GARDENING

TIPS FOR GARDENING SUCCESS

GROW HOW!

Responsible Gardening -
Pesticides as a Last Resort

Soil -
Giving Your Garden What it Needs

The Basics of Lawn Care

Trees
Planting, Pampering and Pruning

Composting
Home-made Fertilizer

Beneficial Insects

And more!

call 268-4678 or
www.calgaryparks-rec.com
for gardening info.

THE CITY OF CALGARY

So, You're ready to garden....

If you're new to gardening, new to gardening in Calgary, or have simply caught the gardening bug, you may be looking for the definitive guide to gardening in Calgary - an information source that tells you step by step how to garden in our fair city. Well, your yard could be overgrown with weeds if you wait for such a resource to come along. Why? Gardening is just too complex a subject to capture in one book.

That's the bad news. But before you pave over your property, here's some good news. There is a formula that can help anyone achieve gardening success.

Know Your Garden + Know the Plant's Needs = Success!

GARDENING RESPONSIBLY

If you know your garden and plants' needs and provide for those needs without the use of pesticides, you'll be an environmentally friendly and successful gardener. And with so many of us enjoying gardening these days, it's important that we show concern for our personal and environmental health by using natural methods instead of pesticides wherever possible.

Environmentally friendly gardeners don't try to wipe out every pest; they just reduce them to an acceptable level.

Here's how:

- Map out your yard, take an inventory of all plants and trees, and then inspect them regularly for early signs of change in health.
- Relax your standards a little bit! A few weeds won't kill your garden. What's more, insects are a normal part of a garden's natural beauty and ecological balance.
- That said, decide how many pests your plants can tolerate before they are damaged beyond your comfort level, and when to start treating the problem.
- When you understand the plants' life cycle, the pest and its natural enemies, and the ecosystem surrounding them, you can choose the best time to intervene.

Choose strategies that are:

- Least hazardous to human health
- Least disruptive to natural controls (beneficial insects etc.)
- Least toxic to non-target organisms (the good guys)
- The most permanent
- Easy to carry out
- Most cost-effective in the short & long term

Once you know what's causing the problem and make a few adjustments, find out if your strategy is working. If necessary, make adjustments - perhaps for two or three seasons - until the problem disappears. Remember, responsible gardening requires vigilance and patience.

Look for this symbol for environmentally friendly gardening tips.

www.calgaryparks-rec.com
or call 268-4678

KNOW YOUR GARDEN

Where is Your Garden?

Be aware of Calgary's climate. Usually the last frost is May 23 and the first is around September 15. Calgary has cool summers, unreliable snow cover, sudden summer storms with hail, and limited precipitation.

In general, the growing season gets longer, and the number of suitable plants increases the further you get from the foothills. So the west and northwest have rigorous conditions and the most limited choice of plants, while districts on the eastern edge of the city enjoy the longest growing season and greatest variety of suitable plants. Most neighbourhoods fall somewhere between these extremes, except for the "banana belt" — the downtown core and inner city areas — with the longest frost-free season and the opportunity to grow the greatest variety of plants.

Then there's chinooks. Surprisingly, cold temperatures don't injure Calgary's trees and shrubs. Instead, damage occurs during chinooks when rising temperatures melt snow, and plants start the processes needed to grow new root hairs and open leaf and flower buds. At this point, plants are vulnerable to injury from cold and frost because they can't return to their previous state of growth.

And finally, consider your garden's microclimates. The north side of a building or fence is cold, shady and damp; the south side is hot, sunny and dry; east gets morning light and afternoon shade; and west is cool in the morning but hot and sunny in the afternoon. Also, where does the wind come from? Do you have shade from a neighbouring building or trees?

Soil

While our nutrition comes from food in our fridge and cupboard, plants draw nutrition from soil. So as a gardener, keeping soil well stocked is one of your most important jobs Here's how:

- Provide enough organic matter. Healthy soil contains between 5 and 10 % of organic matter — without it, soil is nothing more than "dirt".
- Make sure your soil holds water well and drains easily. It shouldn't have standing water after a rain or watering but should stay damp just below the surface: 2.5 to 5 cm (1 to 2 inches). Loam, which contains sand, clay and silt in almost equal proportions, holds moisture well.
- Supply nutrients — the source of plant growth. Water, carbon, hydrogen and oxygen are the most important nutrients, followed by mineral nutrients. You can supply the mineral component through compost.
- Maintain a pH of 6.0 to 7.5.
- improve the texture, structure and workability of your soil. Good soil holds moisture well, has a crumbly texture and is easily worked. You can improve these features by adding sand and organic matter in early spring before planting, or in late fall.

Use a garden fork to loosen the soil to a depth of 30 cm (12 inches). Add 2.5 to 10 cm (1 to 4 inches) of coarse, sharp sand, and 7.5 - 15 cm (3 - 6 inches) of compost or rotted manure for the first few years to build up the amount of organic matter in the soil.

To maintain the organic matter levels add 2.5 to 5 cm (1 to 2 inches) of compost or rotted manure each year. Organic matter must be continually replenished because it decays and is used by plants and the various soil organisms.

Compost

Composting is a naturally occurring process of decay. When gardeners build compost piles they speed up and intensify this process, producing a “home-made” fertilizer.

There are many benefits to composting. It reduces the amount of household garbage — about one third of household waste can be composted — which in turn reduces wastes sent to landfills. The finished product of composting — Humus — makes soil easier to work. Compost improves the chemical and physical properties of the soil, decreases leaching of valuable nutrients from the soil, and acts as a slow-release fertilizer. Compost can be used as mulch around trees, and in shrub and flower beds. You don’t need to buy soil conditioners and fertilizers when you use your own compost — which saves you money.

Getting Started

Choose a sheltered spot where there will be good drainage and some sun. A compost heap needs air, warmth and moisture. To make it easier for you to access, locate it close to the house.

A compost heap can be a pile 1m x 1m x 1m, or an enclosure, 1m x 1m x 1m, built from rot-resistant materials such as cedar, concrete blocks, wire or plastic. It can be home made or purchased. The size of the pile is important because a small pile will not be able to create temperatures high enough to kill insect eggs or larvae, weed seeds, or plant disease organisms.

A compost heap is arranged like a layer cake. Start with a layer of dry materials: dry leaves, or straw or shredded branches. Next, a layer of wet materials: kitchen scraps, green leaves or weeds. A small amount of soil will help to get things started. Additives, compost starter, fertilizer, or lime are not needed.

Keep adding materials in layers until the bin or heap reaches 1m in height. Keep the pile moist but not soggy or wet; in Calgary you will need to add water to the layers as you build the pile as well as when it is turned.

At the end of August you can start a second compost heap. Maintain the first heap by turning and moistening it; this heap should be ready to use in the garden in autumn (October). Materials can be added to the second pile all winter; the composting process will continue but very, very slowly. Compost from the second heap will be ready for use in the next summer.

What to Use

Compost should be two parts green (nitrogen-rich) materials to one part brown (carbon-rich) materials.

2/3 Nitrogen-Rich	**1/3 Carbon-Rich**
Green leaves	Evergreen Needles
Weeds (before they set seed)	Dry leaves
Vegetable scraps	Dry grass clippings
Fruit scraps	Bark chips, sawdust
Hedge clippings	Shredded paper, paper towels
Green grass clippings	Straw
Coffee grounds	Scraps from
Tea bags	wool or leather
Egg shells	Dust from vacuum cleaner

KNOW YOUR PLANTS' NEEDS

GRASS

Water your lawn deeply but not often, and use a sprinkler or irrigation system. A lawn needs a least an inch of water every 7 to 10 days, depending on the weather. Water more when the weather is warm or windy; less when it's cool and damp. And don't forget that your grass shares water with all those tree roots.

Here's a simple way to tell how long to leave the sprinkler system on:

- Place shallow (2.5 cm deep) containers (cat food or tuna) evenly over the lawn.
- Note the time and turn on the water.
- Check at regular intervals.
- When the tins are full or have reached the 2.5 cm mark, note the time again.

The length of time it takes to fill the containers is the length of time needed to water your lawn. When watering heavy or compacted soils, the sprinkler may have to be shut off and moved to allow the water to soak into the ground.

Mow Frequently

Keep grass tall — at least 4 to 5 cm (1 1/2 to 2 inches) — and cut only 1/4 of the blade at mowing. Make sure your lawn mower blades are sharp and balanced. You can leave the clippings if you mow often and water deeply; otherwise, compost.

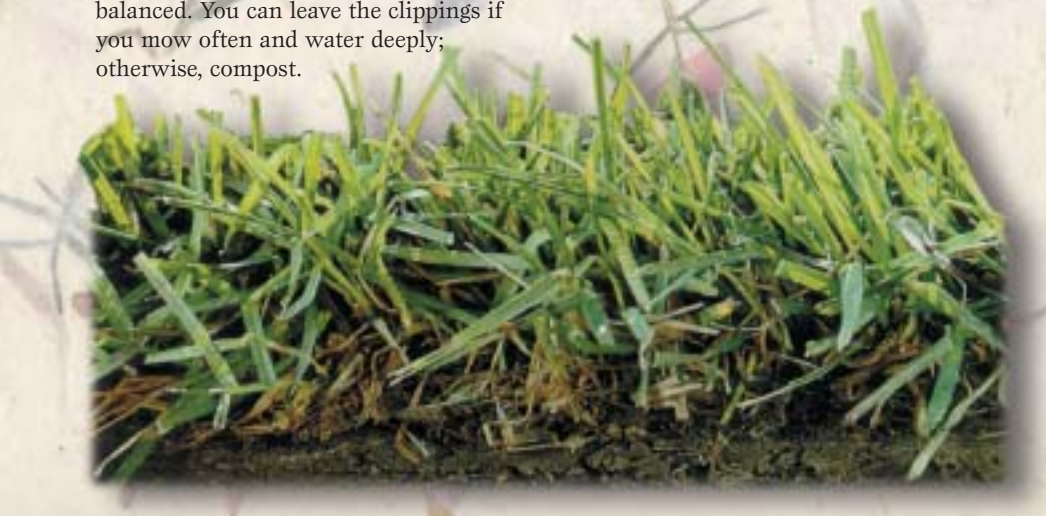
Fertilize

Apply fertilizer - which supplies grass with the elements it needs to make its own food — to growing lawn. This improves the lawn's colour, root growth, and increases resistance to disease and weeds.

The most common elements in fertilizer are nitrogen (N), phosphorus (P), and potassium (K). Nitrogen is important for leaves and green colour. Phosphorus encourages root growth and plant strength. Potassium is needed for plant health, cold hardiness and disease resistance.

Lawn fertilizers come in a variety of formulas. The general recommendation is to apply 2 kg of "actual" nitrogen per 100 square metres. A 10 kg bag of 10-15-10 has 1 kg of actual nitrogen and covers 200 square metres. A slow release fertilizer such as a sulphur coated urea with about 20-25 % N, 5-10 % P, and 5-15 % K applied in mid to late May is the simplest choice. One application of fertilizer is enough for the entire summer!

Top dressing is another way of improving the soil under a lawn and adding nutrients. Spread a very thin (0.5 cm) layer of composted organic matter and coarse sand (50:50 mixture) over the lawn after it has



been aerated. Top dress in spring or fall or both. Do not apply more than 0.5 cm of top dressing material — too thick a layer will kill the grass.

Aerate

You should aerate (poke holes in your lawn) in the fall or spring to remove thatch — dead grass, roots and blades. Lawns in Calgary tend to have lots of dry grass and thatch. A little thatch is good but not more than 1/2 an inch.

Dew Worms

Dew worms or "night crawlers" are earthworms that are active at night but also surface and crawl about during wet or rainy weather. They often leave casts on the surface which make lawns bumpy and uneven. Dew worms are more common on older, shady or heavily watered lawns in Calgary.

Dandelions

Dandelions are more than weeds. They mean you're not watering enough or water can't reach grass roots because of a thatch layer.

Weeds

Weeds don't grow easily in well-maintained lawns. So take weeds as a sign that your lawn is under stress. For example, if your lawn is dry and mowed short (ideal growing conditions for clover) clover will reappear until you correct mowing and watering practices.

Find out what's causing the problem and deal with it quickly - a lawn damaged by weeds or stress is weakened and likely to be invaded by other pests. Start by cutting and watering your lawn correctly, aerating, and fertilizing. Dig or pull weeds, rake off moss and pick mushrooms. If this doesn't work, you can try lawn herbicides, making sure you use the right control product according to directions.

Trees

Tree Planting

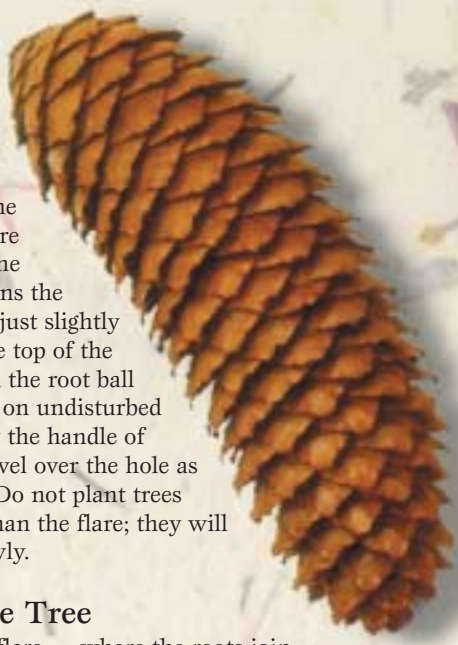
Location, Location, Location

- Choose a planting site that allows the tree to grow to its full size, since your tree will live in this spot for many years, in some cases up to 100 years.
- Select the right tree for this location. Refer to books, call the Hortline, and talk to experts.
- Check for overhead wires and any other obstructions. Call Alberta First Call (1-800-242-3447) to locate underground utilities.

Prepare a Site

The soil where a tree grows is very important to the tree's survival. Tree roots grow best in soil which holds moisture yet drains easily, holds oxygen, contains the nutrients needed for growth, has a structure which allows roots to develop and grow easily, and where temperatures are moderate. City soils are more compacted and less fertile than farm or forest soils because of the construction methods and heavy equipment used to build our homes, utilities and roads. So it's important to give trees a good start by planting them in fertile soil.

- Prepare a planting site up to 5 times the width of the root ball.
- Cultivate this area to a depth of 30 cm (12 inches) or more, using a garden fork or a shovel.
- Add some organic matter (compost) to the soil in the entire planting site.
- Rake the soil in the planting area to make it 2.5 cm (1 inch) lower than the lawn or ground around it. This will form a basin for the mulch and for watering. Do not build a raised lip around the edge of the planting area, because it will encourage roots to grow up into it. This can cause problems for lawn maintenance.
- Excavate the planting hole in the centre of this site. It should be deep enough so that the trunk flare (where the trunk joins the roots) is just slightly above the top of the hole, and the root ball is sitting on undisturbed soil. Lay the handle of your shovel over the hole as a guide. Do not plant trees deeper than the flare; they will die - slowly.



Plant the Tree

The trunk flare — where the roots join the trunk — should be above ground. Trees that are planted too deeply or have soil hilled up against their trunks will die a slow death, signaled by lots of aphids, late leafing out in spring and holding on to leaves longer in the fall.

- Carefully set the tree in the hole. Hold the tree by the root ball and not the trunk and check to see that the tree is standing straight.
- Make any adjustments to the planting hole; remove a little more soil, or add a little. The top of the root ball should be at grade level.
- Begin to fill in the hole; use the same soil as in the planting site.
- Work the soil in around the roots with your hands or the end of the shovel as it is being put in the hole. Gently firm soil with your foot to remove any large air pockets. Do not "stomp" hard on the soil.
- Do not add any soil higher then the trunk flare (the area where the trunk and roots join).
- The three common types of tree root balls — container, balled and burlap or wire basket, and bare root — have small variations in the way they are planted. Follow instructions provided by the supplier.

Tree Care

Water regularly

Contrary to popular belief, tree roots spread out, not down. Most tree roots are in the top 2 to 3 feet of the soil and spread out 3 or 4 times the height of the tree! And those roots need water to cool the tree and move nutrients around. Lack of water leads to insect problems, so water wisely:

- Deeply water trees on a regular basis through the growing season, especially during severe dry spells. Water with a frequency that maintains the moisture in the soil. The top inch or so can dry out, but not lower.
- Lay a soaker hose around the drip-line (under the outer edges of the branches where feeder roots are located) and let it run for several hours.
- Avoid frequent, shallow watering. This encourages tree roots to remain shallow, making them sensitive to drought stress and frost damage.
- It is possible to drown tree roots, so avoid over watering.
- Reduce watering in early fall (mid-August). Then, to help prevent winter injury, water again in late fall (mid-October) after the leaves have dropped.
- Water trees and shrubs planted on the boulevard or close to roadways in early spring to flush away road salt.

Mulch

Mulch is a soil covering of materials such as bark, wood chips, pine cones, pine needles, or compost. Mulching evens soil temperatures; reduces water evaporation; prevents weeds; reduces competition with grass for water and nutrients; and eliminates the need to cultivate. It also protects roots from damage by hoes, spades and garden forks and creates a safe distance between weed-eaters, lawnmowers and trunks. Using an organic mulch (bark chips, pine cones, compost, etc.) also adds nutrients to the soil as it decays.

To properly mulch, spread a loosely packed layer of mulch, 5 to 12.5 cm (2 to 5 inches) deep, over areas where you want to promote root growth. Make sure the mulch is no thicker than 15 cm (6 inches) because this reduces oxygen to the roots. Likewise, make sure the mulch doesn't touch the trunk because this can encourage decay and insect damage.

Fertilize

We can't "feed" trees. Plant food is not absorbed from the soil; it is produced in the leaves of plants, through photosynthesis. The nutrients in the soil or in fertilizer (in a liquid state) are absorbed by the roots and carried to the leaves where they are used with sunlight, water and carbon dioxide to make food.

- Fertilize trees in late spring/early summer, after they have leafed out and are actively growing (mid-May to mid-June).
- Do not fertilize with chemical fertilizer after July. Allow plant growth to slow down before fall.
- Do not fertilize plants when they are under stress from severe heat, drought or insect infestations.

Regular inspections can show you changes in the health of a plant before the problem becomes too serious. Signs of poor or reduced plant health include smaller leaves than normal, yellowing leaves, poor growth of buds and shoots, decaying branches, gradual death of the upper part of a plant, or a general lack of overall vigour.

Check for insects regularly — especially on plants that have had problems in other years. If you find insect pests early, you can use simple control measures and reduce the amount of damage to a plant.

Tree Pruning

Tree pruning removes dead wood, branches that are rubbing and damaging the bark, and diseased or broken branches. Pruning doesn't make trees grow, nor should it make trees fit a space or keep a certain shape. Severe pruning leads to weak branches as well as insect and disease problems. Why? Because trees need their leaves to make food, so cutting off all the smaller branches and leaves puts trees on a very strict diet. What's more, severe pruning forces a tree to use energy to make new leaf buds.

When to Prune

Prune when trees and shrubs are young - it's better for the health of the plants and easier and safer for you because few special tools are needed.

Prune when trees and shrubs have ample reserves of energy and can form strong barriers over the pruning cuts: during late dormancy before buds begin to swell, or a few weeks after the leaves have opened. The worst times to prune are when the leaves are opening or in fall because energy reserves are low or needed elsewhere by the plant. If in doubt, "prune in June".

How to Prune

Remove small branches using by-pass shears or loppers. For larger branches, use a pruning saw. Leave anything bigger for a professional - an arborist - who understands proper pruning techniques. Do not make cuts flush with the trunk; leave the branch collar.

Hiring a Professional

- Get at least three estimates; check in the Yellow Pages of the telephone book under TREE CARE.
- Be home for the estimates and ask questions. Ask if the person doing the estimate will be doing the work; where they were trained; how long they have been working; and how they feel about trees.
- Get references of similar work and take the time to visit these sites. The pruning should NOT be noticeable. The plants should look natural — no stubs or tears, no large branches with smaller ones sticking out of them.
- Be home when the work is being done and watch - from a safe distance. Let them know you will stop them if you do not like what they are doing. It is better to have one poorly cut branch than to come home to find the whole tree has been improperly pruned.

Green Thumb Thoughts

Matching plants' needs to what you and your garden can provide, is a sure way to enjoy gardening success. But if you need a little more help, try these tricks of the trade:

How Much Time Do you Have?

If you love to putter, annuals may be the plants for you. But if you love to putt on the golf course, be sure to choose low-maintenance plants. If you are enthusiastic in spring but soon lose interest, try alpine plants, which often bloom early in spring and are happiest left alone during the summer.

Gardening Notebook or Journal

Here, you can write down the full botanical name of the plants as well as where, and when, you got them. Make notes about weather, insects (the good ones, as well as the bad ones) and what you did. Keep the tags that came with your plants, or seed packets, in the notebook. Most of all, experiment and have fun! Before you know it, you may even acquire a green thumb.

Use the Services of Beneficial Insects

Take a stroll around your garden and you will soon notice all sorts of tiny creatures going about their business. The more you look, the more you will see ... but don't be alarmed ...

not all of them are eating your favourite plants; many are your allies in the garden.

Most of us have been brought up to regard anything that creeps, crawls, wriggles or squirms as something 'nasty'. In fact, many of the creatures in your garden are harmless and even useful. They work hard to prevent pests and diseases from getting out of hand. Every pest and disease has its own predatory pest and diseases. If this were not so, our gardens would be crawling with caterpillars and knee deep in aphids. A gardener should try to help these 'beneficial' insects in their work.

Never try to wipe out every pest; just reduce pests to an acceptable level. Beneficial insects can be a great help in controlling many garden pests and we would be lost without them.

- Stop using chemical sprays because this kills the good guys (natural enemies) as well as the bad guys (pests).
- Get to know the beneficial insects so that they are not killed by mistake.
- Encourage the "good guys" by supplying suitable sources of food and shelter.

Be a Good Neighbour to Natural Areas

If you're fortunate enough to live next to a natural area, then you know how special these places are. What you may not know is that your actions can affect the health of these special habitats. You can help by protecting their natural state, making sure you don't encroach on natural areas, and reducing the risk of fire.

Don't Encroach

Encroaching is "to advance beyond the usual or proper limits". If you build a fence or garden shed in your neighbour's yard, this is an encroachment. It's no different when you have a city park on the other side of your fence. Bear in mind, if you do encroach onto a natural area, you will be required to remove the encroachment and repair any damage. Please do not:

- mow the grass behind your fence
- dump leaves, brush, sod or other waste
- plant trees, shrubs, grasses of any kind (this includes seeding grass or "wildflower" mixes)
- prune trees behind your property
- put in a garden or raised bed
- put up a bird feeder/bird house - you may encourage birds that aren't native to Calgary

Reduce the Fire Risk

Most natural areas are extremely unlikely to burn, unless deliberately set. What's more, the risk of a fire in a natural area damaging private property is extremely low in Calgary. Nevertheless, we do take precautions to reduce the risk to people and property, while protecting the natural character and integrity of the natural area. These include picking up litter, controlling weeds, and cutting a buffer strip — usually 3 to 4-metres wide - to act as a fire break.

There are a number of things you can do to reduce the risk of fire on your own property and in the natural area next door:

- Don't encroach on the natural area in any way.
- Maintain a grassed, 3 to 4-metre buffer on your side of the fence that is free of shrubs and low growing trees between your property and the natural area. And, keep the lawn well watered, especially during the dry spring and late summer.
- Don't let dried vegetation collect in the corners of your yard and under your deck.
- Consider other types of landscaping such as raised beds, a rock or wildflower garden or patio in place of a turf lawn. These are excellent ways of creating visual interest while maintaining a fire break.
- Keep your trees and shrubs healthy and well watered. Native trees and shrubs are an excellent choice for your yard as they are well adapted to local conditions.
- Prune your trees and shrubs to get rid of dead branches and diseased limbs.
- Avoid growing evergreen trees close to your house. Maintain a 2- to 3-metre zone closest to your house that is clear of any trees and shrubs.
- Store firewood away from buildings; not under your deck.

GARDENING INFORMATION AT YOUR FINGERTIPS

Find out more about environmentally friendly gardening through The City of Calgary's Hortline, a free gardening information service. The Hortline is a great way to learn more about yard and garden care. You can access the Hortline in 3 ways:

- Using a touch-tone phone, call **268-4678 (HORT)** and follow the instructions to select the topic of your choice.
- Browse the website at **www.calgaryparks-rec.com** where you can look up the Hortline topics and print copies, if you wish.
- E-mail specific questions to **PRPDHRT@gov.calgary.ab.ca.**

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