaeth Lilac,
Madame Lemoine Lilac, President Grevy Lilac, President Lincoln Lilac,
Primrose Lilac, Souvenir de Louis Spaeth Lilac, Late Lilac,
Miss Kim Lilac, Royalty Lilac

Common Ninebark

Sea Buckthorn

Cutleaf Staghorn Sumac, Smooth Sumac, Staghorn Sumac

Amur Tamarisk

American Highbush Cranberry, Wayfaring Tree

Polar Bear Willow

Large Shrubs/Small Trees – 3 to 5 m

Techny Cedar

Speckled Alder

River Birch, Young's Weeping Birch

Sutherland Caragana

Chokecherry, Muckle Plum, Pin Cherry, Schubert Chokecherry,
Wild Plum

Arnold Hawthorn, Chocolate Hawthorn, Fleshy Hawthorn,
Snowbird Hawthorn, Toba Hawthorn

Tree Lilac

Amur Maple

Green's Mountain Ash

Altaglow Saskatoon

Coyote Willow, French Pussy Willow, Prairie Cascade Willow,
Pussy Willow

Swamp Birch

Silver Buffaloberry

European Elder

Nannyberry

Small Trees – 5 to 8 m

White Fir

Bristle-cone Pine, Limber Pine, Swiss Mountain Pine

Brandon Cedar, Emerald Green Cedar, Holmstrup Cedar

Mancana Ash, Manchurian Ash

Chinese Paper Birch, Water Birch

Ohio Buckeye

Black Cherry

Tartarian Maple

European Mountain Ash, Pyramidal Mountain Ash,
Russian Mountain Ash, Showy Mountain Ash

Ussurian Pear

Russian Olive

Flowering Crabapples

Tall Trees – over 8 m

Douglas Fir, Balsam Fir, Siberian Fir

Siberian Larch, American Larch



Eastern White Pine, Jack Pine, Lodgepole Pine, Ponderosa Pine,
Red Pine, Scots Pine,

Swiss Stone Pine, White Bark Pine

Blue Colorado Spruce, Colorado Spruce, Fat Alberta Spruce,
Hoopsi Spruce, Kusters Blue Spruce, Engelman Spruce, Norway Spruce,
Serbian Spruce, White Spruce, Black Hills Spruce

Black Ash, Fallgold Black Ash, Green Ash, Marshall's Seedless Ash,
Patmore Ash, Prairie Spire Ash, Summit Ash

Paper Birch, Chickadee Birch, European Birch, Cutleaf Weeping Birch,
Weeping Birch

Amur Cherry, Dropmore Mayday, Mayday Tree

American Elm, Brandon Elm, Manchurian Elm, Jacan Elm, Japanese Elm

American Linden, Dropmore Linden, European Basswood,
Morden Linden

Baron Manitoba Maple, Manitoba Maple, Silver Maple

American Mountain Ash

Bur Oak

Assiniboine Poplar, Balsam Poplar, Brooks #4 or #6 Poplar,
Brown Twig Poplar, Griffin Poplar, Northwest Poplar,
Plains Cottonwood, Prairie Spire Poplar, Swedish Columnar Aspen,
Tower Poplar, Trembling Aspen

Black Walnut, Butternut, Manchurian Walnut

Acute Leaf Willow, Golden Willow, Laurel-leaf Willow,
Red-barked White Willow, Siberian Silver Willow

Flowering Crabapples

Flowering crabapples are one of the most spectacular spring flowering trees. They tolerate most soil types, from sandy to heavy. However, planting these trees in extremely wet or dry areas, high pH soils and shade will result in poor growth.



Flowering Crabapples

Common name	Botanical name	Height (m)
<i>Malus x 'Almey'</i>		
Almey Crabapple	<i>Malus x 'Almey'</i>	5
Big River Crabapple	<i>Malus x 'Big River'</i>	5
Columnar Siberian Crabapple	<i>Malus baccata 'Columnaris'</i>	5
Hopa Crabapple	<i>Malus x 'Hopa'</i>	5
Kelsey Crabapple	<i>Malus x 'Kelsey'</i>	4
Makamik Crabapple	<i>Malus x 'Makamik'</i>	5
Radiant Crabapple	<i>Malus x 'Radiant'</i>	5
Red Splendor Crabapple	<i>Malus x 'Red Splendor'</i>	5
Royalty Crabapple	<i>Malus x 'Royalty'</i>	5
Selkirk Crabapple	<i>Malus x 'Selkirk'</i>	5
Siberian Crabapple	<i>Malus baccata</i>	5
Sparkler Crabapple	<i>Malus x 'Sparkler'</i>	5
Strathmore Crabapple	<i>Malus x 'Strathmore'</i>	5
Thunderchild Crabapple	<i>Malus x 'Thunderchild'</i>	5



plant has ornamental flowers



requires sunny, well-drained location



susceptible to fireblight

Spread (m)	Notes	Flower color	Leaf color
4	 	rosy-pink/white centres	burgundy maturing to bronzy-green
4	  	pink	green
1	  	white	green
4	  	rosy-pink	green
4	 	pink double	red turning to bronzy-green
4	 	deep rose	bronzy-red
4	 	medium pink	purple maturing to bronzy green
4	 	deep rose pink	glossy green with red edge
4	  	dark purple	glossy, purple turns orange in autumn
4	 	pink	bronzy-red
4	 	white	green
4		rose-pink	green
3	 	rose-pink	bronzy-green
4	  	dark pink	dark purple



hardy in most of Alberta; borderline for chinook areas



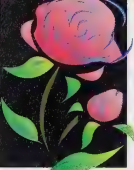
graduate from the Regional Woody Plant Test Program





Roses





Roses

Winter Hardiness

Roses are a favorite of many gardeners, yet the climate in Alberta can make these beautiful plants a challenge to grow. Winter survival is a big factor in keeping roses growing from year to year.

A number of tender roses require a protective mulching for winter survival. Roses like the hybrid teas, with large double blossoms borne on long straight stems, and floribundas, with flowers borne in clusters ever-blooming from June until fall frost, are considered tender. Also included in this group are grandifloras, which resemble hybrid teas but have slightly smaller flowers in clusters, and polyanthas, which are short plants with small flowers that bloom for a longer period than any other rose. Climbing roses are also included in this group of tender roses.

Shrub roses are able to survive winters with little or no extra protection. They vary in size and blooming habits. Shrub roses are easy to cultivate and require the same general care as other shrubs.

Agriculture and Agri-Food Canada has developed two outstanding series of shrub roses: the Explorer and the Parkland series. These roses can be grown on their own hardy roots rather than being grafted. The tops may be damaged or die due to severe winter weather, but because they are on their own roots, they will recover the following spring with new growth. If winter die-back occurs, simply prune out the dead wood.

Planting and Growing

Soak bare-rooted plants in water overnight before planting. Plant tender roses in a hole 35 to 45 cm deep with the graft union 10 cm below the soil

surface. If the root stock is so long that it cannot be planted properly, place the stem at a 45° angle, then backfill in the hole. Be sure the graft union is well buried.

Plant container-grown shrub roses in the same manner as any shrub. Do not plant them any deeper than they were originally, whether in a container or bare root.

Begin fertilizing all roses with a complete fertilizer such as 28-14-24 when the new growth is 5 to 7.5 cm long. A constant moisture supply is vital to rose growing; they require 25 mm of water a week. Avoid overhead irrigation when watering roses, as this method causes leaf diseases.

All roses, whether tender or hardy, require at least six hours of direct sun daily, with the heat of the afternoon sun being preferable to that of the morning. Air movement through the planting site is necessary to help prevent the foliage diseases such as powdery mildew and blackspot.

Roses prefer a well-drained, fertile, loamy soil, although they will grow in a wide range of soils. They will not tolerate soils that are excessively alkaline, acid or poorly drained. Incorporate lots of organic matter into the soil before planting to improve the drainage.

Wintering

The wintering of tender roses begins in the summer. Stop fertilizing the plants at the end of July. When cutting rose blossoms for cut flowers in August, cut blossoms with shorter stems. In September, cut back the water, but never let the plants dry out.

After several hard frosts, put the winter insulation in place. Just prior to the soil freezing, soak each rose. Cut the tops back to a height of 25 to 30 cm. Mound each rose with 25 to 35 cm of insulating material such as peat moss, dry leaves or clean straw. If the roses are in a windy location, cover the mounds with burlap or spruce boughs to stop the insulation from blowing off.

In the spring, remove the covering and insulating material at about the same time the native poplars are leafing out.

Here is a list of recommended hardy shrub roses for growing in Alberta.




Roses

Name	Height (m)	Spread (m)	Growth habit
Favorites			
Altai	2	2	shrub
Austrian Cooper	1	1	shrub
Blanc Double de Coubert	1.5	1.3	shrub
Dr. F.L. Skinner	2	2	shrub
F.J. Grootendorst	1.6	1.3	shrub
Grootendorst Pink	1.2	1.2	shrub
Grootendorst Red	1.2	1.2	shrub
Grootendorst Supreme	1	1	shrub
Grootendorst White	1.2	1.2	shrub
Hansa	1.3	1.6	shrub
Harrison's Yellow	2	1.5	shrub
Isabelle Skinner	2	1.5	shrub
J.P. Connell	.75	.75	shrub
Marie Bugnet	1	1	shrub
Persian Yellow	1.5	1.5	shrub
Prairie Dawn	2	1.5	shrub
Prairie Joy	1.5	1.5	shrub
The Hunter	1.3	1	shrub
Theresa Bugnet	2	2	shrub
Species Roses			
Altai Rose <i>Rosa pimpinellifolia</i> var <i>altaica</i>	2.5	2	shrub
Austrian Brier Rose <i>Rosa foetida</i>	2	2	shrub

 continual

 recurrent

 nonrecurrent

 everbearing

Flower color	Flower form	Flower size (cm)	Flower continuity	Fragrance
cream	single	5-10	✱	
orange, fade yellow	single	5-10	✱	✱
white	semi-double	5-10	✱	✱
gold to yellow	double	5-10	✱	
bright red	double	under 5	✱	✱
pink	double	under 5	✱	✱
medium red	double	under 5	✱	
dark red	double	under 5	✱	
light pink, fade white	double	under 5	✱	
fuchsia	double	over 10	✱	✱
dark yellow	semi-double	under 5	✱	✱
medium pink	double	5-10	✱	
yellow, fade cream	double	5-10	✱	✱
white	double	5-10	✱	✱
medium yellow	semi-double	under 5	✱	✱
medium pink	double	5-10	✱	✱
medium pink	double	5-10	✱	
red	double	5-10	✱	✱
medium pink	double	over 10	✱	✱
white	single	over 10		✱
dark yellow	single	under 5	✱	

✱ mild

✱ medium

✱ strong

Name	Height (m)	Spread (m)	Growth habit
<i>spinescence is a natural defense mechanism</i>			
Common Wild Rose <i>Rosa woodsii</i>	1	1	shrub
French Rose <i>Rosa galica</i>	1.5	2	shrub
Prairie Rose <i>Rosa arkansana</i>	1	1	shrub
Prickly Wild Rose <i>Rosa acicularis</i>	1	1	shrub
Red Leaf Rose <i>Rosa glauca (rubrifolia)</i>	1.6	1.6	shrub
Red Rose <i>Rosa rugosa</i>	1.6	1.6	shrub
Rugosa Rose <i>Rosa rugosa alba</i>	1.6	1.6	shrub
Shining Rose <i>Rosa nitida</i>	.3	.3	shrub
Smooth Rose <i>Rosa blanda</i>	2	2	shrub
Parkland Rose Series			
Adelaide Hoodless	1.6	1.6	shrub
Cuthbert Grant	1	1	shrub
Hope for Humanity	1	1	shrub
Morden Amorette	.45	.45	shrub
Morden Blush	.75	.75	shrub
Morden Cardinette	.6	.6	shrub
Morden Centennial	1.3	1	shrub



continual



recurrent



nonrecurrent



everbearing



Flower color	Flower form	Flower size (cm)	Flower continuity	Fragrance
pink or rose	single	under 5	✱	✱
light red	semi-double	5-10		✱
rose, fade white	single	under 5	✱	✱
pink	single	under 5	✱	✱
pink	single	5-10	✱	✱
brilliant magenta	single	over 10	✱	✱
white	single	over 10	✱	✱
pink	single	under 5	✱	
pink	single	under 5	✱	
medium red	double	5-10	✱	✱
dark red	semi-double	5-10	✱	✱
blood red	double	5-10	✱	✱
carmine to dark rose	double	5-10	✱	✱
light pink, fade ivory	double	under 5	✱	✱
cardinal red	double	5-10	✱	✱
medium pink	double	over 10	✱	✱

✱ mild

✱ medium

✱ strong

Name	Height (m)	Spread (m)	Growth habit
Morden Fireglow	1	.75	shrub
Morden Ruby	1	1	shrub
Winnipeg Parks	.45	.45	shrub
Explorer Rose Series			
Alexander Mackenzie	1.6	1.3	shrub
Captain Samuel Holland	2.4	1.3	climber
Champlain	1	1	shrub
Charles Albanel	.45	.75	ground cover
David Thompson	1.05	1.3	shrub
Frontenac	.8	.8	shrub
George Vancouver	.6	.6	shrub
Henry Hudson	.5	1	shrub
Henry Kelsey	2.2	2.1	climber
Jens Munk	1.3	1.6	shrub
John Cabot	2.7	1.75	climber
John Davis	1.6	1.5	climber
John Franklin	1	1	shrub
Lambert Closse	.85	.85	shrub
Louis Jolliet	1.3	1	climber
Martin Frobisher	1.6	1.3	shrub
Quadra	1.6	1.3	climber
Royal Edward	.45	.45	ground cover
Simon Fraser	.6	.75	shrub
William Baffin	2.1	1.6	climber



continual



recurrent

















































nonrecurrent



everbearing

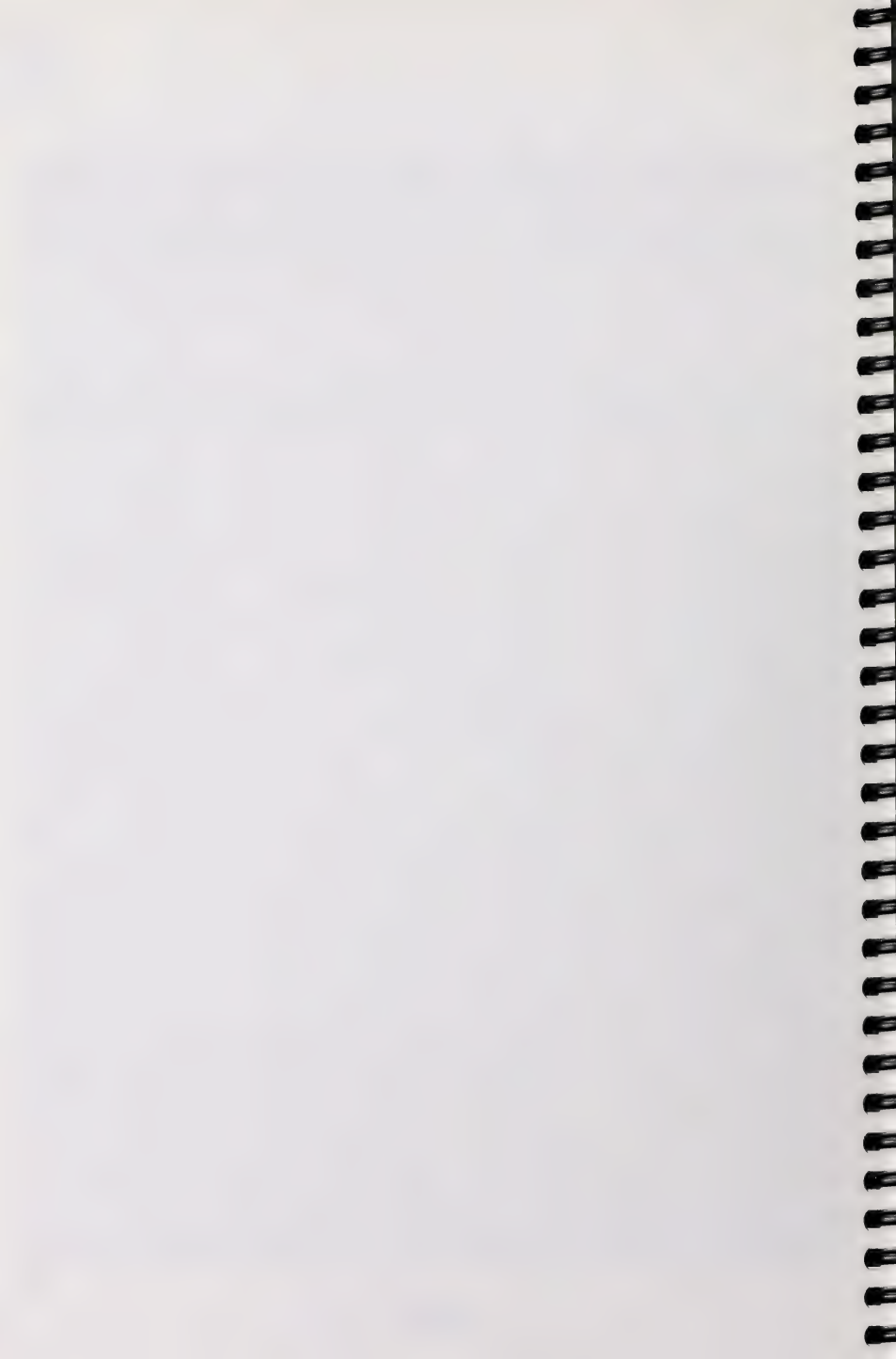


Flower color	Flower form	Flower size (cm)	Flower continuity	Fragrance
orange to red	double	5-10		
ruby red	double	5-10		
dark pink to red	double	5-10		
medium red	double	5-10		
medium red	double	5-10		
dark red	double	5-10		
red purple	semi-double	5-10		
dark fuchsia	double	5-10		
dark pink	semi-double	5-10		
medium red	double	5-10		
white	semi-double	5-10		
medium red	double	5-10		
medium pink	double	5-10		
pink/red purple	double	5-10		
medium pink	double	5-10		
medium red	double	5-10		
light pink	double	5-10		
medium red	double	5-10		
light pink	double	5-10		
dark red	double	5-10		
medium pink	semi-double	5-10		
medium pink	single	5-10		
dark red	semi-double	5-10		

 mild

 medium

 strong





Tree Fruit





Tree Fruit

Planting

Tree fruit can be grown quite successfully in Alberta. First, select a site with ample protection against prevailing winds. Avoid low-lying spots and south-facing slopes. Tree fruits prefer a well-drained loam soil with good fertility.

Plant vigorous, healthy one or two-year-old trees of recommended prairie hardy cultivars.

The planting hole should be large enough to accommodate the tree's roots without crowding or folding (see Woody Ornamentals on How to Plant). Place the tree in the hole with the graft union above ground level. Fill the hole with topsoil, working the soil around the roots, and then tamp it firmly. Trees should be well watered during the first summer.

Pruning

The modified leader pruning system is the approach most commonly used in Alberta. Try the following steps:

- First branch should be 45 to 60 cm from the ground, on the south or southwest side of the tree.
- Succeeding 5 to 6 lateral branches should be 15 to 20 cm apart and evenly distributed around the tree.
- Choose branches with a wide angle as these will develop into strong scaffold limbs.
- Cut leader back to a good lateral branch after all scaffold limbs have been selected.

- Shorten selected scaffold limbs by one quarter to one third and prune out all other wood.
- Keep centre of tree open.
- Prune annually in the early spring to control tree size and to encourage fruit spur formation.
- Remove broken, diseased or damaged branches and sucker growth when noticed.

Fruit Production

A tree will not bear fruit until it is mature, so there is a delay of several years from the time of planting to fruit bearing. Cultivars do differ in maturity, though, so different varieties will mature at varying rates.

Most fruit trees require pollen from another cultivar for fruit production. To encourage pollination, plant at least two cultivars of the same fruit that have overlapping bloom periods.

For example crabapple, apple crabs and apples cultivars will cross-pollinate each other. Plums and apricots need two different cultivars, blooming at the same time, within the genus *Prunus* for pollination. Early flowering plums can be pollinated by the Nanking cherry while the later blooming plums can be pollinated by sandcherries. Pears need another pear cultivar for a pollen source because the pollen is not compatible with apples.

Recommended Tree Fruit

Here are recommendations for general planting in Alberta. A nursery in your locality may have other cultivars worth growing in your area.

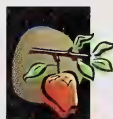
Apples (*Malus cultivars*)

Most apples make excellent juice; however, they must be juiced before they are overripe, as juice content drops off quickly.

Early season: Fruit ripens mid – late August

Mid season: Fruit ripens early – mid September

Late season: Fruit ripens mid – late September



Apples

Name	Color	Size	Uses	Storage
Apples (<i>Malus cultivars</i>)				
Early Season				
Heyer 12	straw-colored	5-6 cm	good for pies, applesauce and juices; fair for eating fresh	poor keeping qualities; use only where better quality apples do not produce well
Norcue	greenish yellow with red stripes	4-5.5 cm	good for cooking	stores moderately well
Norhey	greenish yellow	5-7 cm	good for cooking and juice; poor for eating fresh	fair keeping qualities
Norland	green striped with red	6-7 cm	good for eating fresh and cooking	turns mealy quickly; stores well if underripe
Parkland	greenish yellow with red stripes	6-7 cm	good for eating fresh and cooking	good keeping qualities; tends to be a biennial bearer
Westland	greenish yellow with red stripes	7-8 cm	good for cooking; fair for eating fresh	stores moderately well
Mid-season				
Battleford	greenish yellow streaked with red	6-7 cm	good for cooking; poor for eating fresh	goes mealy quickly; poor keeping qualities; use only where better quality apples do not produce well
Brookland *	green washed with red	5-6 cm	good for cooking and eating fresh	keeps six weeks
Carroll	pale green washed with red	6-7 cm	excellent for eating fresh and cooking	keeps ten weeks

* Varieties released from Alberta Horticultural Research Centre — now Crop Diversification Centre South

Name	Color	Size	Uses	Storage
Edith Smith	yellowish green washed with orange red	6-7 cm	good for cooking; fair for eating fresh	poor keeping qualities
Harcourt	green washed with red	5-6 cm	good for cooking and eating fresh	poor keeping qualities
McLean	yellow with faint red blush	5-6 cm	fair for eating fresh; good for cooking and juice	stores moderately well
Norda	greenish yellow with dark red overlay	5-6 cm	good for eating fresh and cooking	good keeping qualities
Norson	greenish yellow washed with dark red	5 cm	good for eating fresh and cooking	good keeping qualities
Patterson	greenish yellow with red blush	6 cm	good for eating fresh; excellent for cooking	stores moderately well
September Ruby	light green with red overlay	6-7 cm	good for eating fresh and juicing	good keeping quality
Sunnybrook *	yellow with red stripes	6-7 cm	good for eating fresh and cooking	fair keeping qualities
Late Season				
Collet	light green with pale red stripes	6-8 cm	good for cooking and eating fresh; excellent for pies	good keeping qualities
Fall Red	yellowish green with red overlay	7-8 cm	good for eating fresh and cooking	excellent keeping qualities
Goodland	green washed with red	6-8 cm	excellent for cooking and eating fresh	excellent keeping qualities
Haralson	green washed with red overlay	6 cm	good for cooking and eating fresh	excellent keeping qualities

* Varieties released from Alberta Horticultural Research Centre — now Crop Diversification Centre South

Name	Color	Size	Uses	Storage
Luke	green mottled with red	8-9 cm	fair for eating fresh; good for cooking	good keeping qualities; ripens very late

Apple Crabs

Early Season

Rescue	greenish yellow with red overlay	3-4 cm	good for canning, juice and eating fresh	goes mealy quickly
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Mid-season

Renown	yellow with red splashes	4-5 cm	good for eating fresh; poor for canning and jelly	
Rosybrook *	pale green with red overlay	4 cm	good for eating fresh, pies and canning	good keeping qualities
Trailman	green with red overlay	4-5 cm	good for eating fresh and cooking	

Late Season

Kerr	creamy yellow with purple-red overlay	3.5-4.5 cm	good for eating fresh and jelly; excellent for canning	excellent keeper
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Crabapples

Early Season

Osman	pale yellow with crimson overlay	3.5 cm	good for jelly and canning	fair keeping qualities
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Mid-season

Dolgo	pale yellow with red overlay	3-4 cm	excellent for jelly	poor keeper
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Late Season

Columbia	yellowish with red overlay	3-4 cm	good for jelly; fair for canning	good keeper
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* Varieties released from Alberta Horticultural Research Centre — now Crop Diversification Centre South



- **Apricots** (*Prunus P. mandschurica* and *P. siberica crosses*)

Apricots require cross-pollination, whether it be from a different variety or a Nanking cherry. It is critical to have blossom overlap in the first three days of flowering. They are not reliable fruiters because blossoms may be killed by cold winter temperatures, late winter chinooks or early spring frosts. Many cultivars are also biennial bearers. All cultivars are good for canning or jam, but they may be too tart for use as a fresh fruit.

Apricots must ripen on the trees as the sugar content does not increase once they have been picked. Sandy soils and sites with adequate air drainage and good protection from the late winter and early spring thaws are suited to growing apricots. It is worth trying to grow other selected seedlings of Manchurian apricot.

- **Pears** (*Pyrus spp.* and *cultivars*)

Pick pears when they can be pulled away from the tree with a gentle tug. Once picked, store pears in the refrigerator for two weeks; then take them out and allow them to ripen at room temperature.

- **Plums**

Plums are self-sterile; so they must be cross pollinated. The pollination of plums is complex because different family grouping of plums are self-sterile. Native plums should serve as pollinators for either Japanese plums or Japanese-native plum hybrids as long as both plants are blooming at the same time.

Blooming periods

	Central Alberta	Southern Alberta
<i>Early season:</i>	May 9 - 17	2 weeks earlier
<i>Late season:</i>	May 16 - 26	2 weeks early

Note: For information on the Evans Cherry, please see the Bush/Small Fruit section.

Apricots, Pears & Plums

Name	Color	Size	Uses	Features
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Apricots (*Prunus P. mandschurica* and *P. siberica* crosses)

Brookcot *	yellow-orange with red cheeks	2.5-3.0 cm		good flavor; juicy; clingstone
Morden 604	golden yellow	4-5 cm	excellent for dessert, preserves and jam	very sweet fruit
Prairie Gold	golden yellow	3-4 cm	good for jams	
Scout	bronze gold; flesh deep yellow	4 cm	good for canning and jam; fair for eating fresh	freestone
Sunrise	orange gold	3-4 cm		
Westcot	yellow-orange	3-5 cm	good flavor for jams and canning	juicy; freestone

Pears (*Pyrus* spp. and cultivars)

Fedorovsk	greenish-yellow	6 cm	good for eating fresh and canning	ripen in late September
Pioneer	greenish yellow	5 cm	good for eating fresh and canning	ripen in late September
Ure	greenish-yellow	5 cm	good for eating fresh and canning	ripen in mid September

Native Plums (*Prunus P. nigra*)

Early Season

Bounty	skin dark red, flesh yellow	3.5-4 cm	good for preserves and canning; fair for eating fresh	
Dandy	skin yellow with red blush, flesh yellow	2.5 cm	excellent for preserves; good for eating fresh; fair for canning	

* Varieties released from Alberta Horticultural Research Centre — now Crop Diversification Centre South



Name	Color	Size	Uses	Features
Mid-season				
Norther	bright red skin, yellow flesh	3.5 cm	good for eating fresh; poor for canning and preserves	

Native Plum Hybrid (*P. nigra* x *P. salicina*)

Mid-season				
Perfection	dark red skin, light yellow flesh	3.5 cm	good for canning, preserves and eating fresh	
Prairie	dark red skin, orange yellow flesh	4.5 cm	good for canning, preserves and eating fresh	
Late Season				
Pembina	skin red with blue bloom, flesh yellow	4-5 cm	excellent for eating fresh; good for canning; poor for preserves	

Japanese Plums (*Prunus salicina*)

Early Season				
Brookgold *	yellow skin with red blush, flesh yellow	2.5-3 cm	good for eating fresh and canning; poor for preserves	freestone
Pitsin #5, 9, 10	greenish yellow skin, flesh light green	2.5-3.5 cm	good for preserves and eating fresh; poor for canning	Pitsin #5 is freestone
Pitsin #12	red skin, flesh yellow-orange	2.5-3.5 cm	good for eating fresh and jam; poor for canning	
Late Season				
Brookred *	dull dark red fruit, pale orange flesh	4-5 cm	excellent for preserves; good for eating fresh and canning	





Bush/Small Fruit





Bush/Small Fruit

Getting Ready

Choose a site for these crops that has wind protection to the north, south and west. Strong winds can dehydrate the soil and plants and do physical damage to the plants and fruit. The planting site will need some air circulation to prevent disease. In addition, the soil should be well-drained and high in organic matter. A source of water for irrigation will ensure good fruit production.

Summer fallow the planting site for one season before planting to help rid the site of weeds. Cultivation is also an excellent way to incorporate organic matter into the soil. When planting, be sure to use recommended cultivars that are disease-free.

Good weed control is a must to remove competition for the crop once it is planted. Mulching is a good way to control weeds without disturbing the soil. Mulch will also help retain soil moisture and keep plant roots cool. Materials like dried grass clippings, sawdust or peat moss can be used for mulch. If a lawn herbicide has been used, only collect the clippings after the lawn has been mowed six times.

Recommended Bush Fruit

• **Sandcherry Plum Hybrids** (*Prunus* spp.)

Hybrids between plums and sandcherries have larger, sweeter fruit than sandcherry but may not be as hardy. Cultivars will pollinate each other, but a sandcherry planted close by will ensure cross-pollination.

Mid to late season

Alace

purple skin, blue bloom, green flesh, firm, 2.5 cm – good for eating fresh and canning

Dura

green with purple blotches; light bloom, red flesh, 3.5 cm – excellent for canning and jam

Manor

purple, light blue bloom, red-black flesh, 2.5 to 3 cm – good for eating fresh, pies and jam; fair for canning

Opata

deep purple skin, light blue bloom, green-yellow flesh, soft, 2.5 to 3 cm – good for jam and canning

Sapa

deep purple, light blue bloom, dark red flesh, firm, 2.5 to 3 cm – good for jam, canning and eating fresh

• **Bush Cherries** (*Prunus* spp.)

Sweet cherries are not hardy in Alberta. Nanking and Mongolian cherries require cross-pollination.

Mongolian Cherry (*Prunus fruticosa*)

selected seedlings – dark red skin – use for canning, jams, jellies, pies and wine

Nanking Cherry (*Prunus tomentosa*)

selected seedlings – bright red skin, 1 to 1.5 cm – use for jams, jellies, pies and wine

Sandcherry (*Prunus besseyi*)

selected seedlings

- **Sour Cherry**

Montmorency

self-fruitful, 1 to 2 cm – use for eating fresh, cooking, jam and wine

Meteor

self-fruitful, bright red skin, yellow flesh, 1 to 2 cm – use for eating fresh, cooking, jam and wine

Northstar

bright dark red skin, yellow flesh – use for eating fresh, cooking, jam and wine

Evans

self-fruitful, bright red skin, yellow flesh – use for eating fresh, cooking, jam and wine – fruit ripens late July

Other selected seedlings

- **Currants and Gooseberries** (*Ribes* spp.)

Red, White and Albol currants bear most of their fruit on spurs of two and three-year-old wood. Gooseberries bear fruit along the sides of one-year shoots and also on the spurs of two and three-year-old wood.

In the spring, one year after planting, remove weaker shoots. Leave no more than six of the strongest first-year shoots. In the second spring after planting, leave six shoots, with three two-year and three one-year shoots. In the third year after planting, leave about nine shoots: three one-year, three two-year and three three-year shoots.

Pruning this way will keep vigorous young shoots coming on to take the place of wood more than three years old, which is generally less productive. In subsequent years, remove the wood older than three years.



Black currants bear most of their fruit on one-year-old wood. Some pruning may be necessary the first spring following planting to shape the bush and limit the number of main branches to six or eight. Each succeeding spring, leave three or four two-year canes and six one-year canes. If the plant is more vigorous, a higher number of shoots can be left unpruned. Cutting back the tips of black currants will reduce fruit production.

Most currants are self-fertile but may set more fruit if two cultivars are planted. For better black currant production, plant more than one cultivar.

Red currants

Red currants are useful for jam, cooking, wine and eating fresh.

Perfection

large spreading plants – flavorful berries

Red Cross

large vigorous bushes – short to medium clusters of round, glossy bright, light red berries

Red Lake

bright red, medium-large berries on medium-long clusters

White currants

White currants are useful for jam, cooking, wine and eating fresh.

Large White

large amber-colored, mild flavored fruit

White Imperial

high-yielding plant

Black currants

Black currants are useful for jam, juice, cooking and wine.

Boskoop

pea-size fruit

Consort

small fruit on medium length clusters

Magnus

medium to medium-large fruit, even ripening – cool spring weather will cause fruit to drop

Willoughby

resistant to mildew – good quality fruit – self fruitful

Ben Nevis

resistant to mildew – medium size fruit

Other currants

Josta

black fruit – good for jams and jellies

Missouri

(also know as Albol, Colorado, California, Golden, Clove, Cross, Buffalo, Golden Flowering). There are golden, black and red fruited selections

Black Giant

black fruit – use for jam, cooking, wine and eating fresh

Gooseberries

Gooseberries are self-fertile. They can be used for jam, cooking, wine and eating fresh.



Pembina Pride

vigourous upright bush, large berries, fruit green at maturity – fruit good for processing

Pixwell

large green berries, turning to bronze when ripe – good for jams and pies

Welcome

large, bright red tart berries – branches nearly thornless

• **Other Berry**

Sea Buckthorn (*Hippophae rhamnoides*)

bright orange fruit, sour taste, better after light frost – male and female plants are necessary for fruit production; fruit difficult to harvest

• **Grapes** (*Vitis* spp.)

Grapes can survive Alberta winters if grown close to a south-facing building, but be aware that winter protection may be necessary. After planting the grape plants, prune the plants back to two or three buds. In the second spring, cut back last year's growth to four or five strong buds. Prune in early spring. In subsequent years, prune back all previous years' vines, leaving no more than 30 buds on each plant. Be sure to remove sucker growth as it is a poor fruit producer.

Although some varieties mentioned are self fruitful, planting two different varieties will increase the fruit production. The river or wild grape can be used as a pollinator.

Keep the plants well watered, so they can reach their maximum size. Water the plants until late August, then withhold water to allow the plants to harden for winter.

Once grapes are picked, they stop ripening, so allow them time to ripen on the vine.

Beta

blue fruit, self fruitful – good for juice and jelly, but too sour and acidic for wine

Fredonia

blue fruit – requires winter protection

Valiant

blue fruit, high yield, self fruitful – use for eating, jelly, juice and wine

Riding Mountain

worth giving a try

Native Fruits

- **Saskatoon** (*Amelanchier alnifolia*)

Prune saskatoons early in the spring, after the severe cold weather has passed but before bud break. Prune to control the bush height to 2 m. Remove all diseased, damaged and weak growth. Cut off low branches, and thin the centre of the bush to allow for air circulation. After plants are six to seven years old, prune out a few five- to seven-year-old branches yearly to encourage new and vigorous shoot growth.

Honeywood

2.5 m tall shrub – large (16 mm) flavorful fruit – later flowering than other cultivars

Northline

1.5 m tall shrub, upright and spreading – 16 mm berries – produces at younger age than other cultivars

Pembina

3 m tall shrub, upright, slightly spreading, oval – 14 mm berries

Smoky

2.5 m tall shrub, upright, spreading, round – sweet, 14 mm berries

Thiessen

4 m tall shrub, round form – 17 mm berries – flowers earlier than other cultivars



There are other cultivars available; check with your local nursery to see what you can grow in Alberta.

- **Chokecherry** (*Prunus virginiana*)

Cross-pollination of chokecherries will increase the fruit set.

Garrinton

8 to 10 mm fruit – bush 2.5 m tall

Goertz

black, juicy fruit, not astringent – 12 to 16 fruit per cluster

Boughens Yellow

yellow fruit – bush 3 m tall

Other selected seedlings

- **Pincherry** (*Prunus pensylvanica*)

Pincherries are tart cherries that are bright red and have rather large stones. The fruit is in loose clusters of five to seven, each with a long slender stalk.

Mary Liss

fruit is three times bigger than wild fruit

Other selected seedlings

- **Buffaloberry** (*Shepherdia argentea*)

The fruit of the Buffaloberry is bright orange-red (occasionally yellow). It has a bitter taste, and the fruit is soft and difficult to harvest.

Recommended Small Fruit

- **Lowbush Blueberries** (*Vaccinium* spp.)

Blueberries require a well-drained sandy, acidic soil (pH 4.5). A good snow cover and straw mulch are necessary for the plants to survive the winter in

most areas. Most prairie soils are generally alkaline, so it may be a challenge to grow blueberries successfully. It will be necessary to acidify the soil.

Give the following varieties a try

Northblue

large dark blue berries

North Country

sky blue, sweet fruit – 1.2 cm diameter

North Sky

small sweet berries – plant is 30 cm tall

- **American Highbush Cranberry** (*Viburnum trilobum*)

American Highbush Cranberry has small, bright red fruit that is used for jelly. The bush is 3 m tall.

- **Raspberries** (*Rubus* spp.)

Two types of raspberries are available to Alberta gardeners: either **floricane** (summer bearing) or **primocane** (fall bearing) plants.

Floricane raspberries should be well sheltered. Flowers and fruit are produced on second-year growth. Plant these raspberries on the north side of an east-west shelter. In areas of low snow cover or in the chinook areas, winter protection is necessary. Canes may be bent to the ground in late autumn and covered completely with soil.

Each spring, cut off all the dead material, weak canes and any surplus strong canes at ground level. Leave 9 to 10 sturdy canes per metre, with canes being no closer than 15 cm apart. Canes with winter tip injury can be headed back to live wood in the spring. New, tall canes should not be cut back after July 1, as late cutting causes soft growth, which will not harden off properly for winter.

Primocane, or fall bearing raspberries, produce fruit on the current season's growth. Production generally begins in mid to late August. Areas with warm summers and long warm falls are ideal for primocane raspberries. All the canes are cut to the ground in March or April each year.



Florican Raspberry

Boyne

dark red berries, tart flavor, good for preserving – very hardy, very spiny canes

Festival

large medium-red fruit, good flavor – good for freezing, canning quality is poor due to light color

Honeyqueen

good size soft yellow berries – sweet flavor

Killarney

large, bright red fruit – very spiny canes

Redbrook *

large, bright red sweet fruit – good flavor

Souris

sweet, tart fruit, excellent flavor

Try the following varieties

Chief

small to medium, bright red, moderately firm fruit – excellent for processing

Fraser

large red, juicy fruit

Primocane Raspberries

Red River

medium red berries – canes sparsely spined – earliest cultivar

Double Delight

small, medium-red firm fruit – early

Summit

small to medium size, medium-red color fruit – canes have few scattered spines

* Varieties released from Alberta Horticultural Research Centre – now Crop Diversification Centre South

Autumn Bliss

large, oval-conical, dark red berries – canes spiny and erect

Fallbrook

large, bright-red, sweet fruit – spiny canes

Black and purple raspberries are not hardy under Alberta conditions.

Cultivars worthy of trial if sufficient micro-climate can be provided are the following: Wyoming (purple raspberry) and Lowden Black (black raspberry).

• **Rhubarb** (*Rheum rhabarbarum*)

Divide plants early in the spring. Allow at least one year before harvesting. During the second season, one harvest can be made. In subsequent years, two harvests can be made each season, but the number of yearly harvests should be determined by the vigour of the plant. Plan the first harvest for early to mid-June and the second in mid to late July. A deep, rich and moist soil is preferred for these plants. **Note:** the redder the stalks, the less vigorous the plant.

Canada Red

moderately red colored stalks – good vigor

Early Sunrise

similar to McDonald, intense red color – not as vigorous

McDonald

moderately red stalks – good vigour – excellent for pie fillings

Valentine

bright red stalks – almost free of seedstalk development

German Wine

large green stalks – most vigorous – suitable for juicing and wine-making



• **Strawberries** (*Fragaria* spp.)

June bearing

Bounty

medium to medium-dark red, moderately firm

Cavendish

medium to large fruit, deep glossy red, medium firm – prefers a sandy location

Glooscap

medium to dark red, glossy fruit, medium firm – early to mid-season

Honeoye

bright, red moderately firm berries with tender skin

Jewel

large, firm, glossy-bright red fruit – good fresh or for processing

Kent

dark red, moderately firm berries – early to mid-season

Everbearing

Jubilee

plants hardy

Ogallala

medium size dark red fruit, firm flesh – processes well

Fort Laramie

medium to large fruit – freezes well – good for eating fresh

Day neutral

Fern

medium to high yield, firm, good textured fruit

Seascape

firm, large fruit with good texture, medium to high yield – most fruit produced late summer, early fall

Tristar

firm, dark-red berries



Annual & Biennial Flowers





Annual & Biennial Flowers

The versatile annuals have been used for decoration and color since the time of the pharaohs in Egypt.

Planning Flower Beds

Here are a few pointers to keep in mind when planning flower beds.

Seed catalogues or reference books on annuals are full of information about the growth habits and plant spacing of annuals. These references are also full of inspiring pictures and tips for using these plants in the landscape.

Planting annuals in groups or drifts is more attractive than planting them in straight rows. Choose annuals not only for their flower color, but for their form, texture, foliage shape and color. Keep bed designs simple, and avoid a hogepodge of unrelated heights and colors. A mass planting of one variety looks modern and impressive.

A good rule of thumb to follow is to place the tallest plants at the back of foundation plantings, graduating down to the shortest in the front. Island flower beds have the tallest plants in the centre, with other plants graduating outward to the shortest on the outside edge.

Do not be afraid to experiment with new cultivars, colors or even types of annuals. Mixing vegetables or herbs into flower beds can add interest and color. Carrot, beet or basil foliage has interesting form and texture, and as an added bonus, these plants can be eaten.

Match the plant to the site. Cool-season plants in a hot area are bound to burn up. Watch for reflective heat too, as this situation can increase the temperature quickly.

When planning, keep in mind the time commitment and work involved in the preparation and maintenance of flower beds. And plan to have an edge that can easily accommodate the lawn mower where the lawn meets the garden.

Temporary hedges can be made up of castor beans, sunflowers, cosmos and kochia. In addition, annuals can also fill in or add a splash of color in shrub or perennial borders.

White, pink and light yellow flowers and silver foliage make excellent night gardens.

Starting Transplants

To get the maximum flowering from annuals, start plants indoors from seed. If a greenhouse or a bright sunroom is not available, seed can be started under fluorescent lights suspended 15 to 50 cm above the plant trays. The most common mistake is sowing the seed too early, which results in weak, spindly plants, so have a look at the seeding dates in the charts on the following pages as a guide.

For seeding, use flats or shallow pots with adequate drainage holes. Use a lightweight, porous soil-less mixture available from retail outlets, or mix your own medium using equal parts, by volume, of sand and peat moss.

Instructions on the seed package will explain whether to cover the seeds with soil or not. Mist the soil surface with enough water both to wet the seeds and to settle the soil particles around them.

Covering the seed containers with plastic (i.e. kitchen wrap) will keep the soil surface from drying out. Move the trays to a bright, warm spot out of direct sunlight. Check the containers regularly to make sure the soil is not drying out and that condensation is not building up on the plastic cover. Condensation will lead to a disease called "damping off" that will kill the seedlings.

Once the seeds sprout, remove the covering and mist or gently water the seedlings, keeping the surface layer moist. Water-logged soils and condensation at this stage will also lead to damping off.

Handling Seedlings

When the seedlings are large enough to handle (first true-leaf stage), transplant 5 to 6 cm apart into another container. When transplanting, handle the young plants by their leaves as their stems are easily damaged. This damage will result in poor plant performance. Initially, water with a water-soluble fertilizer such as 10-52-10. Weekly applications of a soluble fertilizer such as 20-20-20, (mixed at a quarter strength of the label recommendation) can be given thereafter.

About May 15, place the plants outside during the day to harden off prior to planting. Expose the transplants to the sun gradually; immediate direct sun will burn the delicate tissue. Gradually increase the length of time the plants are kept outdoors, and protect them from frosts. The hardening process takes about 10 to 14 days.

Planting and Maintenance – Including Bedding Plants

After the risk of frost has passed, annuals can be planted in the garden. Prepare the soil by adding a well-rotted manure, compost or peat moss to loosen heavy soils. Incorporate a garden fertilizer at the rate recommended on the container. Do not work the soil when it is wet. After cultivation, rake the bed smooth.

If you are buying bedding plants, look for dark green, healthy plants that are short, stocky and pest-free. Check the tag for height and flower color. Do not be alarmed if the plants are not in flower; they will bloom faster in the landscape if they are not in bloom when planted.

Transplant on a cool, cloudy day, and water the plants well the day before. Plant into moist garden soil, spacing the plants at the recommended spacing. Plant bedding plants at the same depth they were in the original containers, making sure the soil ball is below the soil line. Water with 10-52-10, a starter solution, mixed according to the package directions. If you are not able to transplant on the day of purchase, put the plants in the shade and keep the soil in their containers moist.



Throughout the summer, fertilize once or twice with a soluble fertilizer like 20-20-20. Deep, infrequent waterings are better than light waterings. Deep waterings will encourage deeper rooted plants that are more drought resistant. Water when the soil feels dry to the touch at 5 cm deep. Watering is best done early in the morning, so the plant foliage can dry off before night.

Mulching is a good way to retain soil moisture. Mulch will also help keep weeds under control and keep plant roots cool. Materials like dried grass clippings, sawdust or peat moss can be used for mulch. If a lawn herbicide has been used, only use clippings collected after the lawn has been mowed six times.

Remove the faded flowers (deadhead) to keep plants blooming. While deadheading, watch for signs of insect pests and treat if necessary. Some of the taller plants may need to be staked to keep them tidy. Use bamboo stakes and twist ties.

Tips for success

- ageratum does best where conditions are not too hot or humid
- amaranthus does not like to be overwatered or overfed
- bronze-leaved fibrous begonias do better than green-leaved ones in hot and humid areas
- avoid planting cockscomb until the weather is consistently warm in the spring as cool weather prevents flowering
- remove coleus flower spikes
- keep the roots of New Guinea impatiens moist and cool when first planted
- pinch petunias, snapdragons and pansies when first planted and then again after their first flush to keep them compact and flowering freely

Geraniums

Zonal geraniums are the most common geranium grown. They are propagated by cuttings from healthy plants or by seed started in late January or February.

Ivy geraniums have a trailing habit, with ivy-shaped leaves, and the delicate flowers come in a wide range of colors. They make great hanging baskets, and ground covers. Ivy geraniums prefer shadier locations with temperatures cooler than those preferred by the zonal geraniums.

Scented-leaf geraniums are grown for their fragrant leaves. Lemon, peppermint, nutmeg and apple are a few of the scents available. These plants can be grown as bedding plants, hanging baskets or container plants. The leaves are used for making potpourris, perfumes and flavorings.

The Martha Washington geranium is popular for its large, colorful flowers. Flowers are either single or double petalled and are often bi-colored with decorative stripes. Martha's prefer cool growing conditions.

Wintering Indoors

Geraniums are planted and maintained the same way as any other annual, but unlike other annuals, geraniums are often overwintered indoors.

Geraniums can be overwintered indoors in several ways. Cuttings, 10 to 15 cm long, can be taken from firm but not woody shoots at the end of August or early September. Make the bottom cut immediately below a node, and remove the leaves from the bottom half of the cutting. Allow the cuttings to dry on a countertop for a minimum six hours.

Fill a shallow pot with at least 8 cm of perlite, vermiculite or sand. Place the cuttings into the rooting medium to a depth of 6 to 8 cm. Keep the rooting medium moist but not wet. Place the container in a bright location.

After the cuttings have rooted (6 to 10 weeks) transplant them into pots filled with a sandy-loam soil. Place the plants in a sunny, south-facing window. After the cuttings are established, keep the soil on the dry side. Don't encourage much growth.



Pinch out the growing tips to keep the plants compact and bushy. Stop pinching after March 15. A second crop of cuttings can be taken from established plants as late as February and can be treated as above.

Another way of overwintering geraniums is to dig them up or remove them from their planter boxes before they are damaged by autumn frosts. Gently shake the soil from the roots. Do not cut the tops off. Hang the plants upside down in a dark, cool (4 to 7° C) location, or dig up the plants and store in pots or boxes in a cool, dark spot.

In February, bring the plants out of storage and cut them back. Place them in a soil mix that drains well, then water and place them in a sunny spot. Cuttings can be taken from the new growth and treated as above.

What to Grow in Alberta

The following charts show some general recommendations for annuals to grow in Alberta. For more detailed information, visit your local nursery.

Finding the characteristics you want in the charts is very simple. Look to see if the squares under the heading you want are filled with color. The colored squares have the characteristic noted in the column heading. Note that a forward slash (/) between two common names in the charts simply means there is more than one common name for a particular variety.



Annual Flowers

Common Name Botanical Name	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Ageratum/Floss Flower <i>Ageratum houstonianum</i>	★						6-8							
Amaranth/Joseph's Coat <i>Amaranthus tricolor</i>	★						6							
Amaranth/Love-lies-bleeding <i>Amaranthus caudatus</i>	★						6							
Amaranth /Prince's Feather <i>Amaranthus hybridus</i> var <i>erythrostachys</i>	★						6							
Anatolian Bellflower <i>Campanula macrostyla</i>	★													
Angel's Trumpet & Trumpet Flower <i>Datura metel</i> , <i>D. innoxia</i>	★						8-12							
Australian Blue Fan-flower <i>Scaevola aemula</i>	★						12-16							
Baby Blue-eyes <i>Nemophila menziesii</i>	★													
Baby's Breath, Annual <i>Gypsophila elegans</i>	★						2-3							
Bachelor's Button/Cornflower <i>Centaurea cyanus</i>	★						4							
Balloon Vine/Love-in-a-puff <i>Cardiospermum halicacabum</i>	★						6							



rich soil



normal



sandy

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Common Name <i>Botanical Name</i>	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Balsam Apple <i>Echinocystis lobata</i>	★						4-5							
Basket Flower <i>Centaurea americana</i>	★													
Begonia, Fibrous/Wax <i>Begonia</i> x <i>semperflorens</i>	★						16-24							
Bells of Ireland <i>Moluccella laevis</i>	★						10-12							
Bishop's Flower/White Lace <i>Ammi majus</i>	★						4-6							
Black-eyed Susan/ Gloriosa Daisy <i>Rudbeckia hirta</i>	★						6-8							
Black-eyed Susan Vine <i>Thunbergia alata</i>	★						4-6							
Blanket Flower, Annual <i>Gaillardia pullchella picta</i>	★						4-6							
Blazing Star <i>Mentzelia lindleyi</i>	★													
Blue Lace Flower <i>Trachymene caerulea</i>	★						6-8							
Blue Thimble Flower <i>Gilia capitata</i>	★						4-5							
Browallia/Bush Violet <i>Browallia speciosa</i>	★						6-8							



rich soil



normal



sandy

Common Name Botanical Name	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Bugloss <i>Anchusa capensis</i>	✱						6-8							
Bunny's Tail Grass <i>Lagurus ovatus</i>	✱													
Burning Bush/Fire Bush <i>Kochia scoparia trichophylla</i>	✱						4-6							
Butter Daisy <i>Verbesina encelioides</i>	✱													
Butterfly Flower <i>Schizanthus x wisetonensis</i>	✱						6-8							
Calendula/Pot Marigold <i>Calendula officinalis</i>	✱													
California Bluebell <i>Phacelia campanularia</i>	✱						4-6							
California Poppy <i>Eschscholzia californica</i>	✱													
Canary-bird Flower <i>Tropaeolum peregrinum</i>	✱													
Canary Grass <i>Phalaris canariensis</i>	✱													
Candytuft, Annual <i>Iberis umbellata</i>	✱													
Candytuft/Rocket <i>Iberis amara</i>	✱													

✱ rich soil

✱ normal

✱ sandy

Flower color	Special features	Height	Landscape and other uses
Pink			
Purple			
Blue			
Ornamental seed pods/fruit			
Foliage prominent			
Fragrant foliage/flowers			
Edible flowers			
Other features			
Under 15 cm			
15 - 24 cm			
24 - 50 cm			
50 - 90 cm			
90 - 120 cm			
Over 120 cm			
Border or mass planting			
Planters			
Hanging baskets			
Hedges/screens			
Climbers			
Fresh cut			
Dried			

 attracts birds and butterflies

 **poisonous**

Common Name Botanical Name	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Canterbury Bells <i>Campanula medium</i>	★						8-10							
Cape Daisy <i>Venidium fastuosum</i>	★						6-8							
Cape Marigold <i>Dimorphotheca sinuata</i>	★						4-5							
Carnation, Annual <i>Dianthus caryophyllus</i>	★						20							
Castor Oil Plant <i>Ricinus communis</i>	★						4-6							
Charieis <i>Charieis heterophylla</i>	★						4-6							
Chillean Bellflower <i>Nolana paradoxa</i>	★						8-10							
China Aster <i>Callistephus chinensis</i>	★						5-6							
China Pink <i>Dianthus chinensis</i>	★													
Chinese Forget-me-not <i>Cynoglossum amabile</i>	★													
Chinese Houses/Innocence <i>Collinsia heterophylla</i>	★						3-4							
Chrysanthemum <i>Chrysanthemum carinatum</i> , <i>C. coronarium</i> , <i>C. segetum</i>	★													



rich soil



normal



sandy

Flower color	Special features	Height	Landscape and other uses
Pink			
Purple			
Blue			
Ornamental seed pods/fruit			
Foliage prominent			
Fragrant foliage/flowers			
Edible flowers			
Other features			
Under 15 cm			
15 - 24 cm			
24 - 50 cm			
50 - 90 cm			
90 - 120 cm			
Over 120 cm			
Border or mass planting			
Planters			
Hanging baskets			
Hedges/screens			
Climbers			
Fresh cut			
Dried			

attracts birds and butterflies

 poisonous

Common Name Botanical Name	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Clarkia & Rocky Mountain Garland <i>Clarkia unguiculata, C. pulchella</i>	★													
Cleome/Spider Flower <i>Cleome hasslerana, C. lutea</i>	★						4-6							
Cloud Grass <i>Agrostis nebulosa</i>	★													
Cockscomb <i>Celosia cristata</i>	★						4							
Coleus <i>Coleus x</i>	★						10							
Common Immortelle <i>Xeranthemum annuum</i>	★						4-6							
Coreopsis/Tickseed <i>Coreopsis basalis, C. tinctoria</i>	★													
Cosmos & Yellow Cosmos <i>Cosmos bipinnatus, C. sulphureus</i>	★						5-6							
Creeping Zinnia <i>Sanvitalia procumbens</i>	★						3							
Cup and Saucer Vine <i>Cobaea scandens</i>	★						6-8							
Cupid's Dart <i>Catananche caerulea</i>	★						6-8							
Dahlia <i>Dahlia coccinea, D. pinnata</i>	★						6-8							



rich soil



normal



sandy

[illegible]

attracts birds and butterflies



poisonous

Common Name <i>Botanical Name</i>	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Daisy, Palm Springs <i>Cladanthus arabicus</i>	★						12-15							
Daisy, Swan River <i>Brachycome iberidifolia</i>	★						4-6							
Daisy, Takoka <i>Machaeranthera tanacetifolia</i>	★						6-8							
Daisy, White & Yellow <i>Chrysanthemum multicaule</i> , <i>C. paludosum</i>	★						6-8							
Dames Rocket/Sweet Rocket <i>Hesperis matronalis</i>	★													
Dark Opal Basil <i>Ocimum basilicum</i>	★						8-10							
Desert Evening Primrose <i>Oenothera deltoides</i>	★						6-8							
Dill-leaf Ursinia <i>Ursinia anethoides</i>	★						4-6							
Drumstick Flower <i>Craspedia</i> sp.	★						5-6							
Dusty Miller <i>Centaurea cineraria</i> , <i>C. gymnocarpa</i>	★						6-8							
Dusty Miller <i>Senecio cineraria</i>	★						10-12							

★ rich soil

★ normal

★ sandy

[illegible]

attracts birds and butterflies

poisonous

Common Name <i>Botanical Name</i>	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Dusty Miller, Silver Lace <i>Chrysanthemum pinnatifidum</i>	★						6-8							
English Wallflower <i>Cheiranthus cheiri</i>	★						8+							
Everlasting, Rose <i>Helianthemum roseum</i>	★													
Everlasting, Swan River <i>Helianthemum manglesii</i>	★													
Everlasting, Yellow <i>Helianthemum humboldtianum</i>	★													
Feverfew/Matricaria <i>Chrysanthemum parthenium</i>	★						6-8							
Flax, Scarlet/Flowering <i>Linum grandiflorum</i>	★													
Flora's Paintbrush <i>Emilia javanica</i>	★						4-6							
Flowering Kale/Cabbage <i>Brassica</i> sp.	★						4-6							
Flowering Tobacco <i>Nicotiana glauca</i>	★						4-6							
Fountain Grass <i>Pennisetum setaceum</i>	★						4-6							
Foxglove, Annual <i>Digitalis purpurea</i> 'Foxy Strain'	★						20							

★ rich soil

★ normal

★ sandy

Flower color			Special features			Height			Landscape and other uses		
Pink			Ornamental seed pods/fruit			Under 15 cm			Border or mass planting		
Purple			Foliage prominent			15 - 24 cm			Planters		
Blue			Fragrant foliage/flowers			24 - 50 cm			Hanging baskets		
			Edible flowers			50 - 90 cm			Hedges/screens		
			Other features			90 - 120 cm			Climbers		
						Over 120 cm			Fresh cut		
									Dried		

attracts birds and butterflies

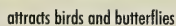
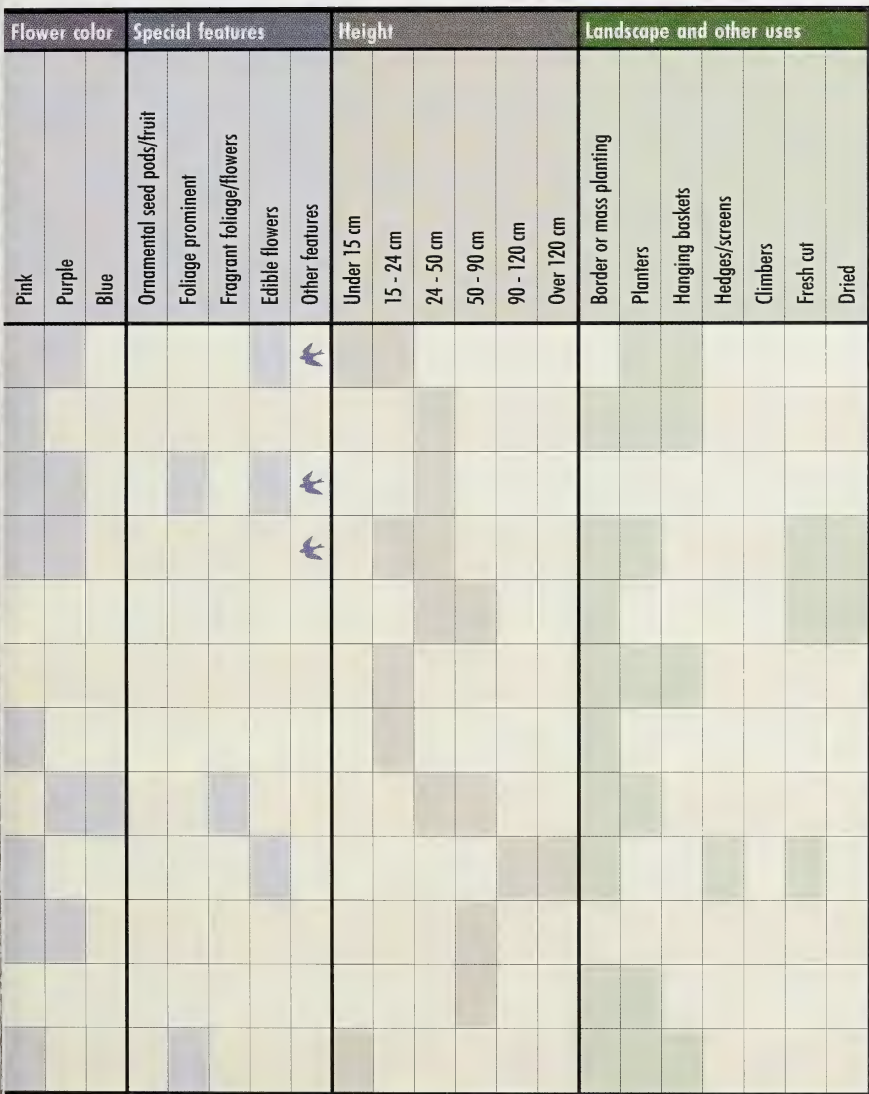
 poisonous

Common Name <i>Botanical Name</i>	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Fuchsia/Lady's Eardrop <i>Fuchsia x</i>	★													
Gazania <i>Gazania ringens</i>	★						4-6							
Geranium <i>Pelargonium x hortorum</i>	★						cutting 8-12							
Globe Amaranth <i>Gomphrena globosa</i>	★						6-8							
Gold Button <i>Matricaria grandiflora</i>	★													
Golden Fleece <i>Dyssodia tenuiloba</i>	★						10-12							
Hawk's Beard <i>Crepis rubra</i>	★													
Heliotrope <i>Heliotropium arborescens</i>	★						24							
Hollyhock, Annual <i>Alcea rosea</i>	★						6-8							
Hollyhock Mallow/High Mallow <i>Malva sylvestris</i>	★													
Honeywort <i>Cerinthe aspera</i>	★						8							
Ice Plant <i>MeSEMBRYANTHEMUM crystallinum</i>	★						10-12							

★ rich soil

★ normal

★ sandy



Common Name <i>Botanical Name</i>	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Impatiens/Garden Balsam <i>Impatiens balsamina</i>	★						4-6							
Impatiens, New Guinea <i>Impatiens</i> 'New Guinea'	★													
Impatiens/Patience Plant/ Busy Lizzy <i>Impatiens wallerana</i>	★						6-8							
Japanese Hop Vine <i>Humulus japonicus</i>	★						4-6							
Job's Tears <i>Coix lacryma-jobi</i>	★						4-5							
Kenilworth Ivy <i>Cymbalaria muralis</i>	★													
Knotweed <i>Polygonum capitatum</i>	★						4-6							
Lantana, Trailing & Common <i>Lantana monevidensis</i> , <i>L. camara</i>	★													
Larkspur & Annual Delphinium <i>Consolida ambigua</i> , <i>C. orientalis</i>	★													
Livingstone Daisy <i>Dorotheanthus bellidififormis</i>	★						10-12							
Lobelia <i>Lobelia erinus</i>	★						12							

★ rich soil

★ normal

★ sandy

Common Name <i>Botanical Name</i>	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Lupine, Annual <i>Lupinus hybrids</i>	★													
Madagascar Periwinkle <i>Catharanthus roseus</i>	★													
Mallow-wort/Malope <i>Malope trifida</i>	★						4-6							
Marigold, African <i>Tagetes erecta</i>	★						4-6							
Marigold, Dwarf Signet <i>Tagetes tenuifolia</i>	★						4-6							
Marigold, French <i>Tagetes patula</i>	★						4-6							
Marvel of Peru/Four O'Clocks <i>Mirabilis jalapa</i>	★						4-6							
Meadow Foam <i>Limnanthes douglasii</i>	★						4-5							
Mesembryanthemum, Tricolor <i>Dorotheanthus tricolor</i>	★						10-12							
Mesembryanthemum, Varigated Heartleaf <i>Aptenia cordifolia</i> 'Varigata'	★						10-12							
Mexican Fire Plant <i>Euphorbia heterophylla</i>	★						6-8							
Mexican Tulip Poppy <i>Hunnemannia fumariifolia</i>	★						4-6							



rich soil



normal



sandy

Flower color	Special features	Height	Landscape and other uses
Pink	Ornamental seed pods/fruit	Under 15 cm	Border or mass planting
Purple	Foliage prominent	15 - 24 cm	Planters
Blue	Fragrant foliage/flowers	24 - 50 cm	Hanging baskets
	Edible flowers	50 - 90 cm	Hedges/screens
	Other features	90 - 120 cm	Climbers
		Over 120 cm	Fresh cut
			Dried

attracts birds and butterflies

 poisonous

Common Name Botanical Name	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Mignonette <i>Reseda odorata</i>	★						3-4							
Milkweed/Bloodflower <i>Asclepias curassavica</i>	★						6-8							
Monkey Flower <i>Mimulus</i> x	★						10-12							
Moonflower <i>Ipomea alba</i>	★						8							
Morning Glory <i>Ipomea tricolor</i> , <i>I. purpurea</i>	★						4-6							
Morning Glory, Dwarf <i>Convolvulus tricolor</i>	★						5-6							
Nasturtium <i>Tropaeolum majus</i>	★													
Nemesia <i>Nemesia strumosa</i>	★						4-6							
Nierembergia <i>Nierembergia hippomanica</i>	★						8-10							
Nigella/Love-in-a-mist <i>Nigella damascena</i>	★						3-5							
Ornamental Gourd <i>Cucurbita pepo ovifera</i>	★						2-3							
Pansy <i>Viola x wittrockiana</i> , <i>V. x williamsii</i>	★						10-12							

★ rich soil

★ normal

★ sandy

Common Name Botanical Name	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Papermoon Starflower <i>Scabiosa stellata</i>	★						5-6							
Perilla/Beefsteak Plant <i>Perilla frutescens</i> 'Crispa'	★						4-6							
Petunia <i>Petunia</i> x	★						8-12							
Phlox, Drummond/Annual <i>Phlox drummondii</i>	★						4-6							
Pimpernel, Common/Scarlet <i>Anagallis arvensis</i>	★						6							
Pimpernel, Flaxleaf <i>Anagallis monelli</i> subsp. <i>linifolia</i>	★						6							
Pincushion Flower <i>Scabiosa atropurpurea</i>	★						5-6							
Poppy, Alpine <i>Papaver alpinum</i>	★													
Poppy, Corn/Shirley <i>Papaver rhoeas</i>	★													
Poppy, Flanders <i>Papaver commutatum</i>	★													
Poppy, Prickly <i>Argemone grandiflora</i>	★						6							
Poppy, Tulip <i>Papaver glaucum</i>	★													

★ rich soil

★ normal

★ sandy

Flower color			Special features			Height			Landscape and other uses		
Pink			Ornamental seed pods/fruit			Under 15 cm			Border or mass planting		
Purple			Foliage prominent			15 - 24 cm			Planters		
Blue			Fragrant foliage/flowers			24 - 50 cm			Hanging baskets		
			Edible flowers			50 - 90 cm			Hedges/screens		
			Other features			90 - 120 cm			Climbers		
						Over 120 cm			Fresh cut		
									Dried		

attracts birds and butterflies

 poisonous

Common Name <i>Botanical Name</i>	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Portulaca/Moss Rose <i>Portulaca grandiflora</i>	★						4-6							
Prairie Genetian <i>Eustoma grandiflorum</i>	★						20							
Purple Groundsel <i>Senecio elegans</i>	★						8-10							
Quaking Grass, Big <i>Briza maxima</i>	★													
Quaking Grass, Little <i>Briza minor</i>	★													
Queen Ann's Lace <i>Daucus carota carota</i>	★						4-6							
Rose Mallow, Annual <i>Lavatera trimestris</i>	★													
Ruby Grass <i>Tricholaena rosea</i>	★													
Russian Statice/Pink Poker <i>Psylliostachys suworowii</i>	★						8							
Safflower <i>Carthamus tinctorius</i>	★						6-8							
Sage, Clary <i>Salvia viridis</i>	★						4-6							
Sage, Mealy <i>Salvia farinacea</i>	★						8-10							

★ rich soil

★ normal

★ sandy

Common Name <i>Botanical Name</i>	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Sage, Scarlet/Salvia <i>Salvia splendens</i>	☀						4-6							
Salpiglossis/Painted Tongue <i>Salpiglossis sinuata</i>	☀						8-10							
Satin Flower/Godetia <i>Clarkia amoena</i>	☀													
Scarlet Runner Bean <i>Phaseolus coccineus</i>	☀													
Sea Purslane/Garden Atriplex <i>Atriplex hortensis</i>	☀						4-6							
Sleepy Daisy <i>Xanthisma texana</i>	☀													
Snapdragon <i>Antirrhinum majus</i>	☀						6-8							
Snow-on-the-mountain <i>Euphorbia marginata</i>	☀													
Star Dust <i>Linanthus androsaceus</i>	☀						4-5							
Statice <i>Limonium sinuatum,</i> <i>L. bondvelli</i> <i>superbum</i>	☀						8							
Stock, Evening Scented <i>Matthiola longipetala bicornis</i>	☀						5-6							
Stock, Ten Weeks <i>Matthiola incana annua</i>	☀						5-6							

★ rich soil

★ normal

★ sandy



Flower color			Special features			Height			Landscape and other uses		
Pink	Purple	Blue	Ornamental seed pods/fruit	Foliage prominent	Fragrant foliage/flowers	Edible flowers	Other features				
								Under 15 cm			
								15 - 24 cm			
								24 - 50 cm			
								50 - 90 cm			
								90 - 120 cm			
								Over 120 cm			
									Border or mass planting		
									Planters		
									Hanging baskets		
									Hedges/screens		
									Climbers		
									Fresh cut		
									Dried		



attracts birds and butterflies



poisonous

Common Name Botanical Name	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Strawflower <i>Helichrysum bracteatum</i>	★						4-6							
Sunflower <i>Helianthus</i> sp.	★													
Sweet Alyssum <i>Lobularia maritima</i>	★						4-6							
Sweet Pea <i>Lathyrus odoratus</i>	★													
Sweet Sultan <i>Centaurea moschata</i>	★													
Sweet William Catchfly <i>Silene armeria</i> , <i>S. pendula</i>	★													
Sweet William/Wee Willie, Annual <i>Dianthus barbatus</i>	★						6-8							
Texas Bluebonnet <i>Lupinus texensis</i> , <i>L. subcarneus</i>	★													
Tidy Tips <i>Layia platyglossa</i>	★													
Toadflax, Morocco <i>Linaria maroccana</i>	★													
Twin Spur <i>Diascia barberae</i>	★													

★ rich soil

★ normal

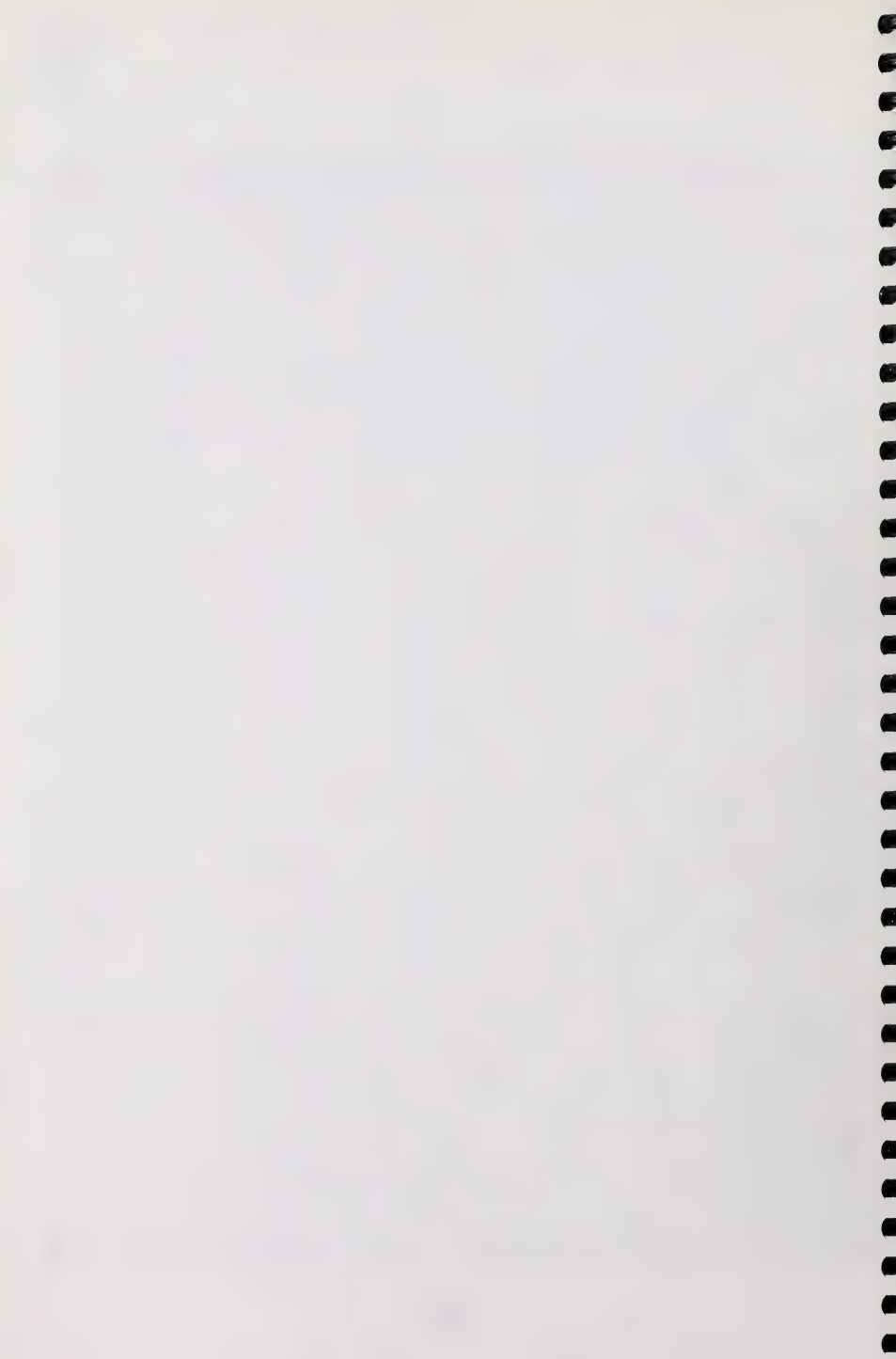
★ sandy

Common Name <i>Botanical Name</i>	Soil			Light			Propagation			Flower color				
	Soil type	Evenly moist	Dry	Full Sun	Partial Shade	Shade	Start indoor - weeks before frost	Seed outdoors - early spring	Seed outdoors - after last frost	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Unicorn Plant <i>Proboscidea louisianica</i>	★						6-8							
Varigated Periwinkle <i>Vinca major</i> 'Variegata'	★													
Verbena <i>Verbena x hybrida</i>	★						10-12							
Verbena, Scarlet <i>Verbena peruviana</i>	★						10-12							
Verbena, Tall <i>Verbena rigida</i>	★						10-12							
Viper's Bugloss <i>Echium lycopsis</i>	★						6-8							
Virginia Sock <i>Malcolmia maritima</i>	★													
Wheat/Plume Celosia <i>Celosia plumosa</i>	★						4							
Winged Everlasting <i>Ammobium alatum</i>	★						6							
Wishbone Flower/Torenia <i>Torenia fournieri</i>							10-12							
Woodruff, Annual <i>Asperula orientalis</i>	★													
Zinnia <i>Zinnia elegans</i>	★						4-6							

★ rich soil

★ normal

★ sandy





Speciality Gardens





Speciality Gardens

Container Gardening

Container gardening has been around since the time of the Hanging Gardens of Babylon. Today, plants are grown in any container that holds soil, whether it be an old pail or boot, wooden barrel, strawberry pot or a cement urn.

Considerations

The size of the container has an important effect; the larger the container, the longer the soil will stay moist. Baskets hanging in sunny locations should be 25 to 30 cm in diameter while 15 to 20 cm baskets are suitable for shady locations. Containers filled with media and then watered are heavy, so they need proper support, whether they are sitting on the deck or hanging.

Containers without drainage can still be used with the addition of a drainage layer. The drainage layer can be made from washed gravel and charcoal or recycled materials like broken clay pots, recycled styrofoam cups, crumpled bedding plant cell packs or used toothpaste tubes.

Planting

Fill the container to 5 cm below the rim with a moist, light, moisture-holding potting soil. The media can be used for about three years before it will need to be changed, but top up the soil level each year by adding fresh potting soil. Use trays to catch the excess water from the container to prevent staining or ruining floor surfaces.

Choose plants of different heights, sizes and textures for interest, and don't be afraid of adding vegetables and herbs. Group plants with the same light requirements in the same container.

Containers are filled full with plants for instant color. Set the plant so there is room for each plant's entire root ball plus some additional soil to fill in around each plant. For example, plant low edging plants like lobelia 7 to 12 cm apart or petunias 10 to 15 cm apart.

Water the container on demand. This may mean watering a container two or three times a day during the summer's heat. Create a water reservoir for containers by taking a 500 ml soft drink bottle, filling it with water, and pushing it upside down into the soil. The water will slowly run out, keeping the soil moist.

Fertilize the containers every 7 to 14 days with a solution with fish fertilizer, 15-30-15 or 10-52-10. Mix the fertilizer at half the recommended rate on the label. Always fertilize when the soil in the container is moist.

Keep the plants deadheaded to keep them blooming all season long.

Ideas for Container Gardening

- petunias come in at least 100 different colors – are excellent for container gardening
- portulaca comes in wide color range; mix them up with other flowers
- use tuberous and fibrous begonias, miniature roses, mums, gaillardia and zinnia species as centrepieces
- impatiens are colorful and flower quickly – excellent in hanging baskets, either alone or in combination with other flowers
- snapdragons, tall or dwarf, fit into baskets or pots
- colorful foliage of coleus varies in size, shape and texture – excellent for contrast and background
- mix allyssum and annual gypsophila – excellent fillers

- use alyssum in raised containers where its fragrance can be appreciated
- helichrysum and dusty miller have silver foliage with variable shape and texture – provide body and filler
- polk-a-dot plant is available in a rainbow of color foliage-mixes as well with alyssum and gypsophila
- tall, cylindrical habit of dracaena spike works as core plant for containers
- Chinese lantern plant has showy leaves and berries that hang out of baskets
- pansies and violets compliment tall plants like snapdragons
- nicotiana and evening scented stock are very fragrant in evening – excellent hanging basket fillers
- tall spike habit of cosmos and dianthus provide contrast in containers
- nierembergia and phlox fill containers evenly
- ivy plants are delightful in hanging pots
- do not overlook strawberries, bush cherry tomatoes and ornamental peppers
- asters, dwarf and tall, can be used
- include a herb plant in each container; basil has several different foliage colors, ranging from yellow to bronze to deep purple
- parsley can fill in the empty spots
- calendula grows fast and has lovely flowers; pinch the plant at transplanting to force it to branch quickly

Butterfly Gardens

Choosing a Site

When choosing a site for a butterfly garden, look for a spot that gets at least six hours of sunlight a day and is protected from strong winds. Butterflies are attracted to hot colored (red, orange, yellow and purple), flat-topped blossom flowers.

Damp spots in gravel, sand or soil serve as a watering hole for the insects. Resting sites can be provided by placing stones in the sun around the garden.

Remember the larva of butterflies are caterpillars, so to have the adults, a few caterpillars have to be tolerated. Avoid using pesticides in the yard.



Food plants for adults and larva

Annuals

alyssum, aster, cornflower, cosmos, dahlias, globe amaranth, lantana, marigold, nasturtium, salvia, stocks, strawflower, sunflower, tithonia and zinnia

Perennial

bee balm, chives, coneflower, coral bells, coreopsis, perennial geraniums, daylilies, hollyhocks, liatris, phlox, rudbeckia, sedum, violets and yarrow

Shrubs/Trees

elm, honeysuckle, lilac, mockorange, poplar and willow

Bird Garden

Set-up

Having a bird garden is as simple as providing food, shelter and water to attract birds into the garden. A bird bath 2 to 7 cm deep supplies water for drinking or bathing. Small birds like chickadees and hummingbirds prefer a shallow bird bath.

Keep the bird bath clean and filled with fresh water. Place the bath close to trees or shrubs, so the birds can dry their feathers and make a fast retreat if a cat shows up. Avoid creating an ambush site by putting the bath too close to shrubbery.

Provide nesting sites, bird houses or nesting structures to make the garden attractive to birds.

Food sources

Fruit bearing trees

bittersweet, chokecherry, crabapples, apples, currant, dogwood, elderberry, hawthorn, honeysuckle, mountain ash, nannyberry, raspberry, Russian olive, saskatoon and snowberry

Perennials and annuals

aster, bee balm, cosmos, daisy, marigold, purple cone flower, roses and sunflower

Allow seed pods to form on the perennials. Keep the annuals clipped to keep them flowering.

Humming birds are welcome guests in the summer. Not only are they beautiful, but they pollinate the flowers they feed from as well as feeding on aphids, gnats, thrips and tiny flies. Flowers that attract the hummers tend to be intensely colored, deep and tubular. Although red is a favorite color, humming birds will also be attracted to bright orange and pink. Favorite flowers are bee balm, cardinal flower, red sage, red columbines, scarlet trumpet honeysuckle and scarlet runner beans.

To keep the hummers in the yard, have a food source blooming all summer long. Feeders will supplement the birds if there is a lapse in blooming flowers. Humming bird feed mixes are available commercially, but a solution of one part sugar and four parts of water can be used to fill feeders. Boil the sugar and water for one to two minutes, then pour the mixture into the feeder and refrigerate the remainder. **Use white sugar only**; honey or any other sweet substance can make the birds ill. It is not necessary to color the solution red; the red coloration of the feeders will draw the birds.

Cleanliness is important in keeping the birds healthy. Change the solution every three days, and once a week, wash out the feeder with hot water. The best time to fill the feeder is in the evening. This is the time when the birds will be taking on lots of food to get them through the night.

Place the feeder in a shady spot in the yard, protected from the wind, but where it can be seen easily. There is a big entertainment factor in watching the birds jockey for a spot at the feeder as these little birds can get very aggressive.

Start with one feeder, and add more as the number of humming bird visitors grows. Keep the feeders going until the last migrating bird has passed through; they will need extra energy for their long migration south for the winter.



Water Gardening

Nothing is more calming than the sound of moving water, unless perhaps it is watching fish swim in a still pond on a warm summer day. The addition of a water feature to a yard can be the garden's crowning glory.

Gardening in water can be intimidating – until you do it. Once a gardener learns how simple it is to grow this way, the gardener is often hooked. Time is then spent planning the next water feature.

The following section is only a guide to growing water plants. Several good nurseries specialize in water gardening and water plants, and their staff can be very helpful. These are the people who can guide the first-time gardener through the process. There are also good books written on the planning and installation of a water feature, even a couple written specifically for prairie conditions.

So come on and get your toes wet.



Water Gardening

Name	Flower color Bloom time	Height	Spread
Submerged/Oxygenators			
Canada Pond Weed <i>Elodea longivaginata</i>	non-flowering	water surface	indefinite
Common Bladderwort <i>Utricularia vulgaris</i>	yellow summer	water surface	30 cm
Hornwort <i>Ceratophyllum demersum</i>	indistinct	water surface	indefinite
Marginal and Emergent Plants			
Arrowhead <i>Sagittaria cuneata</i>	white summer	20-50 cm	indefinite
Blue Water Iris <i>Iris laevigata</i>	blue midsummer	30 cm	indefinite
Bog Bean <i>Menyanthes trifoliata</i>	pink-white	25 cm	indefinite
Bur Reed <i>Sparaganium</i> sp.	inconspicuous		indefinite
Coltsfoot <i>Petasites</i> spp.	white early spring	30 cm	10 cm
Common Cattail <i>Typha latifolia</i>	beige spikes late summer	2.5 m	indefinite
Common Scouring Rush <i>Equisetum hyemale</i>	non-flowering	60 cm	indefinite
Dwarf Cattail <i>Typha minima</i>	rusty brown spikes late summer	45-60 cm	30 cm
Great Bullrush <i>Scirpus validus</i>	inconspicuous	60-215 cm	indefinite
Kermesina Water Iris <i>Iris versicolor</i> var <i>Kermesina</i>	magenta summer	60 cm	indefinite

Planting conditions	Winter protection required	Comments
30-20 cm under water	none, deep water or treat as an annual	excellent oxygenator, does well in shade, roots easily in soil in the pond or in pots
30-150 cm under water	none	needs full sun
60 cm under water	yes, see wintering instructions	non-rooted: propagate by cuttings left to float on water surface or weighted down
15-150 cm under water or bog	none, freeze in	native, full sun
up to 30 cm under water	none	
up to 5 cm under water	none	native
30-120 cm under water	yes, see wintering instructions	native
moist soil at pond edge or up to 10 cm under water	none	flowers before it leafs out
up to 30 cm under water	none	invasive, decorative seed heads
wet, sandy bog or under up to 90 cm of water	none	leafless stocks, with bamboo-type joints
up to 15 cm under water	none	decorative seed heads
0-120 cm under water	none	native
5-10 cm under water	none	also grows in bog soil, divide late summer

Name	Flower color Bloom time	Height	Spread
<i>Plant names are listed alphabetically by common name.</i>			
Knotted Rush <i>Juncus nodosus</i>	inconspicuous	20 cm	indefinite
Mares Tail <i>Hippuris vulgaris</i>	inconspicuous late spring	5-30 cm	indefinite
Marsh Cinquefoil <i>Potentilla palustris</i>	purple	30 cm	indefinite
Marsh Marigold <i>Caltha palustris</i>	bright yellow spring	30 cm	45 cm
Marsh Marigold, White <i>Caltha palustris</i> var <i>alba</i>	white spring	30 cm	45 cm
Marsh Reed Grass/Bluejoint <i>Calamagrostis canadensis</i>	inconspicuous	61-122 cm	indefinite
Parrot's Feather <i>Myriophyllum aquaticum</i>	inconspicuous	5-10 cm	indefinite
Pencil Cattail <i>Typha angustifolia</i>	brown spikes autumn	1.5-2.2 m	indefinite
Pink Flowering Rush <i>Butomus umbellatus</i>	rose-pink summer	90 cm	indefinite
Reed Grass <i>Phragmites australis</i>	purplish, feathery autumn	1-3 m	indefinite
Siberian Iris <i>Iris siberica</i>	blue or blue purple late spring/early summer	45-90 cm	indefinite
Spike Rush <i>Eleocharis palustris</i>	egg-shaped brown spikelets summer	30 cm	indefinite
Stream Horsetail <i>Equisetum fluviatile</i>	non-flowering	75 cm	indefinite
Umbrella Plant <i>Cyperus papyrus</i>	tufts of brown flower sprays	75 cm	indefinite



Planting conditions	Winter protection required	Comments
up to 5 cm under water	none	native
up to 5 cm under water, or bog	none	native, can be invasive
up to 5 cm under water	none	native
bog or up to 10 cm under water	none	native, poisonous
bog or up to 10 cm under water	none	poisonous
bog	none	native
up to 10 cm under water	annual	bright green feathery stems form vines that will trail over pond surface
20-60 cm under water	none	invasive, decorative seed heads
up to 30 cm under water	none	do not plant in natural ponds, can be invasive
moist soil at pond edge	none	invasive, decorative seed heads
bog	none	will grow in drier soil
bog or up to 5 cm under water	none	native, great vertical texture, ideal for tubs
up to 30 cm under water	none	native
up to 2.5 cm under water	overwinter indoors as houseplant	attractive addition to tub garden

Name	Flower color Bloom time	Height	Spread
Free-floating Leaves			
Water Hawthorne <i>Aponogeton distachyos</i>	white early summer and late autumn	5-10 cm	1.25 m
Water Iris, Yellow <i>Iris pseudacornus</i>	yellow midsummer	90 cm	indefinite
Water Iris, Variegated <i>Iris pseudacornus</i> var <i>variegata</i>	yellow midsummer	90 cm	indefinite
Water Plantain <i>Alisma plantago</i>	tiny white summer	75 cm	45 cm
Water Sedge <i>Carex aquatilis</i>	narrow brown spikes summer	40 cm	indefinite
Western Dock <i>Rumex occidentalis</i>	reddish clusters spring	.5-1.5 m	20 cm
White Water Arum <i>Calla palustris</i>	white spathe spring	25 cm	30 cm
Wild Rice <i>Zizania aquatica</i>	pale green summer	90 cm	not applicable
Rooted but Floating Leaves			
Broad-leaved Pondweed <i>Potamogeton natans</i>	inconspicuous	water surface	indefinite
Floating Marsh Marigold <i>Caltha natans</i>	white-pink spring	0-30 cm	indefinite
Water Smartweed <i>Persicaria amphibium</i>	pink summer	water surface	indefinite
White Water Crowfoot <i>Ranunculus aquatilis</i>	white summer	0-5 cm	indefinite
Yellow Water Crowfoot <i>Ranunculus gmelinii</i>	yellow summer	0-5 cm	indefinite



Planting conditions	Winter protection required	Comments
up to 60 cm under water	under ice	annual, good in part shade or shade
up to 30 cm under water	none	known as yellow flag or water flag
up to 30 cm under water	none	interesting white and green variegated leaves
up to 30 cm under water	none	native
bog or up to 30 cm under water	none	native
bog	none	common wild plant
up to 10 cm under water	none	produces red/orange berries
20 cm under water	annual fall seeding recommended	self seeds
5-120 cm under water	yes, see wintering instructions	native to Alberta, showy bronze foliage
up to 25 cm under water, or bog	none	native, poisonous
up to 60 cm under water	none	native to Alberta, does well in shallow water or moist soil, will root on bank and float out onto water
5-120 cm under water	yes, see wintering instructions	native
up to 30 cm under water	none	native

Name	Flower color Bloom time	Height	Spread
Free Floating			
Common Duckweed <i>Lemna minor</i>	inconspicuous summer	water surface	indefinite
Fairy Moss <i>Azolla caroliniana</i>	non-flowering	water surface	indefinite
Frogbit <i>Hydrocharis morsus-ranae</i>	tiny white summer	water surface	2.5 cm
Water Hyacinth <i>Eichhornia crassipes</i>	pale bluish lilac late summer	water surface	20 cm
Water Lettuce <i>Pistia stratiotes</i>	inconspicuous late summer	15-30 cm	indefinite
Water Soldier <i>Stratiotes aloides</i>	inconspicuous summer	30 cm	indefinite
Water Lilies <i>Nymphaea</i> (flower June through October)			
Attraction	deep garnet June – October	water surface	1.3-1.5 m
Aurora	yellow-apricot, turning red	water surface	60-90 cm
Cape Cod <i>Nymphaea odorata</i>	pale to mid pink	water surface	1.3 m
Chromatella	canary yellow	water surface	1 m
Comanche	yellow-apricot, turning orange-red	water surface	1.4 m
Common White	white semi-double	water surface	1.5-1.8 m
Escarboucle	red tipped white petals, semi-double	water surface	1.3-1.5 m



Planting conditions	Winter protection required	Comments
floats	annual, or if left in deep pond will sink to bottom for winter	native, will need to be thinned out
floats	annual	absorbs fish waste, fast grower, good fall color, will need to be thinned out
floats	annual	prefers still, shallow water, may root into mud on pond bottom, will need to be thinned out, great snail food
floats	difficult to overwinter in house, easier treated as annual	needs full sun and constantly warm temperatures to flower in Alberta, great pond scrubbers
floats	treat as annual	thin as necessary
floats	treat as annual	
35-90 cm from soil surface to water surface	required, see wintering instructions	medium to large ponds
30-45 cm from soil surface to water surface	required, see wintering instructions	tub garden or small pond, mottled foliage that thrives in heat
30-60 cm from soil surface to water surface	required, see wintering instructions	small to medium pond
30-45 cm from soil surface to water surface	required, see wintering instructions	any size pond
30-45 cm from soil surface to water surface	required, see wintering instructions	medium to large pond
30-90 cm from soil surface to water surface	required, see wintering instructions	medium to large ponds
30-45 cm from soil surface to water surface	required, see wintering instructions	medium to large ponds

Name	Flower color Bloom time	Height	Spread
Gonnere	white double	water surface	1-1.5 m
Marliac White	white	water surface	1-1.3 m
Perry's Baby Red	dark red	water surface	75 cm
Pink Gonnere	light pink double	water surface	1.3 m
Red Pygmy	deep pink	water surface	75 cm
Soiux	orange-yellow to orange-red	water surface	1.3 m
Virginalis	white	water surface	1-1.3 m
Virginia	cream to pale yellow, fragrant semi-double	water surface	1.5-1.8 m
William B. Shaw	pink	flowers rise above water surface	1-1.3 m
Yellow Pygmy	canary yellow	water surface	60 cm
Pond Lily (<i>Nuphar</i>)			
Yellow Pond Lily	yellow	water surface	1.3-1.5 m



Planting conditions	Winter protection required	Comments
30-45 cm from soil surface to water surface	required, see wintering instructions	medium to large ponds, bronze young leaves
30-45 cm from soil surface to water surface	required, see wintering instructions	any size pond
20-30 cm from soil surface to water surface	required, see wintering instructions	container gardens or small pond
30-45 cm from soil surface to water surface	required, see wintering instructions	medium to large ponds, young leaves purple blotched
15-45 cm from soil surface to water surface	required, see wintering instructions	small container gardens
30-45 cm from soil surface to water surface	required, see wintering instructions	medium to large pond
35-45 cm from soil surface to water surface	required, see wintering instructions	any size pond, purple bronze leaves, reliable
30-45 cm from soil surface to water surface	required, see wintering instructions	medium to large pond
30-45 cm from soil surface to water surface	required, see wintering instructions	small to medium pond
15-45 cm from soil surface to water surface	required, see wintering instructions	small container gardens
30 cm from soil surface to water surface	required, see wintering instructions	native to prairies

Wintering Aquatic Plants

Once a thin layer of ice forms on the pond on a couple of mornings, it is time to get the pond and the plants ready for winter.

Steps to winterizing the pond and the aquatic plants:

- Leave the pond full of water overwinter. This makes the equalizing of the pond easier in the spring. Some mud and organic debris should be left in the pond.
- Leave hardy marginal and emergent plants in place. Trim back the foliage either in the fall or spring. Rhizomes of hardy northern aquatics will survive as long as they have adequate food reserves and are not root bound. Even if the mud freezes around them, they will be able to survive.
- Remove the floating aquatics and compost or mulch them. The duckweed will sink to the bottom of the pond to overwinter.
- Move questionably-hardy varieties indoors.
- Protect fish. Overwinter them either in an aquarium or by placing a stock tank or pond heater and an oxygenating plant in the pond. Gold fish can be overwintered either in large garbage bins in a cool spot (1 to 5°C) with an oxygenator plant in the container with them or in an aquarium.
- Remove and clean pumps. Drain and clean bio-filters.
- Bog type bio-filters should be left filled with water, but remove the pumps.
- Netting placed over the pond will catch the falling leaves and reduce spring clean-up. Large amounts of decaying plant material in the bottom of the pond steal oxygen from the water.

The deep water aquatics, like the water lilies and oxygenators, must not be frozen. These plants need special treatment for getting them through the winter. Here are some methods for overwintering this plant material:

- Place plants, pot and all, in a slightly larger tub. Cut off the old leaves. Fill the tub with water until the plant crown is well covered. Choose a cool (5 to 7°C) spot with indirect light. Keep the tub filled with water until spring. Occasionally top up the container with fresh water to prevent stagnation. This method is not recommended for the hardy marginals where cold temperatures are necessary for their dormancy.



- The rhizomes can also be stored in plastic bags with wet peat moss or damp sand. The drawback to overwintering with this method is that the plants will take longer to establish themselves the following spring. Remove the rhizomes from the pot, wash them clean and trim the roots as well as the old leaves. Place the rhizomes in wet peat moss or damp sand in sealed plastic bags. Store the bags in a dark and cool (1 to 5°C) spot.
- The lilies can be stored in their pots in cold storage. Trim off the old leaves, and wrap the pot and all in burlap; then put them in a plastic bag. Once again, store at a cool 1 to 5°C, and check the pots occasionally to be sure the soil is wet. But make sure the pots are not sitting in water. A hard-sided plastic container with a snap-on lid can be substituted for the plastic bag. It is easier to move the heavy plant pots around when they are in these plastic containers.
- The hardy marginals, oxygenating plants and the lilies can be left in the pond provided that the pond does not freeze solid. In Alberta, that means the pond must be at least 1.2 meters deep. To ensure the survival of the lilies, deep water aquatics and oxygenators, they must be below ice. Trim foliage and move deep water plants to the deepest part of the pond where the risk of freezing is reduced. Hardy marginals can remain in place on the pond shelves, as they can survive being frozen in the ice. Trim back the dead foliage in the fall or spring.

Once the pond surface has a couple of inches of ice, cover it with bales of hay or straw. First, cover the pond surface with boards for the bales to rest on; then tightly pack the bales on the boards. Pull a tarp over the bales to keep them dry. Remove the insulation layer in the middle to the end of March in the following spring.

Hardy marginals, grown in tubs, can be overwintered by burying them in their pots in the ground. In the fall, dig a hole large enough for the pot in the garden or flower bed. Drop the pot and all into the hole and backfill. Mark the spot, so it is easy to find the following spring.

In the spring, after the ice melts, clean any leaves from the pond surface and remove any accumulated debris from the pond bottom. Repair and replace any of the pond edging, or anything that has been displaced by freezing action.

Top up the water levels. If using a chlorinated water supply, allow the pond to sit for several days to dissipate the chlorine. Once the chlorine has dissipated, add 15 to 20 liters of natural pond water to help the pond establish a natural balance.

When the pond water temperature is 7 to 10°C (usually in May), return the water lilies that have been overwintered indoors to the pond. Lilies can be put in the pond when the water is cooler, but they will not grow until the water temperature warms up.



Bulbs





Bulbs

Bulb plants will grace flower beds with color from snow melt to fall. Whatever the gardener wants, a blast of spring color or dauntless summer blooms of bright colors or pastels, bulb plants can fill the bill.

Spring Flowering Bulbs

Selecting Bulbs

- Select bulbs for size and firmness. Avoid bulbs with deep cuts, blemishes or soft spots.
- The paper covering does not need to be intact.
- The larger the bulb – the larger and more flowers produced. Bulbs for naturalizing do not have to be the biggest.
- Prior to planting, store bulbs in a cool place, like the refrigerator, in paper or open plastic bags.

Location

- Open and sunny locations with a little shade in the afternoon will lengthen the flowering period.
- Foundation plantings on the south and west sides force the bulb into early growth and will shorten the flowering time because of blasting. Select later maturing bulbs for these locations.
- Combine in odd numbered masses, avoiding straight rows. Planting later flowering bulbs with early flowering plants in the same spaces will mean color all spring long.
- Well drained soil is a must, so improve the soil if necessary. Dig the bed to a depth of 30 to 45 cm and incorporate bonemeal or 11-52-0.

Planting

- Plant bulbs early in the fall to allow for root establishment (daffodils in late August or early September). Mulching late planted bulbs before the ground freezes may buy some root establishment time.
- Dust the bulbs with a bulb dust to prevent disease and insect problems.
- Plant bulbs 5 cm deeper than the recommended depth to allow for the planting of annuals above.
- Place point or nose of bulb up, cover with soil and firm.
- Water the bed deeply. Bulbs left in place from year to year need to be well watered in the fall to allow for good root establishment.
- Mulching to a depth of 5 cm after the ground has frozen to 5 cm deep prevents frost heaving.

After Flowering Care

- After the flowers fade, cut them off with a sharp knife or scissors, leaving the flower stem. Let the foliage die back naturally.
- Fertilize at the end of flowering with 10-30-10 or bulb fertilizer (4-10-8 at the rate of 1.5 kg/ 10 m²) to increase the food storage of the bulbs.
- Bulbs can be left in place for three to five years. Bulbs used for naturalizing will need to be lifted when their blossoms get small and few in number.
- To increase the number of bulbs, to rearrange the planting or to rejuvenate a crowded planting, lift and replace the bulbs. Lift bulbs anytime after the foliage dies. Replant immediately or air dry and store them in a warm, well-ventilated room. The plants can also be dug once flowering is finished and placed in a nursery area (heeled in). The foliage is left to mature, then the bulbs can be dug, cleaned and stored.

Although tulips and scilla (squills or bluebells) are the spring bulbs most commonly seen in Alberta gardens, several other, less familiar kinds have proven hardy in the province.

The following bulbs have generally performed well in Alberta.

• Tulip

Most tulip cultivars will perform well the first season after planting, provided they are planted by late September and well watered in. In some locations, tulips will gradually deteriorate in a few years. Cultivars of Single Early, Double Early, Mendel, Darwin and Lily Flowered are commonly available.

Species tulips such as *Tulipa* (T.) *tarda*, *T. kolpakowskiana*, *T. turkistanica* and *T. urumiensis* can perform well in Alberta.

• **Narcissus**

Daffodil is a common name that can be used for all species and cultivars of narcissus, but typically, the name applies to the large yellow fragrant types. Narcissus require warm, damp soils at the time of planting. Bulbs planted late in the fall (after mid-October) will not bloom in the spring. Cultivars of the Trumpets, Large and Small Cupped, Doubles, Jonquils and Tazettes may be planted.

• **Crocus**

The Alberta climate limits the types of crocus that can be grown here, just as with tulips and daffodils. Crocus prefer a sunny site with well-drained soil rich in humus. They do best on the east side of buildings where the heat from the building helps them establish roots. Avoid the hot sun of the western and southern exposures.

Species that have proven hardy are: *Crocus* (C.) *ancyrensis*, *C. chrysanthus*, *C. speciosus*, *C. dalmaticus*, *C. etruscus*, *C. longiflorus*, *C. susianus* (*C. angustifolius*) and *C. tomasinianus*.

• **Scilla**

Scilla, commonly known as squills, are easy to grow in sun or shade. They self-propagate quite easily.

Recommended species are: *Scilla* (S.) *bifolia*, *S. sibirica*, *S. sibirica alba*, and *S. sibirica taurica*.

• **Other Spring Flowering Bulbs**

Grape Hyacinth

Muscaria (M.) *armeniaceum*, *M. azureum*, *M. botryoides*

Glory-of-the-Snow

Chionodoxa (C.) *luciliae*, *C. sardensis*

Fritillary

Fritillaria (F.) *pallidiflora*, *F. meleagris*, *F. pudica*



Flowering Onions

Allium (A.) *caeruleum* (A. *azureum*) , A. *oreophilum* (A. *ostrowskianum*),
A. *moly*, A. *neapolitanum*, (A. *cowanii*)

Fall Crocus

Colchicum autumnale

Bulbocodium

Bulbocodium vernalum

Striped-Squill

Puschkinia (P.) *scilloides*, P. *libanotica*, P. *libanotica alba*

Dwarf Iris

Iris reticulata

Summer Blooming Bulbs

The bulbs in this group need to be lifted from the ground in the fall, cleaned and then stored for the winter. This small amount of extra work should not deter a potential grower from planting these beauties.

• Gladiolus (glads)

Glads are commonly grown as a cut flower because of their elegant appearance in a floral display. The spike of tightly-arranged florets open progressively from the bottom up. Glads come in a broad color range, from white to a purple so dark it looks black. As an added bonus, the flowers can be a single color or a combination of two or three colors.

Glad corms are sold in 5 different size classifications from miniature (100), where the bottom floret is under 6 cm in diameter, to the giants (500), with the bottom floret being 14 cm or larger. A corm looks like a bulb, but when cut open, it is solid and cannot be peeled apart like a true bulb. The glad stores energy over the winter in a corm.

Buy firm, plump corms and avoid ones with green or black spots. Corms with a high crown will produce a good flower stalk. When planting corms that have been overwintered, inspect them before planting and discard any rotten ones.

Glad's require a full sun location protected from the wind. Any well-drained, deeply tilled soil is acceptable. Incorporating bonemeal or 11-48-0 at a rate of 60 gm/m² will give the corms an extra boost and improve their performance. Gladiolus thrips ruin the flowers very quickly, so treat the corms before planting with a bulb dust that contains both a fungicide and an insecticide. This practice will destroy thrips that may have overwintered on the corm.

Plant corms 8 to 13 cm deep and 10 to 15 cm apart as soon as the soil can be prepared in the spring. Once the plants are showing one to two leaves, the soil can be mulched. This practice will help retain soil moisture and keep the weeds under control. Mulching materials can be dried grass clippings, sawdust or peat moss. After applying a herbicide to the lawn, wait six mowings before collecting clippings for mulch.

Deep watering of the plants after they have emerged is necessary for good flowering and corm production. Glads, depending on the weather conditions, require 30 cm of irrigation every 10 to 14 days. Staking the plants and flower stems will help prevent wind breakage and will produce a straight stem. Bamboo stakes and plant ties are ideal.

When cutting flowers, choose the flower stalks with two to three flowers open. Cut flowers early in the morning, when they are fresh and moist. Use a sharp knife and leave at least four leaves on the plant, so the plant can produce a new corm.

Harvest the corms in the fall, usually in October. A warm sunny day is ideal for harvest. Cut off the dried tops about 2 cm above the corms. If the weather is good, leave the corms in the sun to dry for a few hours, then bring them in to a warm, dry place (27 to 32°C) to cure.

When the old corm separates easily from the new one, clean off the soil and loose outer skin. Dust the corms with bulb dust and cure for another three to seven days. The corms can be stored in a cool (3 to 5°C) dry spot in open trays, mesh bags or old nylon stockings. Proper curing is essential to prevent the corms from decaying during storage.

• **Tuberous Begonia**

Begonias are wonderful plants that grow in spots where they get the morning or late evening sun. They grow best in a rich, well-drained soil protected from wind and driving rains. Some cultivars work well for bedding, while others make excellent hanging baskets.



Whether planting old tubers or buying new ones, choose tubers that are firm and blemish-free. Plant tubers about mid-March into pots or flats filled with a good quality, moist potting soil. Push the tuber into the moistened potting soil, hollow side up, until the tuber top is flush with the soil surface. Place the pots or flats in a warm, brightly lit room. Keep the soil moist and fertilize occasionally with 20-20-20. If started in flats, the plants will have to be transplanted when they are 5 cm tall. Take care not to disturb the roots when transplanting.

After hardening them off, plant the begonias outdoors after the danger of frost is past. Feed the plants monthly with a liquid fertilizer like 20-20-20 or 15-30-15 to keep them producing flowers. Stop fertilizing in mid-August, to allow the plants to begin to harden off.

On a warm sunny day after the leaves have been blackened by autumn frost, dig up the plants, leaving as much soil on the roots as possible. Store the whole plant, with the soil intact around the roots, in a well ventilated room at 12 to 15°C until the stem separates easily from the tubers. Clean the soil from the tuber, dust with a fungicide and cure for ten days before storing.

Store the tubers in vermiculite, peatmoss or sand in a cool spot (4 to 7°C) until it is time to replant the following March. Keeping the storage media slightly damp will keep the roots from shrivelling. Check the tubers regularly to make sure they are not rotting.

• Dahlias

Dahlias come in a wide range of heights, flower forms and flower sizes. They grow best in a warm sunny spot, but will tolerate partial shade if they have a rich moist soil.

Plant dahlia tubers one week before the last spring frost, unless they have been presprouted. With presprouted tubers, plant them one week after the last spring frost. Plant the roots with the top end about 10 cm deep. Clumps of tubers can be divided to increase the number of plants, but be sure to include part of the old stem with each piece as growth shoots will only develop from the buds located there.

The taller-growing dahlia cultivars require staking to prevent breakage. Plant a short stake with the tuber at planting time. Replace the short stake with a taller one when needed. Replacing the stake this way will prevent it from being pushed through the tuber.

After a killing frost, cut the tops back leaving about 10 cm of stump above the soil. Delay digging the tubers until there is the threat of a hard freeze that could damage the roots in the soil. The longer the tubers are in the ground, the less time they need to be stored inside.

After lifting the tuber clumps, turn them upside down to drain water from the hollow stems. Gently remove the soil from around the tubers, taking care not to break them, as the roots cannot be salvaged if broken. Dust the clean roots with bulb dust. Store in moist peat or vermiculite at a temperature of 5°C. Check the tubers occasionally to be sure they are not shrivelling or rotting in storage.

An alternate way to store the tubers is to lift them; then, instead of cleaning off the soil, store the roots 'as is' in a cool spot. When the soil begins to dry to the cracking point, sprinkle the tubers with water to keep the soil from separating from the roots.

• **Cannas**

The canna has large flowers up to 10 cm in diameter that look like gladiolus. The flower color ranges from yellow to red. They are regal plants that make excellent specimen plants in pots or focal points in flower beds. Cannas produce a fleshy rhizome that is dug and overwintered. They do best with plenty of moisture in a full sun location sheltered from wind.

Canna rhizomes can be cut into pieces with an eye, like potatoes, and planted. Start cannas indoors 10 to 12 weeks before the last frost of the spring. Plant the rhizome horizontally into a good quality, moistened potting soil. Cover the rhizome with 8 to 10 cm of soil. Place the pots in a warm, brightly lit room and keep the soil moist.

After hardening off, plant the rhizomes outdoors after the danger of frost has passed. Space cannas 30 to 38 cm apart into a rich, well-drained soil. Feed the plants monthly with a liquid fertilizer like 20-20-20 or 15-30-15 to keep them producing flowers.

Harvest cannas on a warm sunny day once the plants have been damaged by the frost. Cut off the foliage at ground level, dig the tubers and turn them upside down for a few hours to dry. Bring the tubers indoors to a warm, airy room. Allow tubers to dry for several days, but do not let them shrivel. As with dahlias, pack the cleaned rhizome into vermiculite or sand and store at 5°C. Check the rhizomes occasionally through the winter, and sprinkle the media with water to prevent shrivelling if necessary.



Perennials





Perennials

Planning a Perennial Bed

Planning a perennial bed is an exciting process because perennials will reward you with beauty and color for years to come. The planning process is important because it is easier to match plants to the growing conditions than it is to change the growing conditions to match the plants.

After deciding the location of the perennial bed, do an appraisal of the site. Take note of the total hours of exposure to the sun, the soil conditions and the prevailing winds during both summer and winter. Winds can tear delicate plants in the summer and will affect how the snow accumulates in the yard in the winter.

Since a perennial bed is a long-term planting, soil testing and amendment are important. Incorporate organic matter to improve soil texture and, if indicated by the soil test, add fertilizer as well.

A well-planned perennial bed changes constantly throughout the growing season. Few perennials will flower for the entire season, so mixing different plants allows color to last from early spring to late fall. Choose plants for their form, texture, foliage and height in addition to their blossom time and color.

Arrange plants according to their height, so they can all be seen. Avoid a step-like appearance by varying plant heights in the different zones of the planting bed to give a natural appearance. Perennials tend to be planted singly or in groups of odd numbers. For example, peonies seem to look best when planted singly, whereas iris lend themselves to planting in clumps of three or five.

Unlike tree plantings, perennial beds can easily be changed. Simply dig up plants and move them if they are not in the right spot.

Winter Care

Water the plants well just before the ground freezes in the fall, to prevent root damage from cold dry soils. Mulching newly planted perennials will help them survive their first winter. Apply mulch materials (clean straw, peat moss or leaves) once the ground has frozen several centimetres deep. Avoid covering the crowns of peonies, delphiniums and poppies as this can cause rot problems in the spring.

Do you cut the dead perennial foliage away in the fall? This material can be cut off or left standing, with the exception of the foliage of the peony, iris, bishops cap and lilies, which should be removed to prevent disease the following growing season.

Removing the dead foliage does eliminate overwintering sites for diseases and insects. However, leaving the foliage can help hold a snow cover during the winter, and the seed pods can be attractive in the snow. Remove the tops after the frost has killed the foliage, so the plant can store as much energy in the root as possible, and never cut back evergreen perennials.

Selections

• Iris

Irises are divided into two main classes – bearded and beardless. Bearded irises have the small fuzzy projections on the falls or three drooping petals.

Bearded Irises (*Iris germanica*)

Bearded irises are available in a wide range of heights (15 to 100 cm), flowering periods and colors. The short to medium height cultivars seem to do better in Alberta. This type of iris prefers sunny, well drained locations. Shading and spring water puddling can encourage root rot, and shading decreases the flowering. Divide the plants every three to four years to prevent the centre from dying out.

The best time to divide irises is in early August. Cut the leaves off 8 cm above the rhizome and dig up the entire clump. Using a sharp knife, divide the clump into smaller sections, each consisting of a rhizome with leaves attached. Younger, more vigorous rhizomes (from the outside of the clump) are best for replanting. Plant just below the soil level and water well.

Mulching the first winter may increase winter survival. Once the plant is established, mulching should not be necessary. Container-grown plants can be planted throughout the growing season.

Beardless or Siberian Irises (*Iris sibirica*)

Beardless or Siberian irises stand up well to winds and winter. Siberians can be planted in either partial or full sun locations, but try to avoid hot, dry sites. They adapt to a wide range of soils, but prefer an evenly moist soil. These irises can be divided every eight to ten years, and division is best done in September. Plant them about 3 to 5 cm below the soil surface and water well. Mulching the first winter may increase winter survival.

There are many cultivars of both the bearded and beardless iris that can be grown in Alberta gardens.

Yellow flag iris or Water flag iris (*Iris pseudacorus*)

Yellow flag iris or Water flag iris are best planted in full sun in shallow water or in a bog garden, although they will adapt to a dryer spot. This iris is 90 cm tall, with green to blue green foliage and produces yellow flowers in June.

Dwarf iris (*Iris pumila*)

Dwarf iris prefers a well-drained soil. This tiny plant, under 15 cm tall, has finger-sized foliage. Avoid high nitrogen fertilizers when growing this plant.

Consider these other iris species for Alberta

Gold bearded iris – *Iris flavissima*, Blueflag iris – *Iris versicolor*, Grass iris – *Iris graminea*, Pilgrim iris – *Iris ruthenica*, Season iris – *Iris spuria* and Virginia iris – *Iris virginica*.

• **Lily**

Many hardy hybrid lily cultivars have been bred for the prairies. Lilies are best planted or transplanted in the fall. Planting can be done in April or early May, but the plants will not have as many flowers nor will they grow as tall as a fall-planted bulb.

Lilies start growing very early in the spring. If the young shoots or sprouts are broken at this time, that bulb will not grow again until it has gone through another cold treatment. When transplanting, prevent the bulb from drying out by planting it as soon as possible after digging.



Lilies prefer full sun but will tolerate some shade. They grow well in a moist soil with good drainage. Plant with the growing point up, 7 to 8 cm below the soil level.

Lilies require plenty of nourishment. Use a complete fertilizer like 10-20-10 or 15-30-15 until blooming is finished. Remove faded blossoms. In the fall, remove the dead tops about 2 to 3 cm above the ground.

Asiatic hybrid lilies grow 38 to 50 cm tall and flower anywhere from early to late summer. They should be planted in full sun. The flowers come in a wide range of colors, but lack a scent. Asiatic lilies are divided into three classes:

- Class A has upward facing flowers and are very showy.
- Class B have out-facing flowers with more flowers per stem than Class A.
- Class C flowers are down-facing and have the most blossoms per stem.

Martagon lilies will grow in partial shade and range in height from 75 to 120 cm. The flowers bloom in late spring to early summer and are shaped like small Turksaps.

Hardy species lilies include

Lilium (L.) *canadense*, *L. cernum*, *L. concolor*, *L. dauricum*, *L. pumilum*, *L. amabile*, *L. callosum*, *L. martagon*, *L. hansonii*, *L. tigrinum*, *L. tsingtauense*, *L. davidii regale* and *L. philadelphicum*.

• **Garden Chrysanthemum**

Garden chrysanthemums – mums – prefer full sun, but they will tolerate some shade.

Mums need to be rejuvenated periodically. In the spring, dig up the plant and discard the older woody portions. Separate the young shoots and then plant them slightly deeper than they were on the mother plant. Keep the soil moist until the shoots become established. During dry weather, keep the plants well watered.

Water the plants in well just before freeze up, and then mulch to help protect the plants during the winter. Winters with little snow cover and fluctuating temperatures are hard on garden mums. Watering in the early spring before growth starts may be necessary after such a winter.

The following Agriculture and Agri-Food Canada chrysanthemum cultivars developed at Morden have proven to be the hardiest on the prairies:

- Morden Aztec (double bronze)
- Morden Canary (double yellow)
- Morden Candy (double pink)
- Morden Cameo (double, creamy-white)
- Morden Delight (double bronze)
- Morden Eldorado (double yellow)
- Morden Everest (double white)
- Morden Fiesta (double, rosy-purple)
- Morden Garnet (double, cardinal-red)

• Peony

The peony is a tough, long-lived perennial that often survives on old farmsteads along with the lilacs and caragana. Peonies prefer a rich clay-loam, well-drained soil and full sun.

Container-grown peonies may be planted at any time, but plants should be lifted and divided in September. Good soil preparation is a must as this perennial will be in place a long time. Incorporate peat moss or compost into the bed, then dig a hole and place the crown so the buds are 3 to 5 cm below the soil surface. Avoid planting any deeper as the plant will not flower. Firm the soil around the crown and water in. When dividing up the crown, each division should have three to five buds or eyes.

Frequent, shallow cultivation is the only care required for the first two years. Peonies are heavy feeders and will respond to a spring application of a good garden fertilizer or bonemeal mixed shallowly into the soil around the plants.

The heavy flowers of the peony tend to end up lying on the ground when subjected to winds or heavy rains. Wire hoops with at least three legs will support the flowers. Put the hoops in place before the leaves unfold.

After a killing frost, cut the peony tops off just above the crown and remove all refuse and tops from around the plants.

Blooms cut at the loose bud stage will open and last longer than those cut when flowers are fully open. When cutting, do not remove more foliage from the plant than necessary as losing too much foliage can weaken the plant.



Dry peonies by removing the leaves and hanging the plants upside down by the stems. Hang them in a dark, warm spot with good air circulation. Dark reds and pinks have the best color retention when drying.

Ground Covers

Description

Ground covers are any low-growing plant that prevents soil and water loss by covering the ground surface. These plants can cover the ground under trees or shrubs, or they can be used in areas where something other than grass is desired. Annuals, herbaceous perennials, vines, woody plants, herbs, ornamental grasses or even low growing edible plants can be considered for ground covers.

Growth

Some ground covers grow quickly, covering a 20 cm area in one summer, while others grow more slowly. Some of the quick spreading ones like the ornamental grasses, Bishop's goutweed or mint can be very aggressive (invasive) and need to be contained. Containment can be as simple as planting them in a bed surrounded by sidewalks or buildings.

Many of the herbaceous perennial ground covers will die out in the centre as they grow outward. Lifting and dividing the plants every few years keeps them looking their best.

To get maximum performance from ground covers, each species must be used in the proper site. Good site selection for each plant will ensure a healthier plant. Healthy plants are easier to maintain and are less susceptible to insects and diseases.

The first growing season is very important to a ground cover planting. Careful watering and weeding will help ensure the plants get established. Once established, some ground covers require little more than weed control, while others may need to be watered occasionally or more frequently. The best advice is to know the growing conditions that favour the plant, and then, match the plant to those conditions.

Clump forming (10 to 30 cm tall)

Chives	Pincushion Cactus
Cliff Green	Prickly Pear Cactus
Creeping Bellflower	Rose Daphne
Evergreen Candytuft	Silver Mound
Forget-me-not	Sun Rose
Golden Spurge	Tarda Tulip

Clump forming (30 to 45 cm tall)

Bergenia	Lady's Mantle
Bethlehem Sage	Plantain Lily
Blood-red Cranesbill	Siberian Cypress
Giant Rockfoil	

Clump forming (45 to 60 cm tall)

Albert Honeysuckle	Yellow Gem Potentilla
Purple Broom	

Mat forming (5 to 10 cm tall)

Alpine Rockcress	Mountain Avens
Canada Bunchberry	Pussy Toes
Creeping Jenny/Moneywort	Rock Garden Broom
Golden Carpet	Silverweed
Miss Willmott Potentilla	Speedwell/Veronica
Mother-of-thyme	Woolly Thyme

Mat former (10 to 30 cm tall)

Arctic Phlox	Maiden Pinks
Bird's-foot Trefoil	Mint
Bugleweed	Mock Strawberry
Canada Violet	Perennial Alyssum
Cheddar Pinks	Periwinkle
Creeping Baby's Breath	Rockcress
Creeping Cotoneaster	Rock Soapwort



Creeping Juniper
 Creeping Oregon Grape
 Dragon's Blood Stonecrop
 Dwarf Bearded Iris
 Dwarf Phlox
 Golden Corydalis
 Grass Pinks
 Harebell
 Kamschata Stonecrop
 Kinnikinnick
 Lily-of-the-valley

Sage/Wormwood
 Savin Juniper
 Saxifrage
 Sea Champion
 Snow-in-summer
 Spotted Deadnettle
 Strawberry
 Three-toothed Cinquefoil
 Windflower/Snowdrop Anemone
 Woolly Yarrow

Mat forming (30 to 45 cm tall)

Bee Balm
 Bishop's Goutweed
 Canada Anemone
 Catmint
 Creeping Juniper

Lambs Ears
 Ostrich Fern
 Roundleaf Cotoneaster
 Starflowered Solomon's Seal
 Wild Bergamot

Ornamental Grasses

Blue Lyme Grass
 Blue Sheep's Fescue
 Bulbous Oat Grass
 Ribbon Grass

Skinner's Gold Bromegrass
 Variegated Velvet Grass
 Yellow Meadow Foxtail

What to Grow in Alberta

The following charts offer information on many features of perennials grown in Alberta. Height, flower color and bloom time are just a few of the factors you need to know when deciding on perennial plantings. The term "xeriscaping" under the heading "Landscape and other uses" refers to gardening practices that conserve water, such as grouping plants with similar water needs.

Finding the characteristics you want is easy. Simply look to see if the square under the heading you want in the chart is colored. If it is, the plant has that characteristic.



Perennials

Common Name Botanical Name	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Aizoon <i>Draba aizoon</i>														
Alpine Edelweiss <i>Leontopodium alpinum</i>														
Alyssum, Perennial <i>Aurinia saxatilis</i>														
Anemone, Woodland <i>Anemone nemorosa</i>														
Arnica/Yellow Daisy <i>Arnica chamissinis</i>														
Aster <i>Aster</i> spp.														
Astilbe <i>Astilbe</i> spp.	☀													
Avens <i>Geum</i> spp.														
Baby's Breath <i>Gypsophila paniculata</i>														
Baby's Breath, Creeping <i>Gypsophila repens</i>														
Balloon Flower <i>Platycodon grandiflorum</i>														
Beard Tongue <i>Penstemon</i> spp.														

☀ rich soil

☄ poor soil

☀ bog conditions

☀ evergreen

Common Name Botanical Name	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Beebalm/Monarda <i>Monarda</i> spp.	☀													
Bellflower, Carpathian <i>Campanula carpatica</i>														
Bellflower, Creeping <i>Campanula cochlearifolia</i>														
Bellflower, Danesblood <i>Campanula glomerata</i>														
Bellflower, Peachleaf <i>Campanula persicifolia</i>														
Bergenia <i>Bergenia</i> spp.														
Black Snakeroot <i>Cimicifuga racemosa</i>														
Blanket Flower <i>Gaillardia aristata</i>	★													
Blazing Star <i>Liatris</i> spp.														
Bleeding Heart, Common <i>Dicentra spectabilis</i>														
Bleeding Heart, Fernleaf <i>Dicentra formosa</i>														
Bleeding Heart, Plume <i>Dicentra eximia</i>														

☀ rich soil

★ poor soil

✴ bog conditions


✱ evergreen

Flower color	Special features	Height	Landscape and other uses
Pink			
Purple			
Blue			
Ornamental seed pods/fruit			
Foliage prominent			
Fragrant foliage/flowers			
Edible flowers			
Aggressive			
Other features			
Under 15 cm			
15 - 24 cm			
24 - 50 cm			
50 - 90 cm			
90 - 120 cm			
Over 120 cm			
Border			
Rockery			
Naturalizing			
Groundcover			
Xeriscaping			
Fresh cut			
Dried			



attracts birds and butterflies



 **poisonous**

Common Name Botanical Name	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Bloodroot <i>Sanguinaria canadensis</i>														
Cactus, Pincushion <i>Coryphantha vivipara</i>														
Cactus, Prickly Pear <i>Opuntia polyacantha</i>														
Callianthemum <i>Callianthemum angustifolium</i>														
Campion, Arkwright's <i>Lychnis arkwrightii</i>														
Campion, Haage's <i>Lychnis haageana</i>														
Campion, Rose <i>Lychnis coronaria</i>														
Campion, Sea <i>Silene vulgaris maritima</i>														
Candytuft, Perennial <i>Iberis sempervirens</i>														
Carpet Bugleweed <i>Ajuga reptans</i>														
Chinese Lantern <i>Physalis alkekengi</i>														
Chrysanthemum, Morden Hybrids <i>Chrysanthemum morifolium</i>														



rich soil



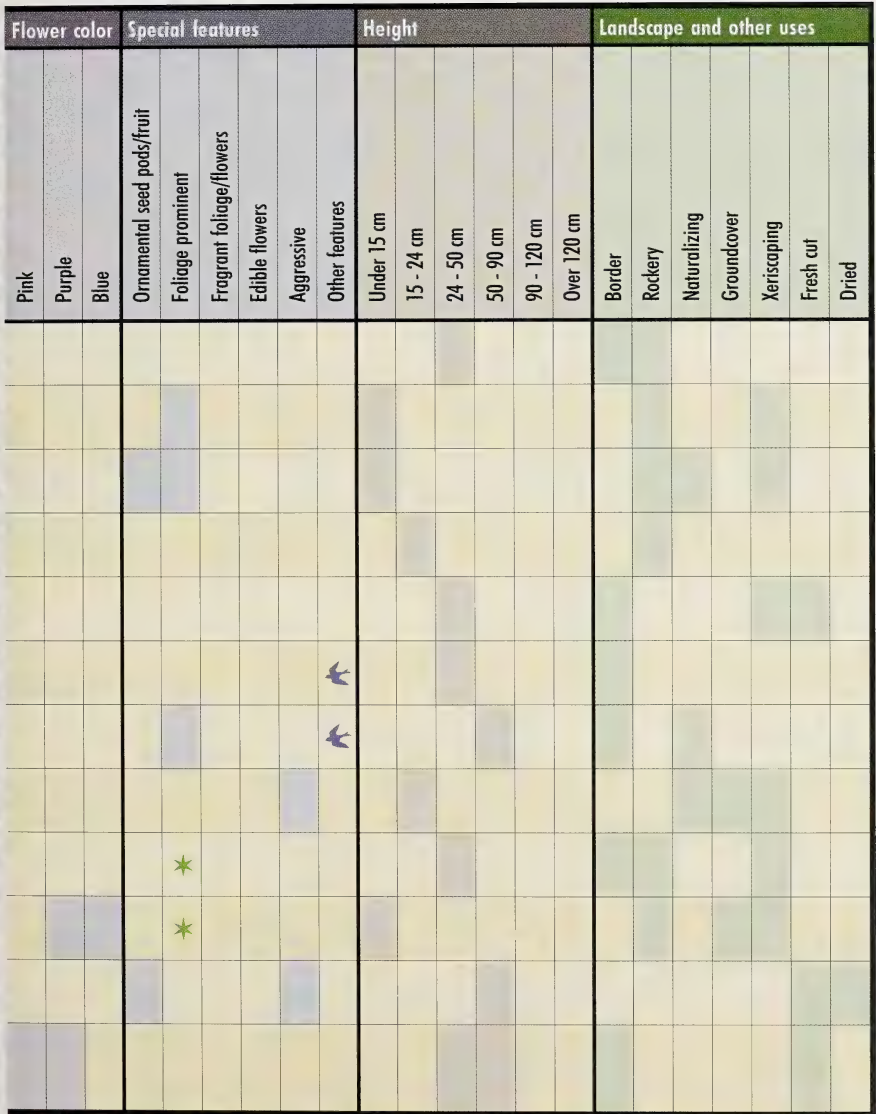
poor soil



bog conditions



evergreen



Common Name <i>Botanical Name</i>	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Clematis, Ground <i>Clematis recta</i>														
Clematis, Solitary <i>Clematis integrifolia</i>														
Columbine <i>Aquilegia spp.</i>														
Coneflower <i>Rudbeckia fulgida</i>														
Coneflower, Golden Fountain <i>Rudbeckia laciniata</i>														
Coral Bells <i>Heuchera spp.</i>														
Cornflower, Perennial/ Mountain Bluet <i>Centaurea montana</i>														
Cranesbill Geranium <i>Geranium spp.</i>														
Cypress Spurge <i>Euphorbia cyparissias</i>														
Daisy, Gloriosa <i>Rudbeckia hirta triloba</i>														
Daisy, Painted <i>Chrysanthemum coccineum</i>														
Daisy, Shasta <i>Chrysanthemum x superbum</i>														

☀ rich soil

☄ poor soil

☁ bog conditions

★ evergreen



Flower color			Special features			Height			Landscape and other uses												
Pink	Purple	Blue	Ornamental seed pods/fruit	Foliage prominent	Fragrant foliage/flowers	Edible flowers	Aggressive	Other features	Under 15 cm	15 - 24 cm	24 - 50 cm	50 - 90 cm	90 - 120 cm	Over 120 cm	Border	Rockery	Naturalizing	Groundcover	Xeriscaping	Fresh cut	Dried



attracts birds and butterflies



poisonous

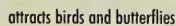
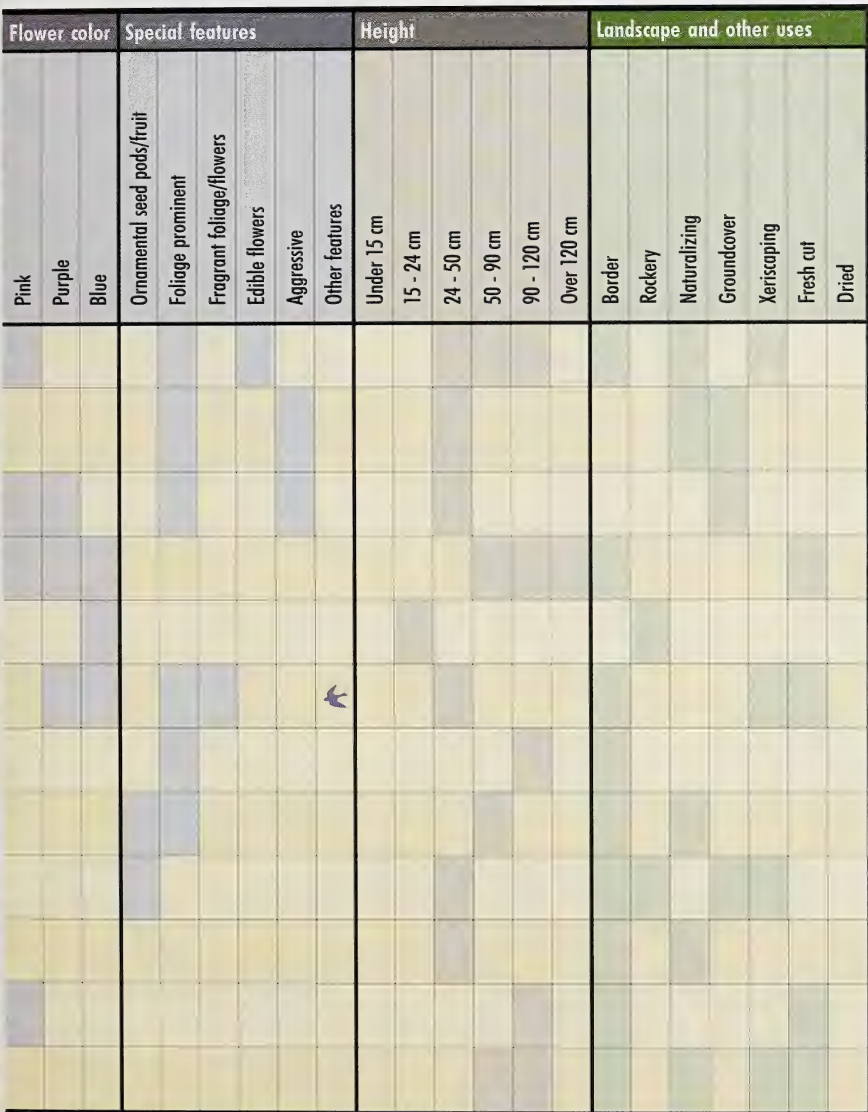
Common Name Botanical Name	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Daylily <i>Hemerocallis</i> spp.														
Deadnettle <i>Lamium galeobdolan</i> var <i>variegatum</i>														
Deadnettle Spotted <i>Lamium maculatum</i>														
Delphinium <i>Delphinium</i> spp.	☀													
Dragonhead <i>Dracorephalum grandiflorum</i>														
Dropmore Catmint <i>Nepeta x ucranica</i> 'Dropmore'														
Elephant Ears <i>Ligularia stenocephala</i>	☀	★												
Eurasian Solomon's Seal <i>Polygonatum multiflorum</i>	☀													
European Pasque Flower <i>Anemone pulsatilla</i>														
Evening Primrose, Missouri <i>Oenothera missouriensis</i>	★													
Everlasting Pea <i>Lathrus latifolia</i>														
False Lupine <i>Thermopsis</i> spp.														

☀ rich soil

★ poor soil

★ bog conditions

★ evergreen



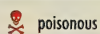
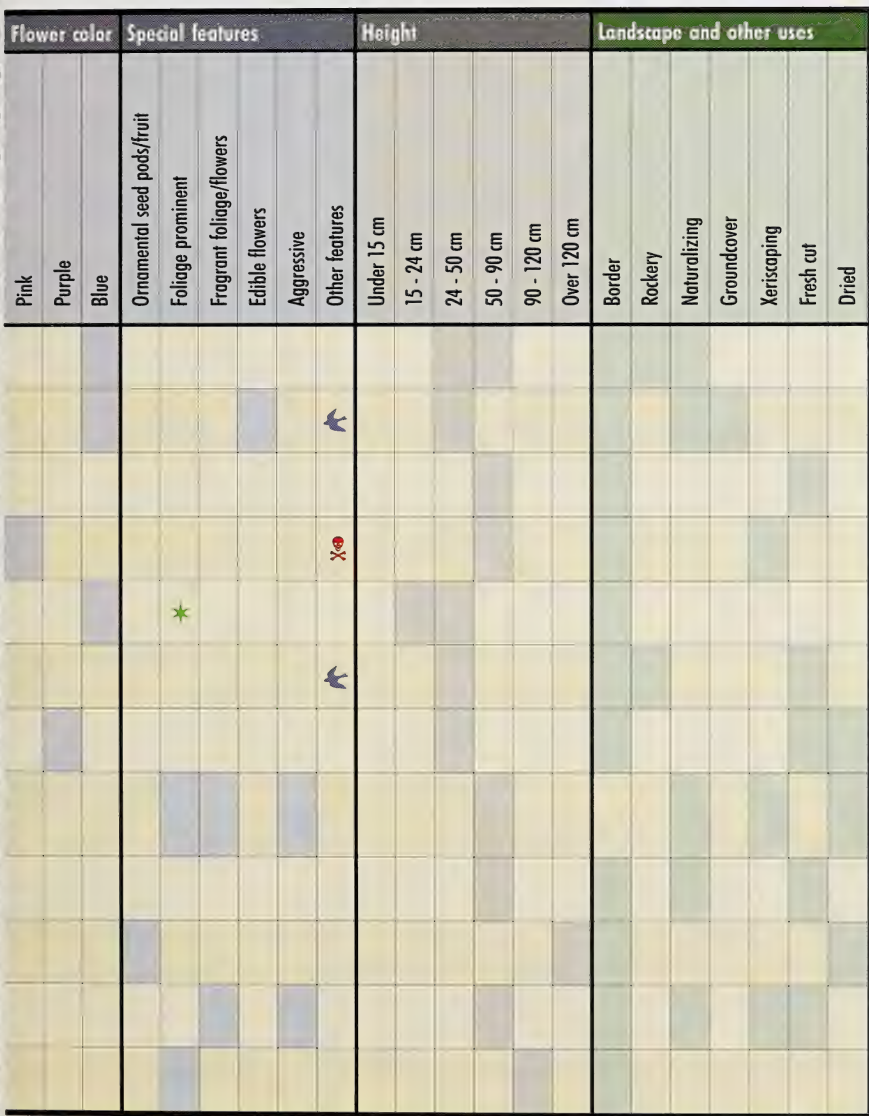
Common Name <i>Botanical Name</i>	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Flax <i>Linum</i> spp.														
Forget-me-not <i>Myosotis sylvatica</i>														
Foxglove, Yellow <i>Digitalis grandiflora</i>														
Gasplant <i>Dicamnus albus</i>														
Gentian <i>Gentiana</i> spp.	☀													
German Catchfly <i>Lychnis viscaria</i>														
German Statice <i>Goniolimon tataricum</i>														
Ghost Plant <i>Artemisia ludoviciana</i> 'Silver King'	☀													
Globe Flower <i>Trollius</i> spp.	☀													
Goat's Beard <i>Aruncus dioicus</i>														
Golden Margeurite <i>Anthemis tinctoria</i>														
Golden Ray/Ligularia <i>Ligularia dentata</i>	☀													

☀ rich soil

☀ poor soil

☀ bog conditions

☀ evergreen



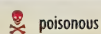
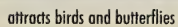
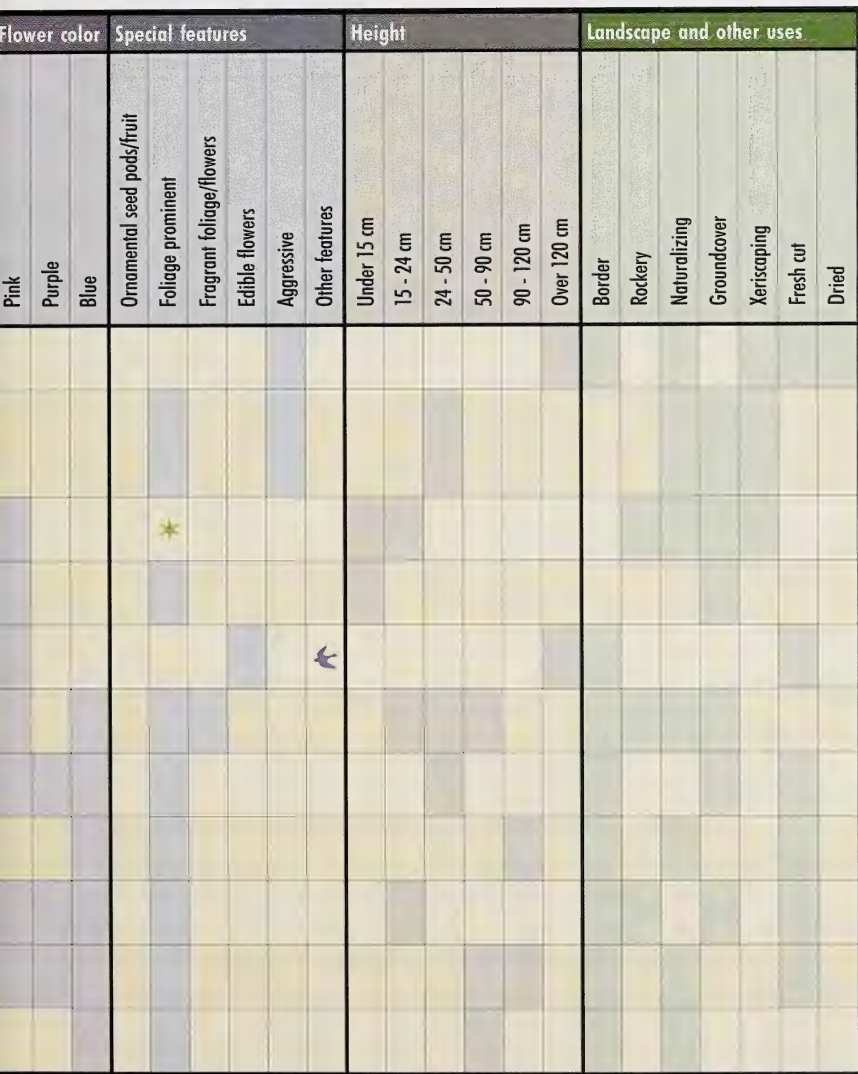
Common Name <i>Botanical Name</i>	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/light garden	Yellow	Orange	Red
Goldenrod <i>Solidago</i> sp.														
Goutweed/ Snow-on-the-mountain <i>Aegopodium podagraria</i> 'Variegatum'														
Hens & Chicks <i>Sempervivum</i> spp.	✱													
Herbaceous Periwinkle <i>Vinca herbacea</i>														
Hollyhock <i>Althaea rosea</i>														
Hosta/Plantain Lily <i>Hosta</i> spp.	☀													
Iris, Bearded <i>Iris germanica</i>	☀													
Iris, Blueflag <i>Iris versicolor</i>	☀	✱												
Iris, Dwarf Bearded <i>Iris pumila</i>	☀													
Iris, Siberian <i>Iris siberica</i>	☀													
Iris, Sweet <i>Iris pallida</i>														

☀ rich soil

✱ poor soil

✱ bog conditions

✱ evergreen



Common Name Botanical Name	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Iris, Yellow Flag <i>Iris pseudacornus</i>	☀	★												
Italian Bugloss <i>Anchusa azurea</i>	☀													
Jacob's Ladder <i>Polemonium caeruleum</i>														
Joe Pye/Boneset <i>Eupatorium purpureum</i>														
Knotweed <i>Polygonum bistorta</i>														
Lady's Mantle <i>Alchemilla mollis</i>														
Lambs Ears <i>Stachys grandiflora</i>														
Leopardsbane <i>Doronicum caucasicum</i>														
Lily, Asiatic <i>Lilium x hybridum</i>														
Lily, Martagon <i>Lilium martagon</i>														
Lily, Tiger <i>Lilium lancifolium</i>														
Lily-of-the-valley <i>Convallaria majalis</i>														



rich soil



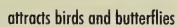
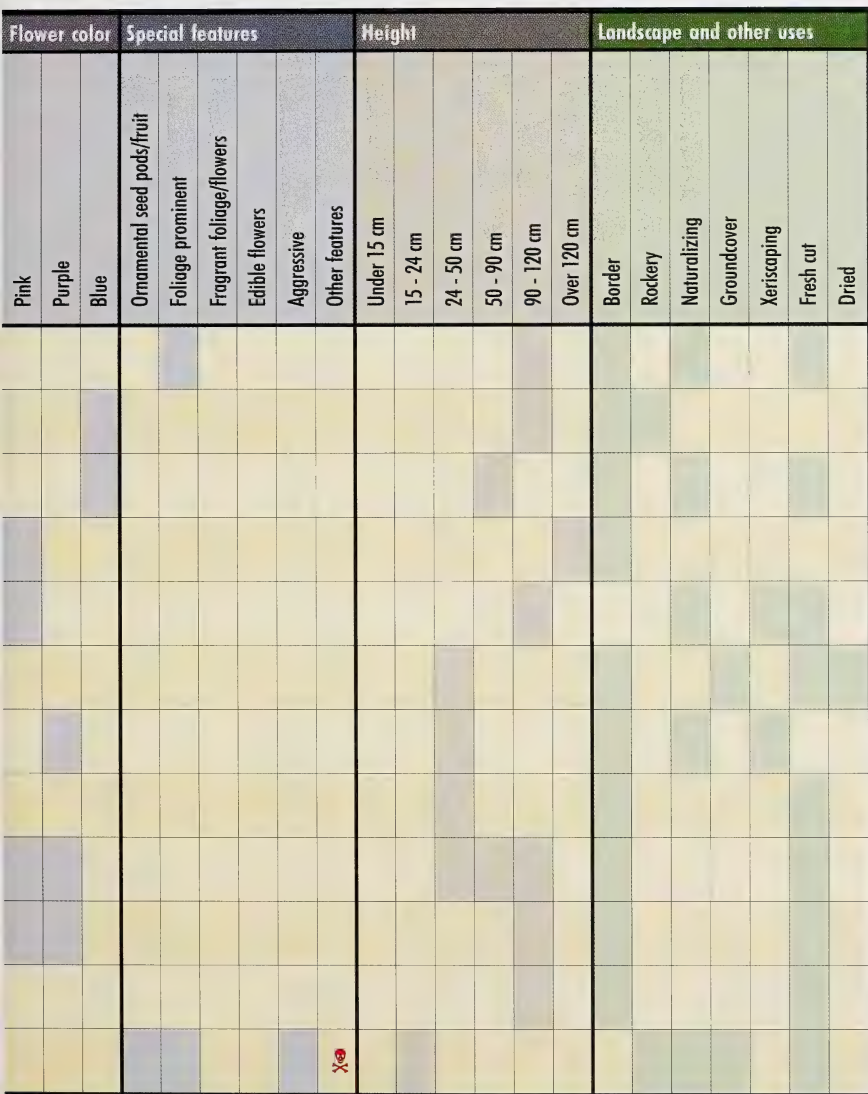
poor soil



bog conditions



evergreen



Common Name <i>Botanical Name</i>	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Lungwort <i>Pulmonaria</i> spp.														
Lupin <i>Lupinus</i> x														
Maltese Cross <i>Lychnis chalcidonica</i>														
Marsh Marigold <i>Caltha palustris</i>	☀	★												
Meadowrue <i>Thalictrum</i> spp.														
Meadowsweet <i>Filipendula</i> spp.														
Mock Strawberry <i>Duchesnea indica</i>														
Moneywort/Creeping Jenny <i>Lysimachia nummularia</i>		★												
Monkshood <i>Aconitum napellus</i>														
Moor Grass <i>Molinia caerulea variegata</i>														
Mountain Alyssum <i>Alyssum montana</i>														
Mountain Avens <i>Dryas octopetala</i>														



rich soil



poor soil



bog conditions



evergreen

[illegible]

attracts birds and butterflies



poisonous

Common Name <i>Botanical Name</i>	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Mountain Sandwort <i>Arenaria laricifolia</i>														
Mullein <i>Verbascum</i> spp.														
Musk Mallow <i>Malva</i> spp.														
Obedient Plant <i>Physostegia virginiana</i>														
Oregon Fleabane <i>Erigeron speciosus</i>														
Ostrich Fern <i>Matteuccia struthiopteris</i> <i>pennsylvanica</i>														
Pasque Flower <i>Anemone pulsatilla</i>														
Pearly Everlasting <i>Anaphalis margaritacea</i>														
Peony <i>Paeonia</i> spp.														
Phlox, Arctic <i>Phlox borealis</i>														
Phlox, Carolina <i>Phlox carolina</i>														
Phlox, Creeping <i>Phlox subulata</i>														



rich soil



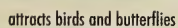
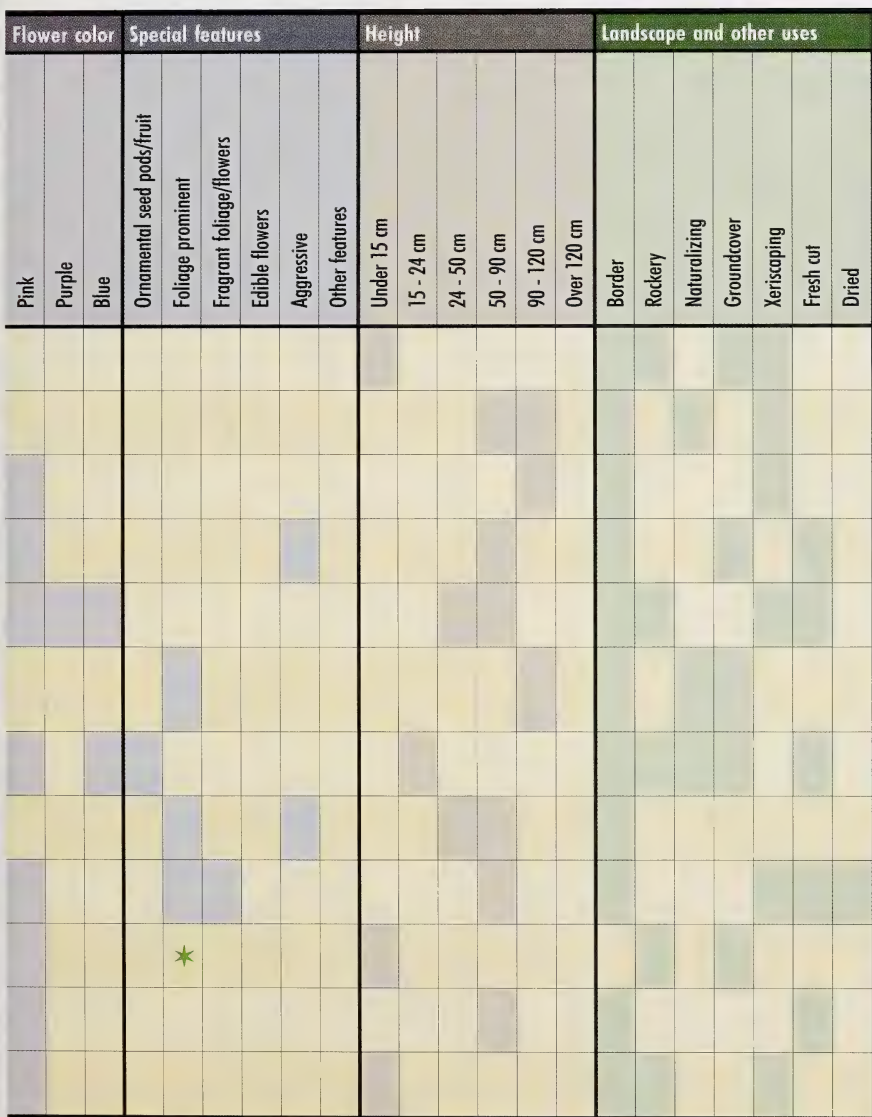
poor soil



bog conditions



evergreen



Common Name Botanical Name	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Phlox, Douglas <i>Phlox douglasii</i>														
Phlox, Garden/Summer <i>Phlox paniculata</i>														
Pink, Cheddar <i>Dianthus gratianopolitanus</i>														
Pink, Cottage <i>Dianthus plumarius</i>														
Pink, Maiden <i>Dianthus deltoides</i>														
Pink Panda Strawberry <i>Fragaria frel 'Pink Panda'</i>														
Poppy, Blue Himalayan <i>Meconopsis grandis</i>														
Poppy, Iceland <i>Papaver nudicaule</i>														
Poppy, Oriental <i>Papaver orientale</i>														
Poppy, Plume <i>Macleaya microcarpa</i>	☀													
Potentilla, Himalayan <i>Potentilla atrosanguinea</i>														
Potentilla, Nepal <i>Potentilla nepalensis</i>														



rich soil



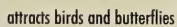
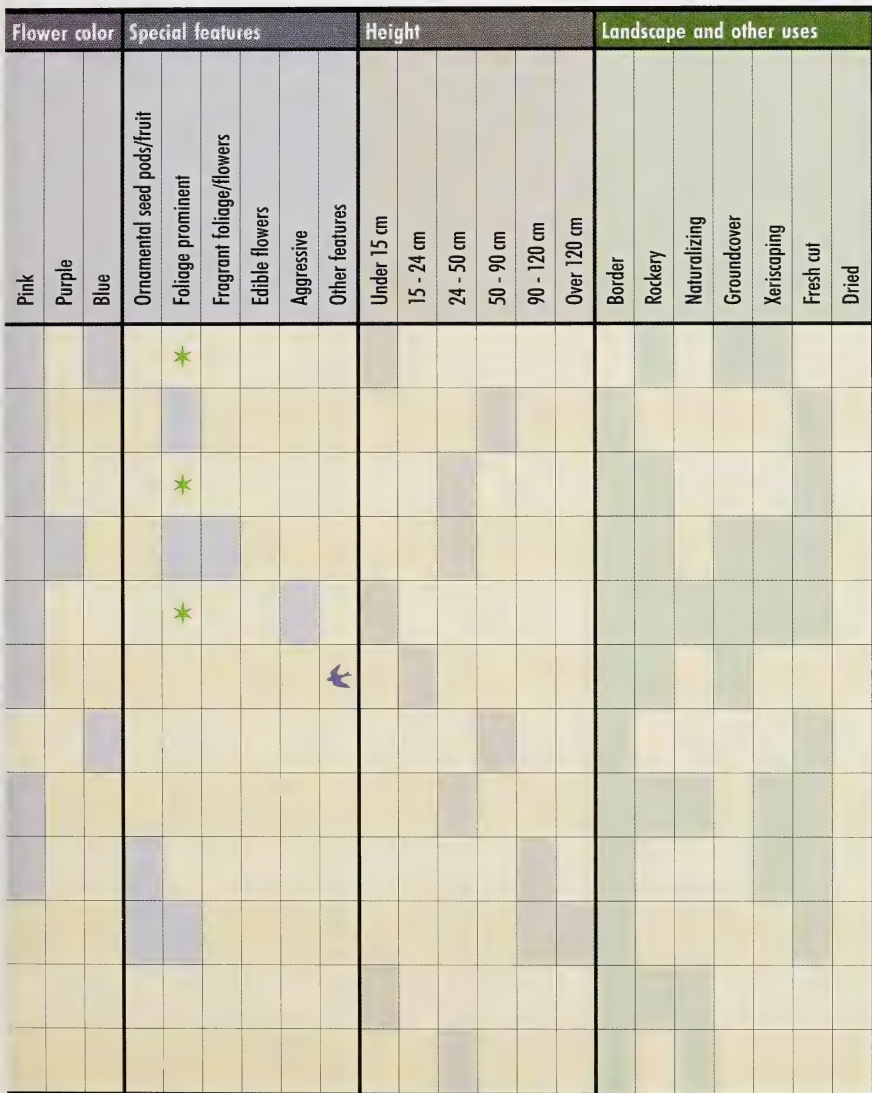
poor soil



bog conditions



evergreen



Common Name Botanical Name	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Primrose, Assiniboine <i>Primula</i> 'Assiniboine'	☀													
Primrose, Cortusa <i>Primula cortusoides</i>	☀													
Primrose, Dusty Miller <i>Primula auricula</i>	☀													
Purple Coneflower <i>Echinacea purpurea</i>														
Pussytoes <i>Antennaria</i> spp.														
Red Barrenwort <i>Epidimedium</i> x <i>hybridum</i>	☀													
Ribbon Grass <i>Phalaris arundinaceae picta</i>														
Rock Rose/Sun Rose <i>Helianthemum nummularium</i>														
Rock Soapwort <i>Saponaria ocymoides</i>	☀													
Rockcress <i>Arabis</i> spp.														
Rough Heliopsis <i>Heliopsis scabra</i>	☀													
Sage <i>Salvia</i> spp.														



rich soil



poor soil



bog conditions



evergreen

Flower color	Special features	Height	Landscape and other uses
Pink			
Purple			
Blue			
Ornamental seed pods/fruit			
Foliage prominent			
Fragrant foliage/flowers			
Edible flowers			
Aggressive			
Other features			
Under 15 cm			
15 - 24 cm			
24 - 50 cm			
50 - 90 cm			
90 - 120 cm			
Over 120 cm			
Border			
Rockery			
Naturalizing			
Groundcover			
Xeriscaping			
Fresh cut			
Dried			

Common Name Botanical Name	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Saxifrage <i>Saxifraga</i> spp.														
Scabious <i>Scabiosa</i> spp.	✳													
Sea Holly <i>Eryngium</i> spp.														
Sea Lavender/Statice <i>Limonium</i> spp.														
Sea Thrift <i>Armeria maritima</i>														
Sheep's Fescue <i>Festuca ovina glauca</i>														
Shooting Star <i>Dodecatheon meadia</i>	☀													
Siberian Corydalis <i>Corydalis nobilis</i>														
Siberian Wallflower <i>Erysimum asperum</i>														
Silver Brocade Artemisia <i>Artemisia stellerana</i> 'Silver Brocade'	✳													
Skinner's Gold Bromegrass <i>Bromus inermis</i> 'Skinner's Golden'														



rich soil



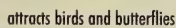
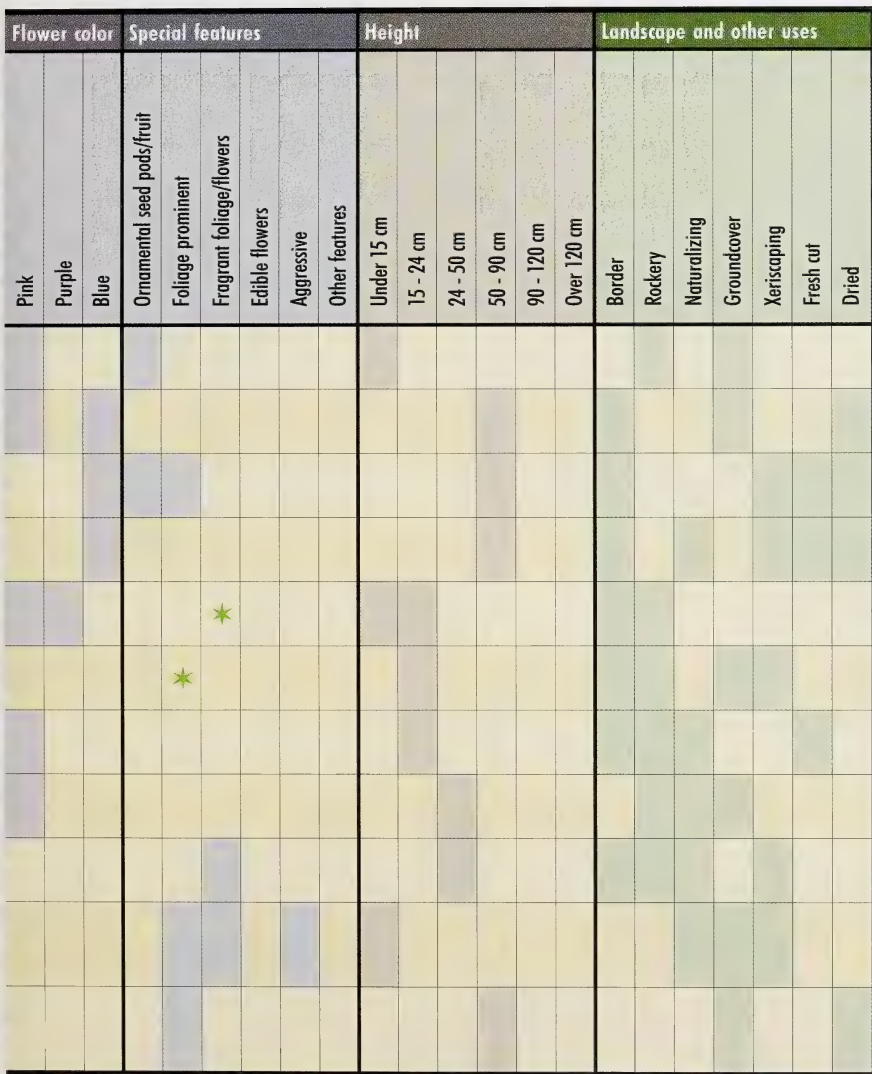
poor soil



bog conditions



evergreen



Common Name Botanical Name	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Small Globe Thistle <i>Echinops rito</i>														
Sneezeweed <i>Helenium autumnale</i>														
Snow-in-summer <i>Cerastium tomentosum</i>														
Sorrel Rhubarb <i>Rheum palmatum</i>														
Speedwell, Longleaf <i>Veronica longifolia</i>														
Speedwell, Spike <i>Veronica spicata</i>														
Speedwell, Woolly <i>Veronica incana</i>														
Spring Adonis <i>Adonis vernalis</i>														
St. John's Wort <i>Hypericum buckleyi</i>														
Stonecrop <i>Sedum spp.</i>	★													
Sweet William <i>Dianthus barbatus</i>														
Swordleaf Inula <i>Inula ensifolia</i>														



rich soil



poor soil



bog conditions



evergreen

[illegible]

attracts birds and butterflies



 poisonous

Common Name Botanical Name	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Tall Buttercup <i>Ranunculus acris</i>														
Thyme <i>Thymus</i> spp.														
Tickseed/Coreopsis <i>Coreopsis verticillata</i>														
Tickseed, Lance <i>Coreopsis lanceolata</i>														
Valerian <i>Valeriana officinalis</i>														
Variegated Creeping Charlie <i>Glechoma hederacea</i>														
Violet, Canada <i>Viola canadensis</i>														
Violet, Crowsfoot <i>Viola pedatifida</i>														
Violet, Johnny-jump-up <i>Viola tricolor</i>														
Virginia Bluebells <i>Mertensia virginica</i>	☀													
Virginia Spiderwort <i>Tradescantia virginiana</i>														
Wormwood <i>Artemisia schmidtiana</i> 'Silver Mound'	☀													



rich soil



poor soil



bog conditions



evergreen

Flower color	Special features	Height	Landscape and other uses
Pink	Ornamental seed pods/fruit	Under 15 cm	Border
Purple	Foliage prominent	15 - 24 cm	Rockery
Blue	Fragrant foliage/flowers	24 - 50 cm	Naturalizing
	Edible flowers	50 - 90 cm	Groundcover
	Aggressive	90 - 120 cm	Xeriscaping
	Other features	Over 120 cm	Fresh cut
			Dried

 attracts birds and butterflies

 **poisonous**

Common Name Botanical Name	Soil			Light			Bloom time			Flower color				
	Normal	Evenly moist	Dry	Full Sun	Partial shade	Shade	Early	Mid	Late	Inconspicuous flower	White/night garden	Yellow	Orange	Red
Yarrow, Common <i>Achillea millefolium</i>														
Yarrow, Fernleaf <i>Achillea filipendula</i>														
Yarrow, Sneezewort <i>Achillea ptarmica</i>														
Yarrow, Woolly <i>Achillea tomentosa</i>														



rich soil



poor soil




bog conditions



evergreen



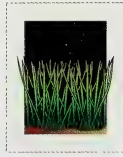
Flower color			Special features			Height			Landscape and other uses		
Pink			Ornamental seed pods/fruit			Under 15 cm			Border		
Purple			Foliage prominent			15 - 24 cm			Rockery		
Blue			Fragrant foliage/flowers			24 - 50 cm			Naturalizing		
			Edible flowers			50 - 90 cm			Groundcover		
			Aggressive			90 - 120 cm			Xeriscaping		
			Other features			Over 120 cm			Fresh cut		
									Dried		



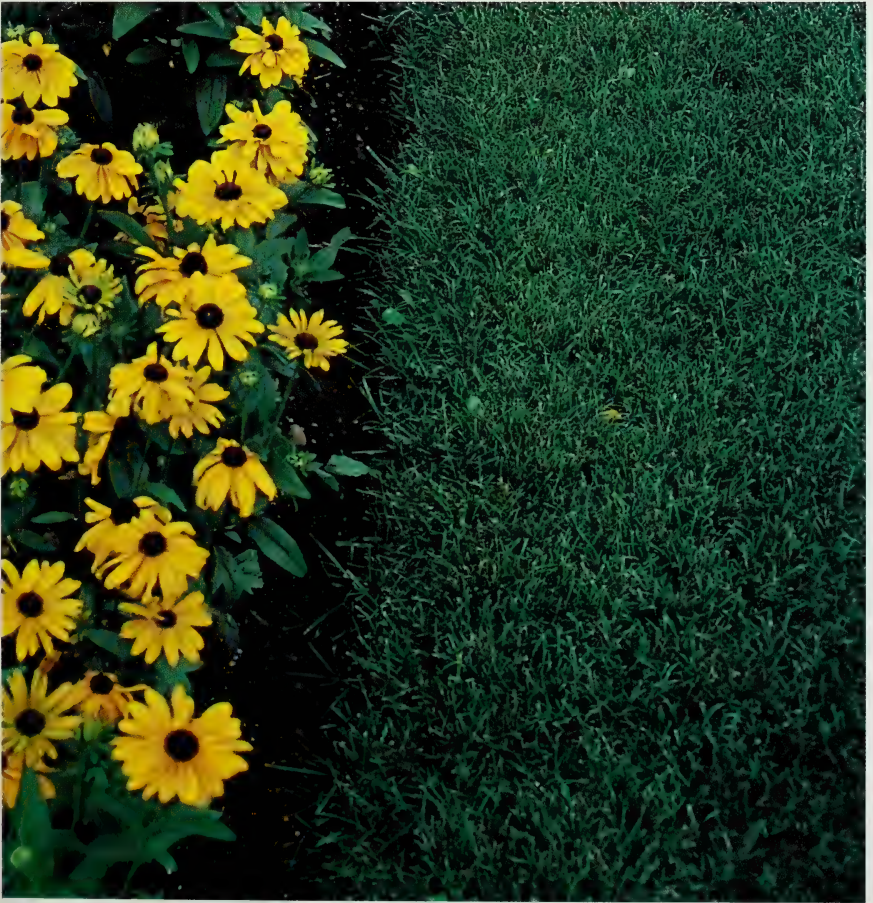
attracts birds and butterflies



poisonous



Lawns





Lawns

Construction

Building may be the most important step in establishing a good lawn, whether that lawn is established by seed or sod. The first step is to examine the site for perennial weeds like Canada thistle or quack grass; if present, they need to be sprayed with glyphosate. No herbicide will control these perennial weeds in an established lawn, so controlling them at the beginning is critical.

Grading

The next step is rough grading, where drainage patterns are established and rocks, stumps and construction debris are removed. Rough grading is working with the sub-grade to direct the water that has moved through the topsoil.

Once proper drainage of the sub-grade has been established, the topsoil can be spread on site. After the topsoil has been spread, a soil test will assess what fertilizer programs are necessary to grow good turf. The soil test will also indicate if organic matter will be required.

Soil amendments like compost, well-rotted manure or mushroom compost are incorporated into the soil at this point. Rotilling the fertilizer and organic matter into the soil is a good way to incorporate it. A good lawn requires at least 10 to 15 cm of topsoil after settling. Using less than this amount means the grass will not perform well.

Final grading is the last step in the building of the lawn. What you see at this point reflects what the lawn will be after seeding. If there seems to be lots of quack grass roots in the topsoil, allow it to sprout and grow; then spray it out with glyphosate. It will take 10 to 14 days before the roots are killed. If chemical control is undesirable, hand dig to remove weeds, ensuring that perennial roots are removed.

Timing

Grass is normally seeded in late spring or early summer, although it can be seeded in mid-August into the first part of September. Grass will need to be established before the snow flies, so it can survive the winter. Dormant seeding can be a risk in the chinook zone as the warming causes snow to melt and seeds to sprout. Once the winter resumes, seeds will often die.

Sodding can be done anytime from spring until mid-late October. In chinook areas where snow cover is limited, sod needs at least six weeks to establish itself before freeze up.

Seeding

Starting Seed

Choose your seed mix according to the growing conditions. To apply the seed evenly, divide it into two equal parts. Sow one half in one direction and the other half at right angles to the first application.

Rake lightly in one direction. If seeding on a slope, rake across the slope to avoid erosion problems. Roll after seeding to ensure good seed-to-soil contact.

Keep the top 5 cm of soil moist at all times for the first 4 to 6 weeks. Seed may be washed away, so avoid puddling or using a strong jet when watering. Frequent light waterings are necessary until the seedlings become established. Following establishment, less frequent waterings are better.

Feeding

Fertilizers can be added either before seeding or as the seedlings become established. Fertilizing with a fertilizer with a 1-2-0 or 1-3-0 ratio (11-54-0) is ideal. Once the grass is established, then switch to 1-1-1 or balanced fertilizer.

Mowing

Mow the new lawn when it is 5 to 10 cm tall, removing no more than 30 per cent of the leaf blade. Leaving the grass a little longer will strengthen the rooting and allow the plant to weather better. The process of mowing will force the grass to reproduce vegetatively, thus thickening the stand of turf.

Mowing is also a form of weed control. Many of the annual weeds found in newly seeded turf are put into a state of shock when they are mowed. The grass becomes more competitive for water and nutrients, and the annual weeds tend to disappear. New turf should not have weed control products applied for the first four to six weeks. If the turf is healthy after that time, then a selective broadleaf herbicide can be used.

Sodding

Preparation

Prepare the soil as you would for seeding with one exception. In the case of seeding, fertilizer can be incorporated before seeding or after the grass has emerged. When laying sod, the fertilizer should be in the root zone. Therefore when sodding, fertilizer is generally put down after the final grading.

Sod should be no more than 1.5 cm thick. Be aware that thicker sod takes longer to establish.

Laying Sod

Sod should be laid on moist soil as soon as possible after delivery. If there is a delay, keep the sod slightly moist and store in a cool, shady area.

Lay the first row of sod in a straight row, using a sidewalk, building or tightly stretched string as a guide. Butt the edges of the sod pieces together tightly, but do not overlap. The next row should be laid down in a staggered pattern similar to how bricks are laid. Use a hooked linoleum knife for trimming.



Do not walk on bare soil as footsteps may cause depressions that will appear in the sod. Work from boards laid down on the newly set sod. If sodding on a steep slope, lay the sod across the hill, not up and down, to avoid erosion problems later on.

After laying the sod, fill in the joints with topsoil or sand and peatmoss. If the site was level and the joins were made properly, then the sod should be relatively uniform. Rolling the area lightly will help solve any problems with poor joints or undulations in the grade.

Initial Care

Once sod is laid, water it immediately to a depth of 15 to 20 mm. Keep the sod moist at all times until it has rooted. If sod dries out, it contracts and gaps will show in the joints. Later rewatering will not cause the sod to expand and fill those cracks. Daily watering for one to two weeks is suggested, depending on how well the sod knits and the amount of rainfall.

Keep traffic off the lawn until it has knit, and mow as soon as necessary. Remove no more than 30 per cent of the leaf blade at mowing time. Weed control can be done using broadleaf selective herbicides immediately if necessary.

Maintenance

Feeding

Fertilize three times during the growing season, making the last application before August 15. Apply fertilizer with a spreader to ensure uniform application. Split the quantity of fertilizer in half, and apply half in one direction and the other half at right angles to the first application.

For Alberta lawns, a 3:1:2 ratio of N:P:K (nitrogen, phosphorus and potassium) is recommended. An example of a fertilizer with this ratio might have an analysis of 21:7:14.

Mowing

Frequent mowing is required to maintain a good turf. Mow to a height of 4 to 5 cm during periods with adequate moisture. In times of drought or in drier areas of the province, cut the grass to a height of 6 to 7.5 cm. This approach helps the grass plant withstand environmental stresses (drought) and also reduces the mowing frequencies. A thatch layer of 1 to 2 cm is desirable.

A thorough watering to a depth of 2.5 cm or more is better than a light sprinkling. Light watering can lead to shallow root systems. Be aware that heavier soils require less water than sandy soils.

Periods of normal drought will not damage an established lawn; the grass will go dormant until moisture becomes available. This condition of temporary drought may, however, lead to disease problems in the future.

Recommended Mixtures and Rate of Seed Application

• Where Lawns Can Be Watered

Sunny locations (1 kg/100 m²)

70 - 80%	Kentucky Bluegrass blend (3 to 4 cultivars) and
30 - 20%	Creeping Red Fescue (1 to 2 cultivars) or
30 - 20%	Chewings Fescue (1 to 2 cultivars)

Kentucky Bluegrass cultivars

Amazon, America, Banff, Baron, Challenger, Fylking, Glade, Midnight, Nugget, Touchdown

Creeping Red Fescue cultivars

Boreal, Dawson, Jasper, Shadow

Chewings Fescue cultivars

Victory, Banner



Shady locations (1.25 kg/100 m²)

20 - 40%	Kentucky Bluegrass blend (1 to 2 cultivars) and
80 - 60%	Creeping Red Fescue (3 to 4 cultivars) or Chewings Fescue (1 to 2 cultivars)

Shade tolerant Kentucky Bluegrass cultivars

Glade, Nugget, Ram 1, Touchdown

Creeping Red Fescue cultivars

Boreal, Dawson, Jasper, Shadow

Chewings Fescue cultivars

Victory, Banner

• **Where Supplementary Water Is Not Available (good rainfall areas)**

Sunny locations (1 kg/100 m²)

30 - 40%	Kentucky Bluegrass blend (3 to 4 cultivars) and
70 - 60%	Creeping Red Fescue (1 to 2 cultivars) or Chewings Fescue (1 to 2 cultivars)

Drought tolerant Kentucky Bluegrass cultivars

Amazon, Nugget, Ram 1, Touchdown

Creeping Red Fescue cultivars

Boreal, Dawson, Jasper, Shadow

Chewings Fescue cultivars

Victory, Banner

Shady locations (1.25 kg/100 m²)

20 - 30%	Kentucky Bluegrass blend (1 to 2 cultivars) and
80 - 70%	Creeping Red Fescue (2 to 3 cultivars) or Chewings Fescue (1 to 2 cultivars)

Shade tolerant Kentucky Bluegrass cultivars

Glade, Nugget, Ram 1, Touchdown

Creeping Red Fescue cultivars

Boreal, Dawson, Jasper, Shadow

Chewings Fescue cultivars

Victory, Banner

Low rainfall areas (4 kg/100 m²)

100%	Crested Wheatgrass cultivars: Fairway, Parkway
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Worthy of trial

Blue Grama or Canada Bluegrass in mix with Crested Wheatgrass

Saline areas

Worthy of trial

Fults Alkali Grass, Dawson Creeping Red Fescue

• **Low Maintenance Grasses**

Only use low maintenance grasses in low traffic areas; they are not suitable as lawn grasses. These grasses do not spread by rhizomes; therefore, their regenerative powers are poor.

Worthy of trial

Mix of Sheep Fescue, Alpine Bluegrass, June Grass, Crested Wheatgrass cultivars, Hard Fescue and Canada Bluegrass



Vegetables





Vegetables

Considerations

Plan your vegetable garden. Try to avoid planting tall plants where they will shade low growing ones. Plant short season crops next to vining or spreading types. Draw up an actual plan of what you want to grow where before you begin work outside.

Begin the outdoor work. Spade or rototill the soil thoroughly to mix organic matter, soil and fertilizer, but do not work wet soil. Manure (preferably applied the previous season at rates up to 50 kg/10 m²), peat moss and compost are good sources of organic matter. Fertilizers such as 16-20-0 and 10-30-10, applied at the rates up to 1 kg/10 m², are generally good for the vegetable garden.

Seed into moist soil at recommended depths and spacings. Most gardeners will plant seed thicker than required, so thinning may be necessary later on. However, extra time spent when planting to ensure seeds are not too close will reduce the time needed for thinning later. See the seed row spacing recommendations in the table further on in this section.

Cultivate to control weeds and to avoid soil compaction or crusting. Shallow cultivation will help avoid damage to roots.

Soak the garden thoroughly every 7 to 10 days, and avoid frequent light waterings, except as required, during the germination period. Watering early in the morning may help prevent leaf diseases.

Extra Protection

The use of hot caps, floating mulch and tunnels is recommended when field setting warm season crop transplants. Hot caps and floating mulch provide some frost protection and create an ideal growing environment.

Plastic mulches may be used in the home garden to help conserve moisture while black plastic can be used to control weeds. A 1.5 mil plastic is generally used. The soil must be well prepared and smooth to ensure a tight fit between plastic and soil. Plastic edges should be buried in the soil to prevent wind damage to the plastic and plants. Seeds or transplants are placed in the soil through slits in the plastic.

Hot caps provide two to four degrees of frost protection, so transplants can be set in the field two to three weeks earlier than normal. Place the hot cap over the watered-in transplant, and cover the flaps of the cap with soil to anchor it down. A 5 cm cut to the cap is made on the side opposite to the prevailing winds. Every week for the next four to five weeks, the size of the cut can be doubled. At the end of that period, the cap can be removed and destroyed. Tomatoes, peppers, eggplants, melons and cucumbers will benefit from the use of hot caps.

Tunnels or perforated plastic row covers are beneficial when used with black or clear plastic mulch. Tunnels are made from ventilated sheets of clear plastic stretched over wire hoops set in the ground. Because plastic is such a poor insulator, it provides no frost protection unless it is covered at night with non-plastic material.

Supporting hoops for the tunnel are placed over the plastic mulch that has been laid out and are secured at 80 cm apart. The ends of the support hoops are pushed 15 cm into the soil. The transplants are planted into the plastic mulch at the recommended distances and watered in. The perforated plastic is then stretched over the hoops and secured at both ends with a stake or with soil. All the plastic edges are buried in the soil to anchor them.

Remove the row cover either when the vine growth reaches the edges of the plastic cover, when plants start to flower or when the plants start to suffer from heat scorch. Remove the plastic on a cool, cloudy day to reduce plant shock. Slitting the row cover down the middle at least two days before removing it completely helps to gradually introduce the plants to the outdoor environment.

Floating mulch is an excellent material for tunnel construction. It is a white, polyester, spun bonded fabric that is laid over top of the crop. The material is self-ventilating and allows approximately 80 per cent light transmission. Floating mulch provides good protection for root crops and cole crops (broccoli, cabbage, cauliflower, etc.) against insect attack.

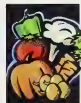
It is a good idea to use hot caps and tunnels for warm season crops such as cucumber, muskmelon, pumpkin, watermelon, pepper, eggplant and tomato (hot caps only) and sweet corn (tunnels).

Planting Tips

Succession seeding extends the season. Successive crops of radish, lettuce, peas, beans and spinach can be planted once every two weeks until mid June, to ensure a continuous supply of vegetables throughout the season.

Vegetables can be either seeded directly or transplanted. Transplanting usually results in earlier production. Firming the soil around transplant roots and immediate watering will improve transplant survival.

Some vegetables can be planted in the fall, just before the ground freezes. If fall planting, prepare the soil well in advance; seed slightly heavier than if for spring seeding. Do not water after seeding. Successful crops for fall planting include lettuce, spinach, onions (seed), carrots, parsnip, garlic and parsley.



Direct Seeded Crops

Planting Vegetable Seed Outdoors

Early as possible	beets, broccoli, cabbage, carrots, cauliflower, kale, kohlrabi, lettuce, onion, parsley, parsnip, peas, radish, rutabaga, spinach, Swiss chard, turnip
April 20	Chinese cabbage
May 5	broad beans
May 10	potato
May 10 - 20	corn
May 20	bush beans, cucumbers, pumpkin, squash
Late August – early September	garlic

Transplanted Crops

Transplant Vegetables Outdoors

April 20	broccoli, brussel sprouts, cabbage, cauliflower, kale, kohlrabi, leek, lettuce, onion seed/sets,
May 9	globe artichoke
May 15	celeriac
May 15 to June 20	asparagus
May 20	eggplant, pepper, tomato
May 25	celery
June 1	cucumber, muskmelon, pumpkin, squash, watermelon



Vegetable Planting Information

Direct Seeded Crops

Crop	Outdoor seeding date	Seeding depth (cm)	In-row spacing (cm)
Beans-broad	May 5	5	10 - 15
Beans-bush	May 20	3 - 5	2 - 5
Beets	early as possible	3 - 5	5 - 7
Broccoli	early as possible	1	30 - 45
Cabbage	early as possible	1	45
Carrots	early as possible	1 - 2	2 - 3
Cauliflower	early as possible	1	45
Chinese Cabbage	April 20	1	60
Corn (sweet)	May 10 - 20	3 - 5	25
Cucumber	May 20	2 - 3	15
Garlic	late Aug - early Sept	1 - 2	20
Kale	early as possible	1	60
Kohlrabi	early as possible	1	15 - 30
Lettuce	early as possible	1 - 2	30
Onion	early as possible	2 - 3	5 - 7
Parsley	early as possible	1 - 2	5 - 7
Parsnip	early as possible	1 - 2	5 - 10
Peas	early as possible	1 - 2	5 - 7
Potato	May 10	5 - 10	30 - 40
Pumpkin	May 20	1 - 2	90
Radish	early as possible	1 - 2	2 - 3
Rutabaga	early as possible	1 - 2	10 - 15
Spinach	early as possible	2 - 3	5 - 7
Squash	May 20	1 - 2	90
Swiss Chard	early as possible	2 - 3	5 - 30
Turnip	early as possible	1 - 2	10 - 15

"Early as possible" — means as soon as spring conditions allow soil tillage and seedbed preparation. In some regions, outdoor seeding may be possible as soon as mid-April.

Transplanted Crops

Crop	Seeding time before field planting (days)	Field planting date	In-row spacing (cm)
Asparagus		May 15 - June 20	45 - 90
Broccoli	30 - 40	April 20	30 - 45
Brussel Sprouts	30 - 40	April 20	60
Cabbage	30 - 40	April 20	45
Cauliflower	30 - 40	April 20	45
Celery	70 - 80	May 25	20
Celeriac	70 - 80	May 15	20
Cucumber	15 - 20	June 1	15
Eggplant *	40 - 50	May 20	60
Globe Artichoke	90	May 9	60
Kale	30 - 40	April 20	60
Kohlrabi	30 - 40	April 20	15 - 30
Leek	70 - 90	April 20	20
Lettuce	30 - 40	April 20	30
Muskmelon	15 - 20	June 1	30
Onion - seed/sets		April 20	5 - 10
Pepper *	50 - 60	May 20	60
Pumpkin	15 - 20	June 1	90
Squash	15 - 20	June 1	90
Tomato *	40 - 50	May 20	90
Watermelon	15 - 20	June 1	30

* plant under cover of hot caps for frost protection see page 199

• Recommended Vegetable Cultivars

The cultivars recommended are considered superior, although others not listed may also be suitable. Most cultivars are generally available through Canadian seed catalogues.

Globe Artichoke

Green Globe

Asparagus

Franklin, Viking

Beans

Broad: Broad Windsor

Pole: Blue Lake, Kentucky Wonder, Scarlet Runner

Green Bush: Bush Blue Lake Selections, Jade, Podsquad, Slimjym, Strike

Yellow Bush: Gold Crop, Gold Rush, Sungold

Beets

Firechief, Formanova, Ruby Queen, Vermilion

Broccoli

Early: Captain, Major

Late: Arcadia, Emerald City, Eureka, Premium Crop

Brussels Sprouts (*transplant only*)

Oliver

Cabbage

Early: Balbro, Charmant, Emerald Acre, Green Start, Golden Acre, Grenadier, Morris, Parel, Polar Green, Tucana

Mid-season: Blue Pak, Costello, Cavalier, Cecil, Centron, Discovery, Minstrel, Princess, Roundup, Stonehead

Late: Bislet, Brutus, Lennox, Stonar

Savoy: Canada Savoy, Chieftain Savoy

Red Early: Pierrette, Red Meteor

Red Late: April Red



Carrots

Imperator: Caro Chief, Caro Choice, Eagle, Fancipak, Legend

Nantes: Bangor, Earlibird, Kamaran, Nantes Corless, Nelson, Presto, Special Nantes 616

Baby: Baby Orange, Earlibird Nantes

Cauliflower

Early: Amazing, Early Dawn, Siria

Mid-Season: Fremont

Late: Andes, Cumberland, White Rock, White Top

Celery

Tendercrisp, Ventura

Celeriac

Jose, Nemona

Chinese Cabbage

Bok Choi: Bok Choy, Joi Choi, Pak Choi

Suey Choy: Nestor, Optiko

Sweet Corn

Standard (su): Buttervee, Earlivee, Golden Jubilee, Seneca Horizon, Sunnyvee

Sugar Enhanced (Se): Aladdin, Custer, Geronimo, Maple Sweet, Peaches 'N Cream, Precocious, Quickie, Speedy Sweet, Stars-N-stripes, Sugar Buns

Supersweet (Sh₂): Extra Early Supersweet, Jubilee Supersweet, Mariah, Northern Supersweet, Seneca Scrumptious, Seneca Appalosa, Snowbird (White), Sweetie 70

Ornamental: Fiesta, (use tunnels in central and northern Alberta)

Ornamental Mini cob: Chinook, Wampum (use tunnels in central and northern Alberta)

Popping: White Cloud (use tunnels in central and northern Alberta)

Corn Salad: Elan, Nun 6484

Cucumber

Pickling: Bush Baby, Calypso, Earlipik, Ilonca, Pick-Rite, Pioneer, Spear-it

Slicing: Dasher II, General Lee, Jazzer, Slicemaster, Sweet Success

Greenhouse: Cargo, Corona, Farbio, Faron, Mustang

Eggplant

Long: Ichiban, Moneymaker, Tycoon

Oblong: Black Bell, Blacknite, Classy Chasis, Dusky

Kale

Green Curled Scotch

Kohlrabi

Early Purple Vienna, Early White Vienna, Grand Duke

Leek

Titan, Unique

Lettuce

Head: Gemini, Great Lakes Selections, Ithaca, Queen Crown

Butterhead: Buttercrunch, Butter King, White Boston

Cos: Darkland, Parris Island 318, Valmaine

Leaf: Brunia (oak leaf), Grand Rapids, Nevada, Red Sails, Ruby, Salad Bowl, Sierra

Muskmelon

Alaska, Early Dawn, Earlisweet, Flyer

Onion

Yellow: Copper King, Eskimo, Norstar

Red: Benny's Red, Mars

White: Southport White Globe, White Sweet Spanish

Pickling: Silver Queen, White Barletta, White Pearl

Perennial: Multipliers, Shallots

Bunching: Emerald Isle



Parsley

Leaf: Champion Moss Curled, Unicurl

Root: Hamburg Rooted

Parsnip

All American, Half Long, Harris Model

Peas

Early: Daybreak, Laxton's Progress, Olympia, Spring

Mid-Season: Knight, Patriot, Novella

Late: Bounty, Green Arrow, Puget, Triplet

Edible Pod: Sugar Ann, Sugar Daddy

Snow: Little Sweetie, Snowflake

Pepper

Hot: Cayenne, Hungarian Wax (yellow), Red Cherry (green)

Sweet Green: Cardinal, Early California Wonder, Parma,
Stokes Early Hybrid

Sweet Yellow: Giant Szegedi, Goldie, Gypsy

Greenhouse: Delphin, Goldstar, Kelvin, Leteus, Mazurka, Nassau, Plutonia,
Tango

Potato

There are approximately 150 potato varieties registered in Canada. The varieties listed here are a few popular varieties grown in home gardens. The seed of most of these varieties will be available at garden centres, although most stores carry only four or five varieties. Shape and maturity vary with growing location and soil.

Be willing to try other varieties, including specialty or novelty varieties available at some garden centres.

Early: Carlton – white skin, white flesh, round

Warba – white skin, white flesh, round

Superior – white skin, white flesh, round

Ptarmigan – white skin, white flesh, round

Norland – red skin, white flesh, round

Mid-season: Yukon Gold – light skin, yellow flesh, round
Ranger Russet (Ranger Amisk or Amisk) – tan, netted skin, white flesh, oblong
Goldrush – tan, netted skin, white flesh, oblong
Sangre – red skin, white flesh, round
Viking – red skin, white flesh, round

Late: Russet Burbank – tan, netted skin, white flesh, oblong
Bintje – yellow skin and flesh, oblong
Kennebec – white skin, white flesh, oblong
Red Pontiac – red skin, white flesh, round

Pumpkin

Vine, Large Fruit: Aspen, Autumn Gold, Connecticut Field, Jack O'Lantern, Small Sugar, Spookie, Rocket, Triple Treat

Vine, Small Fruit: Baby Bear, Trickster

Bush: Spirit

Ornamental: Baby Boo, Sweetie Pie

Radichio

Meduska, Rubico, Milan, Carmen

Radish

Summer: Champion, Cherry Belle, Comet, French Breakfast, Hunter

Winter: Chinese Rose, Black Spanish

Diakon: H.N. Cross, Silver Star

Rutabaga

Altasweet, Laurentian

Spinach

Unipack, Spokane, Tyee



Squash

Summer: Ambassador, Cousa, Green Magic II, Gold Rush, Richgreen, Scallopini, Super Select, Zucchini Select

Winter Vine: Baby Blue Hubbard, Buttercup, Golden Delicious, Vegetable Spaghetti

Bush: Buttercup, Golden Nugget, Table Ace, Table King

Ornamental: Sweet Dumpling

Kabocha (Japanese squash): Black Forest

Swiss Chard

White Stemmed: Fordhook Giant, Lucullus

Large white ribbed: Silver Giant

Red Stemmed: Burpee's Rhubarb, Ruby Red

Tomato

Large Fruited: Blazer, Brookpact, Northern Exposure, Nova, The Juice, Pilgrim, Shady Lady

Cherry: Cheerio, Red Alert, Subarctic Delight, Subarctic Maxi

Staking: Ultra Girl, Ultra Sonic

Greenhouse: Boa, Caruso, Cobra, Jumbo, Trust, Vendor

Greenhouse Cluster: Cencara

Summer Turnip

Purple Top, Tokyo Cross

Watermelon

Small Yellow: Yellow Baby

Large Red: Canada Supersweet, Stokes Sugar Hybrid



Herb Gardening





Herb Gardening

Planning and Planting

Like all plants, herbs are classified as annuals or perennials. Annuals are seeded each year or they may self-seed. Basil, marjoram, chervil, borage and dill are examples of annuals. Perennial herbs, like mint, thyme, chives and horseradish, last for many years. They are started either by seed or division from another plant. Some mints and thyme are tender perennials that need protection in the winter while chives and horseradish survive winters without extra protection.

When planning and planting the herb garden, keep the following points in mind:

- perennial herbs can be used as a framework
- taller growing plants are best located to the back or center of the garden
- annual herbs can be used as fillers; be sure the annuals are not placed too close to the perennials as the perennials can choke out annuals
- avoid putting the self-seeding plants in an area where you will be deep cultivating
- match the herb to the area where it will be growing
- rosemary, thyme or sage prefer a sunny dry spot, while lemon balm, chervil or the mints thrive in a semi-shaded, moist spot
- sandy loam to heavy clay soils are fine for growing herbs as long as the soil is well drained
- soils with high fertility are not necessary

- in many cases, the herbs produce more essential oils in soils with low fertility and, therefore, are more flavorful

Dill and borage are quick to self-seed and can become a nuisance if not controlled. Horseradish and mint grow quickly and can become quite invasive. These herbs are best planted into a two to five gallon nursery pot that has had the bottom cut out and has been sunk into the ground.

In the fall, mulch the tender plants to help them get through the winter. Trim back the perennial herbs once the frost has killed them. Soak the garden well with water prior to freeze up to protect the roots from freezing damage. Apply a mulch to the crowns of newly planted perennial plants to protect them from being forced out of the ground by freeze-thaw cycles.

Propagating Herbs

For directions on starting herbs from seed, see the section in Annuals on starting transplants.

Steps

Some herbs (mints, rosemary and sage) do not come true to type from seed and are best started from cuttings. Take cuttings 8 to 10 cm long from the top of the plant, making sure to cut just below a node. Pull off the large leaves and pinch out the center. Dip the cut end into water, then into a softwood rooting hormone.

The soil for rooting herbs can be a mixture of 75 per cent sand and 25 per cent peat moss, or 50 per cent perlite and 50 per cent peat moss. This soil mixture should be moist, but not soaking wet.

Push a hole into the soil; place your cuttings in the hole and firm the soil around the stem. A flat or pot can be used for rooting the cuttings. Once again, maintain a soil temperature of 15 to 20°C and keep the soil mixture moist by using a cover. The cuttings should be able to be transplanted after two to three weeks.

Chives and the mints can be propagated by division. In the spring, lift the clumps of these plants and use a sharp knife or spade to cut the clumps into sections. Be sure each section has ample roots to support the top growth.

Harvesting Herbs

Herbs are best used fresh, but they can be dried or frozen for use during the long, cold winter.

Harvesting herbs is best done early in the morning because this is when the essential oil concentrations are the highest. Time the harvest for either before or just as the flower buds open. Use a knife, scissors or pinching to remove the tips of new growth. This method stimulates new growth and delays seed set on the plant.

Preserving Herbs

Start any preserving process by washing and air drying the herbs or by brushing the soil off the plant leaves and stems with a brush.

Herbs can be dried in a commercial dehydrator following the manufacturer's instructions, but a dehydrator is not a necessity; there are alternatives.

Drying in the oven set at the lowest setting will take three to six hours. Lay the herbs down on a cookie sheet and place them in the oven, leaving the oven door open slightly for air circulation. Stir and check the herbs occasionally.

The microwave can also be used for drying. Instead of washing the herbs, just brush off any soil. Place about a cup of herbs in a single layer between paper towels. Microwave on high for three minutes. If the herbs do not then feel brittle and rattle when the towel is shaken, or if the leaves do not pull easily away from the stem, they are not dry. Return them to the microwave and run it for 20 second intervals until the herbs are dry. Care must be taken not to overheat the herbs as they will develop an off taste.

The cut stalks can be hung in bundles from hooks or coat hangers in a warm, dry, dark well-ventilated room. If you are drying a wide variety of herbs, label the bundles prior to drying with their name and the date of harvest.

Use a elastic band to secure the herbs. This band will contract as the stems of the herbs dry and will keep the bundle intact. A perforated paper bag over the bundles will catch any leaves dropping from the stems and will



keep the material dust-free. It can take up to two weeks until the herbs are crispy, but check the herbs daily to monitor their progress.

Leaves can be plucked from the stems and laid out on shallow trays or screens and air dried this way. The dried leaves can be plucked from the stems and stored in air-tight metal or glass containers.

Freezing is an alternative to drying. Pluck the leaves from the tough-stemmed herbs like tarragon or sage and brush off any dirt. Lay the leaves out on a cookie sheet and freeze them. Once the leaves are frozen, place them in freezer containers or bags and label. If herbs are going to be used within six months, blanching is not necessary.

Basil is the exception, it needs to be blanched or it turns black. To blanch, place the leaves in a strainer and pour boiling water over them. Lay them out on paper towel to cool. Once cool – freeze them.

Herbs can be minced by hand or by food processor and frozen in ice cube trays with water. Once frozen, they can be stored in plastic bags.

Herb pastes can be made by mincing leaves or sprigs in a food processor. While the machine is running, add oil a bit at a time until the mixture has formed a paste. Freeze the paste in ice cube trays. Once frozen, store the paste cubes in plastic bags. Frozen herbs can be chopped or used whole. Defrosting is not necessary: just add them to soups, stews or sauces.

Herbs can also be preserved by making herb vinegars and oils.



Herbs

Name	Propagation	Culture
Anise <i>Pimpinella anisum</i>	seed	well-drained soil, sun, space 15-20 cm
Basil <i>Ocimum basilicum</i>	seed, sow after ground warm	moist, well-drained soil, sun, pinch to make bushy
Bee Balm <i>Monarda didyma</i>	seed, spring or fall division	rich, moist soil, sun to part shade
Borage <i>Borago officinalis</i>	seed, sow in early spring	dry, sunny place, will self-seed
Caraway <i>Carum carvi</i>	seed, sow spring or fall	light soil, full sun
Chervil <i>Anthriscus cerefolium</i>	seed, sow spring or fall for secession of greens	rich, organic soil, part shade
Chives <i>Allium schoenoprasum</i>	division of bulbs, seed	rich, moist soil, can be grown in pots for winter use
Chives, Garlic <i>Allium tuberosum</i>	division of bulbs, seed	rich, moist soil, can be grown in pots for winter use
Coriander <i>Coriandrum sativum</i>	seed	light soil, full sun

Use	Characteristics	Harvest/Storage
leaves and seeds in salads, bakery goods, duck, pork and fish, tastes like licorice	annual	use leaves fresh, harvest seeds when ripe, dry, remove stems and store
chopped leaves fresh or dry have clove-pepper taste, seasoning for meat dishes and vegetables especially tomatoes	annual, several cultivars with different leaf colors	cut stalks when starting to flower, dry for two weeks, store in oil or frozen paste
leaves in cooking or dried in tea blends, flowers in salads or garnish, compliments pork, duck, curries and several fruits	perennial	harvest when lower leaves start to yellow; for tea, cut leaves just before and after flowering; strip leaves, lay to dry, dry quickly; drying longer than 3 days discolors leaves and produces less flavorful tea
young leaves have cucumber flavor in salads, leaves can be steamed like spinach, flowers as garnish in drinks and baking	annual .6-1 m	pick open blossoms, pick fresh leaves, store as flavored vinegar
seeds flavor baking, soups sauces, leaves for garnish	biennial, annual strain also	dry seed heads, harvest seeds in autumn of second year, harvest annual in fall
leaves fresh or dried, use as garnish, mix with salad greens	annual	leaves best used fresh, freezing the best way for long-term storage
leaves fresh or dried, in salads or as seasonings, has onion flavor	perennial bulb	leaves, best used fresh
leaves fresh or dried, in salads or as seasonings, has garlic flavor	perennial bulb	leaves, best used fresh
seeds for spices in baking, dressings	annual, tall .6 m	harvest seeds as soon as ripe, flavor develops upon drying

Name	Propagation	Culture
Cilantro <i>Coriandrum sativum</i> (leaf strain)	seed	light soil, full sun, sow thick
Dill <i>Anethum graveolens</i>	seed, self-seeds	sow early, rich soil, secession seed for continuous harvest
Fennel <i>Foeniculum vulgare</i>	seed, sow directly	hot sandy soil, needs space
Garlic <i>Allium sativum</i>	sets, planted mid August, mulch for winter protection	moist, well-drained soil, sun to part shade
Horseradish <i>Armoracia rusticana</i>	root cuttings with bud, aggressive	moist, rich heavy soil, full sun
Lemon Balm <i>Melissa officinalis</i>	seed	well-drained soil, full sun
Lovage <i>Levisticum officinale</i>	seed division	well-drained soil, full sun
Mint <i>Mentha spicata</i> (spearmint) <i>Mentha peperita</i> (peppermint)	rhizomes	rich, moist soil, semi-shade, thin beds and renew 3-4 years, semi-shade
Oregano <i>Origanum vulgare</i>	seeds or division	grows well in poor soil, does well in container

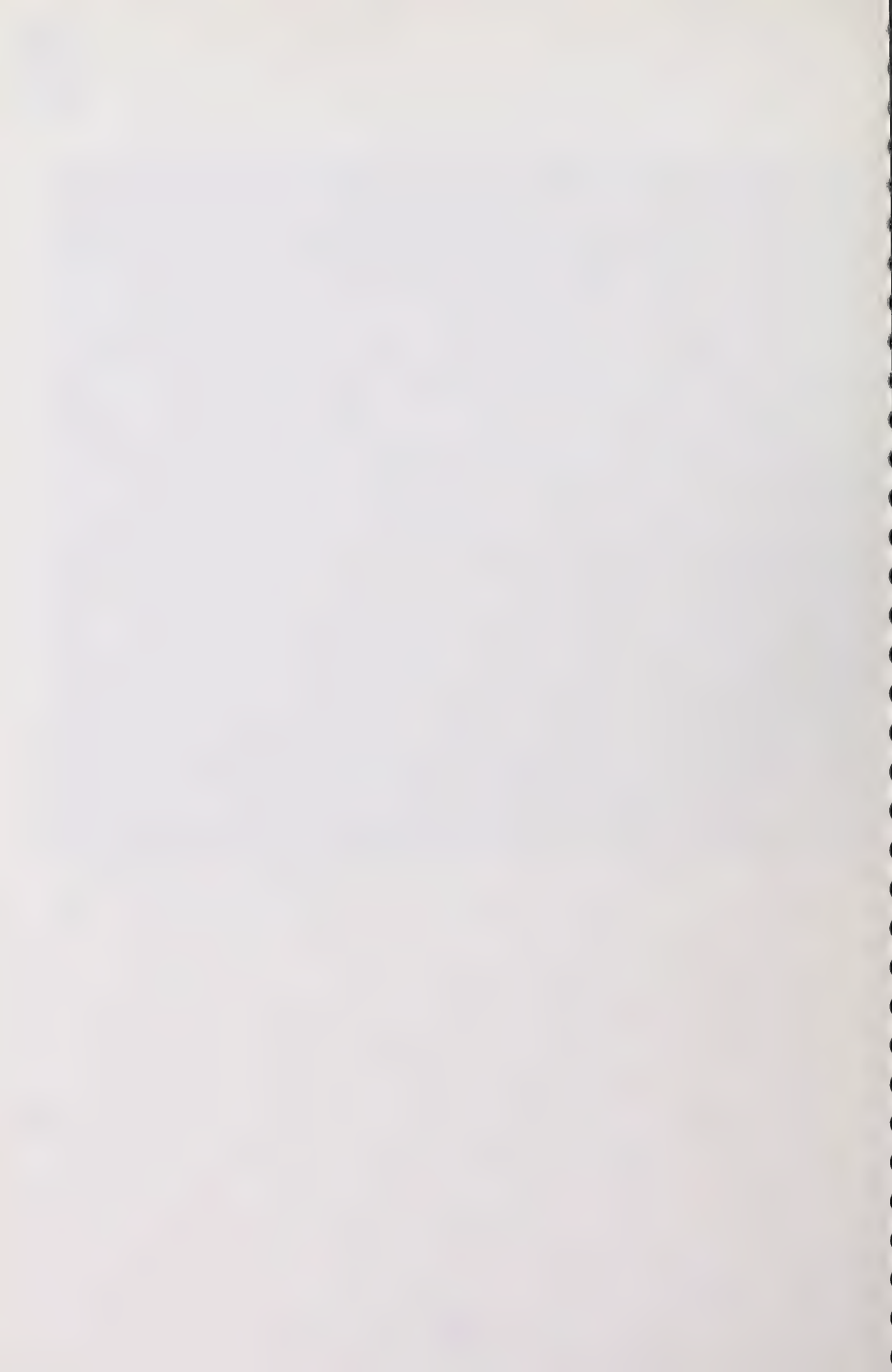


Use	Characteristics	Harvest/Storage
leaves for flavorings in salads, soups, salsas	bolts slowly, produces bushier plant	harvest when plants 15-20 cm tall
leaves for salads, seed stalks and leaves for pickles, used dry to flavor meats, fish and vegetables	annual .6-1 m	leaves at best as flowers open, seeds as soon as ripe, cut off whole plant and hang to dry, freeze whole dill stems, snip off what is needed and put rest back in freezer
leaves, stems and seeds, used for fish sauces	annual 1 m	flower stalks harvested before bloom, eat like celery, leaves best fresh
chopped cloves for meat, sauces, whole cloves for pickles	onion-like leaves to .6 m	harvest following July as leaves begin to naturally die back, cure in warm, dry area, store dark and dry
leaves can be added to salad, root is ground and made into condiment	.6-1 m give plenty of room, plant where it is isolated, vigorous plant	dig root in fall, scrub and store in crisper of fridge or other cool dark place
leaves and stems used for tea, toss fresh leaves into salads or with vegetable dishes	perennial .6 m	harvest before plant flowers for best oil content, dry quickly – 2 days at most
anywhere celery is used	perennial 2.5 m	leaves, stems and roots can be harvested, blanch and store in freezer
crushed leaves flavor tea, cookies, mint sauce	perennial plant in sunken tubs to keep plants restricted	pick leaves individually from plants, use fresh or dried, pick just as flowering begins, freezing is option
fresh or dried leaves for meat or vegetable dishes, "pizza herb"	perennial grows .6 m	cut when plant starts to flower, hang to dry, remove leaves

Name	Propagation	Culture
Parsley <i>Petroselinum crispum</i>	seed, self-sows	medium, rich soil, sun or part shade
Sage <i>Salvia officinalis</i>	seed, stem cuttings or crown division	well-drained soil, cut back in spring
Sweet Marjoram <i>Origanum majorana</i>	seed, cuttings, crown division	shade seedlings until established, full sun, space 20-25 cm apart
Summer Savory <i>Satureja hortensis</i>	seed	medium, rich soil in sun, make successive sowings 3 weeks apart
Tarragon (French) <i>Artemesia dranunculus</i>	division of root crowns	light, well-drained soil, divide plants every 3 years
Thyme <i>Thymus vulgaris</i>	stem cuttings, division, sow seed early	well-drained soil, full sun, cut back each spring, mulch in winter if continuous snow cover is not assured



Use	Characteristics	Harvest/Storage
leaves for seasoning for soup, meats, salads, garnish	biennial	both leaves and roots keep flavor when dried or frozen
leaves dried or fresh for poultry or meat seasoning	shrubby perennial	cut leaves or leafy tops to stalks when flowers begin, freezing not recommended
fresh or dried as seasoning for meat dishes	annual, low-spreading 30 cm tall	cut stalks when starting to flower, hang to dry
leaves used fresh or dried as seasoning in soups, egg dishes and sauces	annual, leaves pungent and spicy	cut stalks when starting to flower, or cut leafy tips when plants are in bud, hang to dry, freezing not recommended
fresh or dried leaves in sauces and sea food, ingredients of tartar sauce, young leaves flavor vinegar or butter	hardy perennial grows to .6 m much branched	young leaves and stem tips are best used fresh, some flavor is lost on drying
fresh or dried, blended with other herbs to season meats, vegetables, soups and sauces	low growing 15-20 cm	cut tops and flower clusters when plants are blooming, hang to dry, strip leaves or lay on screen to dry, freeze in air-tight containers





Glossary





Glossary

acid – having a pH value less than 7.0

alkaline – having a pH value greater than 7.0

annual – plants that grow from seed, produce flowers and may or may not produce new seeds before they are killed by frost in autumn

biennial – plants that grow from seed one season and flower during the next season

bog garden – a garden of free-draining, moisture retentive soil that water marginal plants are grown in (water gardening)

candles – new growth of pine and spruce

crown – top growth of plant, including scaffold, secondaries and lateral growth

day-neutral strawberries – not dependent on day length to produce flower buds; produce fruit throughout growing season

deadheading – the removal of dead flowers

deep water plants – grown in soil but submerged in deep areas of a pond

floricane raspberries – produce fruit on the second-year canes

emergent plant – grows in soggy soil on the banks of ponds or streams (water gardening)

everbearing strawberries – set fruit buds during both the short days in the fall of the previous year and during the current season under long days, thus producing fruit twice in a year

heading back – removal of terminal growth and some laterals

heel in – to temporarily plant in soil or other media and cover, either for storage or winter protection

June bearing strawberries – produce single crop each year for three to four weeks, usually in July; flower buds are produced in the previous fall

laterals – branches that grow from the sides of trees or shrubs

leader – central, vertical, dominant stem of tree

marginal plant – grown in shallow water near pond edge; roots firmly planted in soil (water gardening)

marginally hardy – plants that may not be reliably hardy for a given growing zone

mulch (ground) – protective covering spread on the ground to prevent erosion, to control weeds and to help retain soil moisture

mulch (plant) – protective covering of straw, peatmoss, dry leaves or grass clippings mixed with dry leaves applied over plants for winter. Usually applied to a depth of 5 cm. Use on strawberries, roses and newly planted perennials going into their first winter

organic matter – soil amendment from animal or plant origin

oxygenator/submerged plant – grown completely under water, may or may not be rooted in soil

primocane raspberries – produce fruit on the first-year canes, also known as fall-fruiting or everbearing raspberries

scaffold branches – main branches of tree

secondary branches – growing from main scaffold branches

spurs – shortened branches with many fruit buds and a cluster of leaves forming laterally on main branches

strong crotch angles – U-shaped, where branch is attached to the trunk

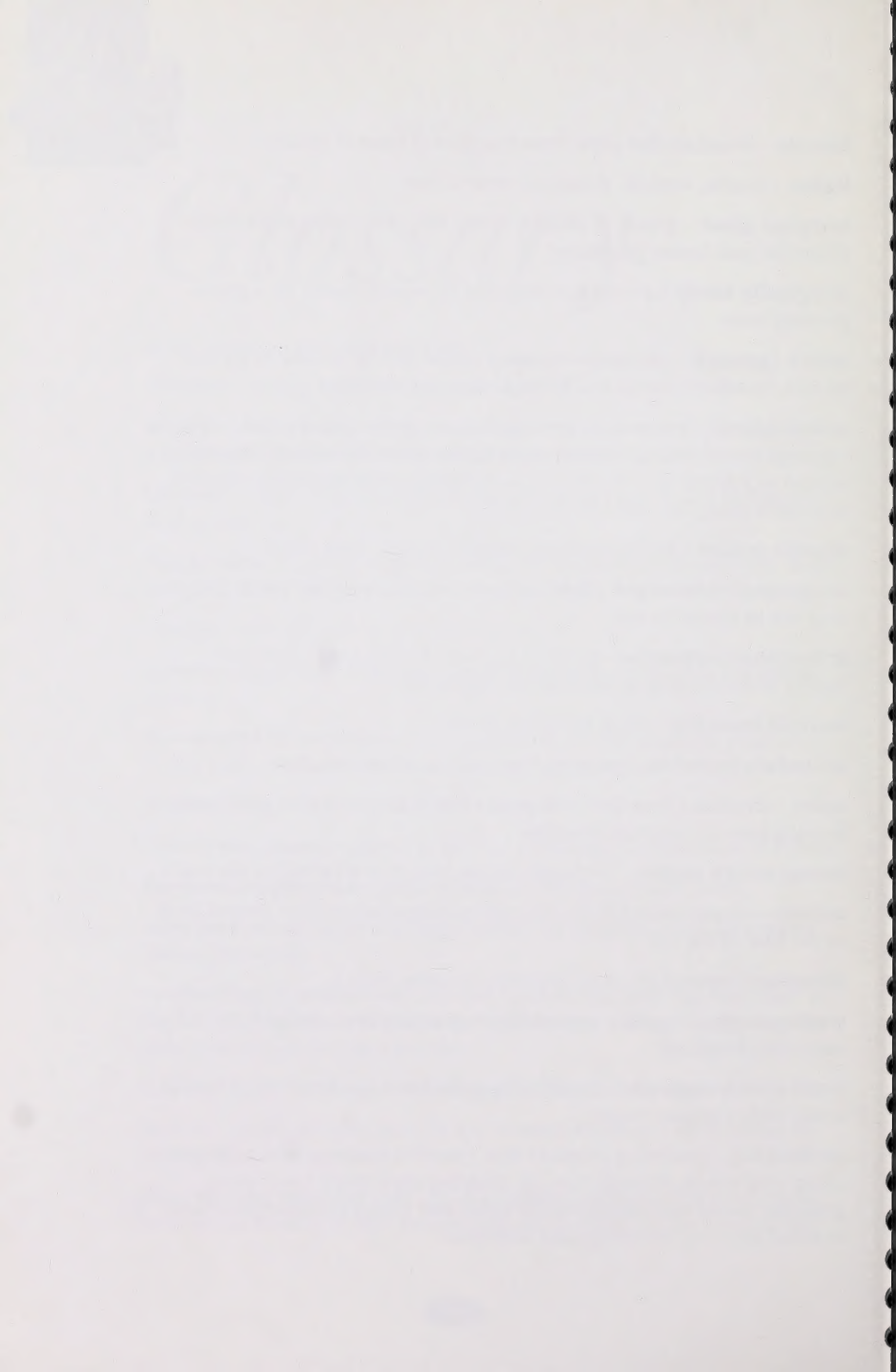
suckers – shoots arising from root system either below or at ground level, or the base of the tree

thinning – removal of whole branches (pruning term)

watersprouts – vigorous vertical shoots growing from scaffold or secondary branches

weak crotch angles – V-shaped, where the branch is attached to the trunk with a narrow angle

xeriscaping – gardening practices that conserve water such as collecting water that would normally run off, planting appropriate lawn areas, grouping plants with similar water needs and proper sprinkler placement to avoid watering driveways and sidewalks



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