

## fall composting

Each year thousands of tons of leaves are sent to landfills. Using leaves is the natural way to reintroduce organic matter back into the soil, but many people tend to remove this valuable resource from their gardens.

Leaves are a great choice for composting, but tend to have a C:N above the optimal range so it will definitely help to mix in nitrogen-rich materials. They also have a tendency to get matted down when wet which will impede the air flow and slow down the composting process. To increase surface area for microbial colonization, chop or shred leaves and bulky materials (in a ratio of 2:1, leaves:green waste) with a chipper, garden shears or your lawn mower. Garden waste from diseased plants should be composted separately or sent to the landfill.

Yard waste in the fall can overwhelm the capacity of your composter. If you have great volumes of leaves, you can easily contain a leaf pile with a temporary holding bin made of poultry wire or hardware cloth. Keep the leaf pile handy to your composter if you have winter access to it. During the deep snows of winter, you can store kitchen scraps in an unheated garage or shed in a closed plastic tub and wait until spring to layer it with leaves and other saved materials.

While the composting process slows down, the freeze/thaw activity that is typical of this season actually helps break down the cellular structure of the materials. As winter starts, you may want to insulate your compost pile with a layer of leaves or straw around the sides and on top to hold heat inside and keep the pile active for a longer period of time. Avoid aerating your pile once the weather is very cold in late fall. Turning or aerating at this time will allow heat to escape, slowing down the process more quickly than necessary.

Occasionally, a compost pile's performance is less than optimal. The composting process can take from two months to two years, depending on the materials used, the effort involved, and of course the climate. Compost is ready to use when it looks dark and crumbly and none of the original ingredients are visible. A simple way to test if compost is finished is to seal a small sample in a plastic bag for 1 or 2 days. If no strong odours are released when you open the bag, the compost is done.

### Be Bear Aware!

*In the fall, bury your fruit and other tasty scraps in a covered compost pile, or keep these attractants out of your compost altogether.*

### COMPOST TROUBLESHOOTING

<i>If your pile is:</i>	<i>Do this:</i>
too wet	turn, add dry materials, and cover
too dry	turn, add water, and mix thoroughly
too warm	turn and add green material
emitting strong odors	turn the pile and add brown materials
not heating up	if the pile is damp and sweet smelling but not heating, it may need nitrogen. Add grass clippings, table scraps or a small amount of organic fertilizer.
attracting pests	make sure you have not put meat, dairy, or fats into your compost bin. Keep the pile covered, well aerated, and turn food scraps into the pile.

## Resources

- *composting*: Vancouver Compost Hotline 1-604-736-2250, Compost Council of Canada: [www.compost.org](http://www.compost.org)
- *seed saving*: International Seed Saving Institute: [http://www.seedsave.org/issi/issi\\_904.html](http://www.seedsave.org/issi/issi_904.html)  
Seeds of Diversity Canada: <http://www.seeds.ca>
- *winter-hardy seeds*: <http://www.westcoastseeds.com>
- *hoophouses*: <http://westsidegardener.com/howto/hoophouse.html>



**Fernie Community Eco Garden**  
**Workshop Series 2008 - Keeping Food Real**

For more information:  
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# Organic Gardening 3

In Organic Gardening 1 and 2 we discussed organic gardening theories, garden planning, composting, and methods covering many aspects of garden care. Now that we're at the end of our growing season we will look at specific tasks which can be carried out late into the fall and early in the spring which will lead to continuing good health and ever-increasing productivity in our gardens over the coming years.

## extending the season

In our climate it really is possible to mature long-season vegetables and have your own salad greens to eat for more than two months of the year! By using a variety of techniques with care and attention you can greatly increase your garden's yield.

**floating row covers:** Floating row covers are a lightweight, almost transparent, spun fiber material that can be spread like a blanket over entire raised beds or along rows of growing plants. Because the floating row covers are so lightweight they can be draped over the plants, even young seedlings, without causing damage. The row covers actually "float" over the vegetation. Edges of the fabric are secured with rocks, soil, or earth staples to keep it from flying away. Use a fine spray to water right through the row covers without removing them. When used in early spring and during the fall season, row covers will provide a few degrees of frost protection by insulating and trapping the warmer air rising up from the ground. Once the snow begins to fall, though, your garden will need protection that doesn't touch the plants.

**cold frames:** A cold frame is a protected plant bed. It has no artificial heat added. The temperature difference between the inside and outside of the frame is generally not more than 5 to 10 degrees. A mat or blanket may be placed over the frame on cold nights to conserve heat, but this increases temperature by only a few degrees. There are times, however, when a few degrees can be very important.

A simple portable wood frame covered with greenhouse plastic can be placed over a raised bed to help seedlings in the spring or protect slow-maturing vegetables such as tomato, pepper or squash from early frosts in September.

Stand-alone cold frames for containers and seedlings should have a southern exposure to receive the maximum amount of sunlight. It is helpful to use a north or northwest windbreak. This may be provided by a building, straw bales, a tight board fence or evergreen hedge.

**hoop houses:** An unheated hoophouse made with PVC pipe and plastic sheeting can be a useful addition to your spring and fall garden. It can raise daytime temperatures 5-10 degrees (and often much more), and keeps frosts and heavy dew off the leaves. This can extend your warm-season gardening up to a month or more at both ends. The hoophouse is constructed over the garden or raised bed with the ribs anchored in the ground or attached to the raised bed frame. It can be low with limited access, or large enough to work inside. During the summer the plastic can be rolled up the sides or removed.

**greenhouses:** A step beyond the hoophouse, a greenhouse is a permanent structure built to withstand cycles of the seasons for years. In our climate, investing in a heated greenhouse will extend your growing season farther than the above methods. The greenhouse itself, though, requires care and attention almost year-round to remain sound and effective.

**winter-hardy seeds:** With the use of the above techniques for cold-season gardening, growing plants particularly adapted to shorter daylengths and colder temperatures will increase your chances of success. Varietal choice is critical to successful winter cropping - there exists, for example, a huge difference in the ability of different varieties to photosynthesize at less than optimal conditions. Some varieties of spinach, for example, are developed for fall planting to achieve early spring growth. Many smaller seed companies are reviving and re-developing winter-hardy varieties. By saving seeds from plants in your own garden which seem to do well in cold conditions you can preserve these traits in future plantings.

**indoor growing:** Starting seeds early indoors under grow lights is a common method in the north for extending the growing season. Properly cared for, plants such as tomatoes benefit from an early start and make it possible for you to enjoy sun-ripened fruit during the summer months. Care must be taken, though, to give the plants adequate light, water and nourishment indoors lest they become so stressed they don't survive transplanting outdoors. Carefully moving seedlings in stages from indoors, to greenhouses and cold frames, to covered rows, and finally to the open air can result in a successful and bountiful harvest of our favorite long-season vegetables.

*If you want to be happy for a lifetime, plant a garden.*  
- Chinese proverb

## saving seeds

As the growing season draws to a close, you will find many of your garden plants are developing and maturing seeds. Being able to collect your seeds, storing them to plant for the next growing season and sharing them with friends is one of the most fulfilling aspects of gardening. Seed saving can elevate your gardening experience to a sustainable level whilst promoting genetic diversity and security in our food system.

A century ago, millions of seed-saving gardeners and farmers kept our plant varieties alive by saving the seeds of their favorite plants. This has been a normal part of traditional agricultural practice for 10,000 years. In 1900, our food was provided by as many as 1,500 different plants, plus thousands of different varieties. Today over 90% of the world's food is provided by only 30 different plants. Growers have become dependent on large seed companies, which for many years have been paring down the variety of plant seed available and promoting development of hybrid stock.

On the local level, we can do our own part by selecting and sharing seed from vegetable varieties that perform well in our growing conditions. Allowing vegetable plants to mature seed may make the garden look untidy, but saving seed produced from our own food plants, and teaching these skills to our children is a vital lesson to learn in our changing world.

### tips on saving your own seeds

- It's best to collect seed from 4 or 5 plants of each variety
- Save seeds from open pollinated varieties. Seeds from hybrids may not perform well when saved and grown – they may not turn out true to the parent.
- Many plants can cross-pollinate within species or related species. There are many methods to prevent this from happening to the plants you're growing for seed to preserve specific characteristics. Refer to a seed-saving manual or online sources for directions.
- Seed pods of annual vegetables such as peas, beans and radishes are easy to collect and can be a fun activity to share with children. Allow a few pods on each plant to mature. When dry, remove seeds from pods and store.
- Plants which develop small seeds from their flower heads, such as lettuce and many of the herbs, need close attention. You'll want to harvest them when the stalks are dry but before the wind disperses the seed.
- Some plants, such as kale and carrots, will put up flower stalks in their second year. Leave a few plants in the ground over winter, protect with mulch, and allow them to flower the following year.
- Blossom fruits, such as tomatoes, cucumbers and squashes, develop their seeds inside the part that we eat. One of the easiest seeds to save are tomato. Allow the tomatoes you've selected for seed to fully ripen. Cut open and scoop out seeds. If you're saving only a small quantity you can gently rub the seed through a sieve to break the protective gelatinous layer around the seed. Rinse and dry seeds before storing. For larger quantities, place seeds in a glass bowl, add a little water and keep at room temperature until they begin to ferment. Do not allow to dry out. After about a week the fermentation will have broken down the gelatinous layer. You can then rinse and dry the seeds on a plate.
- Squash to be saved for seed should be kept on the plant until totally mature and the skin of summer squash is hard. In our short growing season it's challenging to grow squash to maturity. If the squash isn't fully mature by the first frost, harvest and keep in a cool, dry place until fall. When it seems hollow inside, cut open and scoop out the seeds.

### drying and storing seeds

- Winnow small seeds to remove chaff by pouring from one container to another in a light breeze.
- Spread seeds on a screen or plate to dry. Never dry seeds in an oven or in the sun – they will die.
- Package small seeds in paper envelopes and store in glass jars to keep out moisture.
- Remember to label all your seed packages!
- Store seeds in a dry, dark, cool place.

Seeds of some plant varieties last for many years, but others only remain viable for a year or two. Try to plant out your saved seeds the following year to have healthy, vigorous plants. Test-germinate for viability in the spring by placing about 10 seeds of each variety inside a folded moistened paper towel. Keep from drying out by wetting every day, or place in an open plastic bag. Depending on variety, seeds will germinate in 2-14 days. Some seeds need a period of freezing before they will germinate. For detailed instructions on saving seeds visit the Seed Saving Institute's website.

## readying your garden for winter

There are lots of things you'd rather do in the fall than clean up the garden and get it ready for winter. However, doing these tasks during the beautiful fall days ensures a happy and healthy start to the growing season next year.

**Watering:** Remember to keep watering your plants and shrubs until the ground freezes. Just because there isn't visible growth going on doesn't mean your plants don't need any assistance. Evergreens need a good store of moisture going into winter because they continue to transpire through the cold months.

**Transplanting:** In some climates fall is a good time to transplant trees, shrubs and perennials, but not here in the Elk Valley! Our short fall and long winter don't provide time for transplants to recover. It's best to wait until spring to do your transplanting. Fall, however, is a good time to plant spring-flowering bulbs and garlic before the ground freezes hard.

**Weeding:** Do one last weeding and discard any weeds that have seeds on them in the garbage instead of the compost. Weed seeds can survive composting and end up sprouting in your garden later.

**Perennial cleanup and care:** Some gardeners like to leave seed heads and dried foliage for winter interest and to feed birds. Others prefer to leave neat beds ready for a show of spring-flowering bulbs. A good compromise is to remove material that frost turns to mush and any that is diseased. Prune perennial flowers and herbs to 4 to 5 inches from soil surface. Wait until spring to cut back your roses and prune other woody perennials.

Protect young trees with plastic or hardware cloth tree guards around the slender trunks to keep gnawers such as rabbits and mice from injuring them. Make sure the tree guards go high enough, over the snow line.

**Vegetable garden cleanup:** By completing a few clean-up chores now you can head off some disease and insect problems and enhance soil quality. Removing diseased foliage and spoiled vegetables or fruit will prevent diseases from surviving over the winter on plant residue and infecting next year's crops. Even composting won't kill some diseases, so consider starting a separate "dirty" compost pile.

Insect pests can also survive over the winter under plant residue, so even if the residue is healthy, it's best to compost it or chop it up and lightly work into the soil surface. That way the residue can start breaking down over the winter, adding organic matter to the soil. Plants like broccoli can be cut at soil surface, leaving root systems to hold the soil together. It's best not to till the soil deeply in the fall.

**Planting cover crops:** A good solution for protecting the soil surface from wind and water erosion is planting a cover crop such as annual ryegrass. Seedlings will emerge about a week after planting and quickly form dense roots that help store soil nutrients over the winter. The roots also help break up surface compaction, and provide a habitat for beneficial soil organisms including earthworms.

A cover crop can also suppress weeds that become established over the winter or early spring. Even if you choose a cover crop that is killed by winter weather, the plants will continue to protect the soil surface. In the spring, the cover crop can be turned under, adding additional organic matter, or "green manure", to the soil.

**Mulching:** It's best to wait awhile before mulching perennials and strawberries. Winter mulches are suggested to help protect perennial flower plantings and strawberry beds from alternating freezing and thawing cycles over the winter. Wait until November so the plants have gone dormant and the soil has frozen to apply the mulches. Straw or evergreen boughs make good winter mulches. Dark leaf mold will help to warm up the soil faster in the spring.

**Planning ahead:** Fall is a good time to add lime, compost, and manure to garden soils. Spread your finished or nearly finished compost onto the garden. Screen the compost and return partially decomposed pieces to new material in the bin. In the fall you can collect soil samples and send them in for analysis. Having results early can coincide with another good fall project: planning next year's garden beds.

To give next year's plantings a healthy head start, construct your new beds in the fall with sheet mulching techniques, or lasagna gardening. Alternating layers of topsoil, compost, leaves and other shredded brown material, manure, and cardboard or newspaper into your new bed will create an environment rich in nutrients ready for spring planting.

As you wind up the growing season you may want to bring your garden maps up to date in preparation for planning next year's garden layout. With this information, you'll be prepared when it's time to order seeds in the new year.

