West Coast Seeds

Gardening Basics

Principles of Organic Gardening

Organic growers utilize existing natural phenomena in the following ways:

COMPANION PLANTING

Planting certain species of plants side by side can produce numerous beneficial results. For instance, some plants attract predatory insects which will help to control populations of pest insects. Some plants grow so rapidly they can be used to suppress weeds. Some plants produce chemicals that repel specific pests. The subject of companion planting is complex, but is covered in detail on our website.

CROP ROTATION

This practice prevents the build-up of soil-borne diseases and pests, and optimizes the use of soil nutrients. It follows the natural tendency of soil to become more acidic over time, and provides guidance on what to plant in a particular spot based on the crop that had grown there previously. To optimize space, practice a four year rotation. If the soil is acidic, add lime at least 3 weeks before planting Brassicas, which thrive in freshly limed soil. In year two, follow these with legumes, onions, beans, peas and garlic. In year three, follow with potatoes, sweet corn, tomatoes, peppers, squash and then in year four, follow with root crops. Then back to Brassicas and start the cycle again.

COVER CROPS

This term refers to a type of companion planting in which certain types of fast-growing plants are grown, either before or after the main season crop. Cover crops improve soil fertility and structure. They add organic matter to the soil when they are tilled under, or they can be left on the surface of the soil to act as a mulch. This ancient planting method can be used to fix depleted, compacted, and sandy soil, and it works in the home garden as well.

COMPOSTING

Composting is a way to make use of all the garden or farm by-products, from dead leaves to animal manure to wood ash. It breaks these organic products down to a level that enriches soil biology and feeds plants naturally.

SOIL

All of these principles pay special attention to the health of the soil. The earthworms, microbes, fungi, and bacteria that live in healthy soil break down organic matter, releasing nutrients to plants. This makes the plants stronger and healthier, with better resistance to pests and diseases. Soil in an organic garden should be as healthy and fertile at the end of the season as it was at the beginning, and that means better crops in the next season.

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Gardening Basics

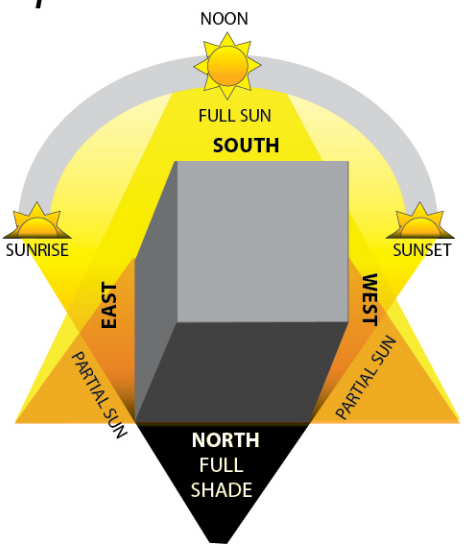
Understand the needs of each plant in terms of light, timing, and the amount of space it requires for optimal health.

LIGHT

All plants need at least some direct sunlight in order to thrive. Plants that produce roots (like carrots and beets) and fruits (like tomatoes and cucumbers) need 6 to 8 hours of direct sunshine every day. They simply won't flourish in shady conditions. The general rule is that leafy greens will grow in partial sun.

Some balconies only get a bit of slanting sunshine in the morning and evening, and in this case leafy greens and kitchen herbs are the best choices. They are ideal for year-round salad growing because leafy salad greens, from arugula to spinach, would "bolt" or go to seed (which makes their leaves tough and unpalatable) in sunnier locations.

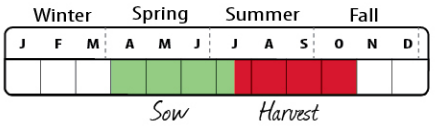
No plant does well in complete shade. When planted in containers, plants can be moved around to make the most of the available sunshine.



TIMING

From time of germination, seeds can take a few weeks to several months to mature, making timing of planting very important. Some seeds need to be started indoors early in the year, while others do just fine from sowing direct in the ground in spring or summer.

CARROTS PLANTING CHART

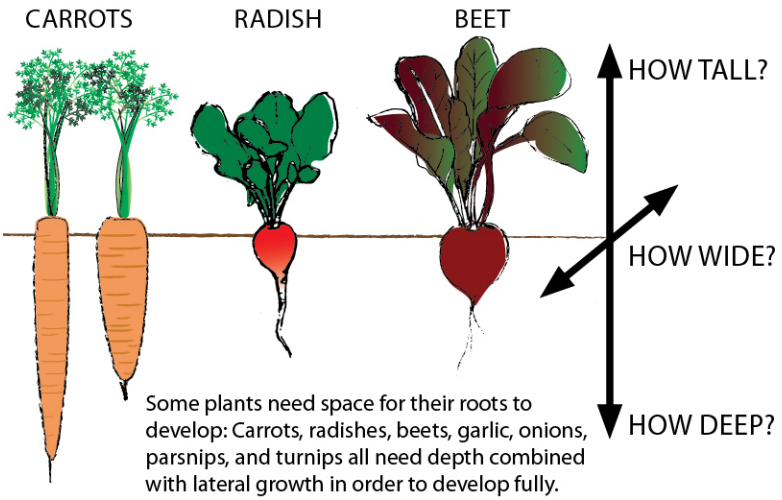


Harvest: This is an approximate time window based on the sowing stage. Given that nearly every balcony and rooftop has its own microclimate, results may vary.

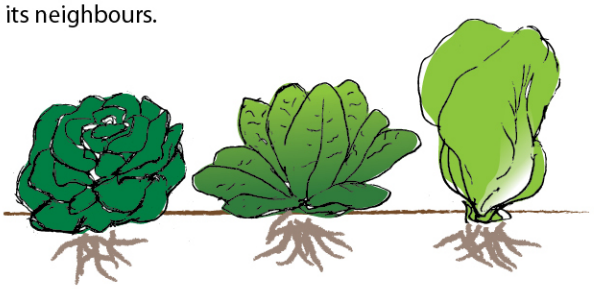
SPACE

Space is a very important consideration. Overcrowding plants will compete for available light, nutrients, and water. Seedlings may look small in the spring, but by August they may become huge. Make the mature size of each crop part of the garden plan.

Each seed that is sown is going to need space above ground to grow stems and leaves, and below ground to grow a root system. They'll need enough room for growth so that each plant doesn't crowd out its neighbours.



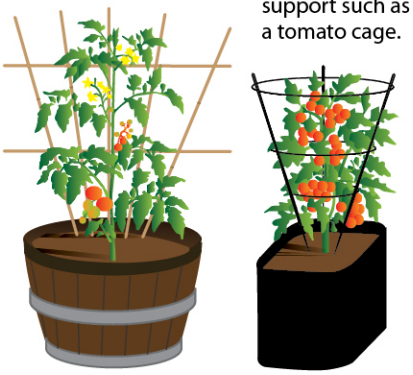
Some plants need space for their roots to develop: Carrots, radishes, beets, garlic, onions, parsnips, and turnips all need depth combined with lateral growth in order to develop fully.



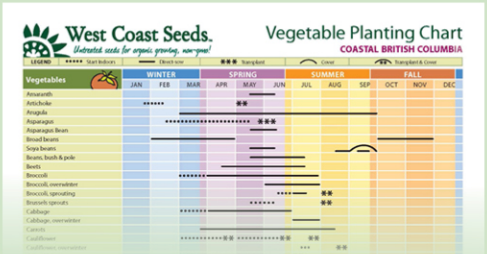
Lettuce has a relatively small root system that grows shallowly, near the surface of the soil.

Indeterminate (vine) tomatoes require a Trellis and can grow 8'-10' high.

Determinate (bush) tomatoes benefit from support such as a tomato cage.



Check out the planting charts on our website. They provide good guidance on when to plant different crops in different regions.

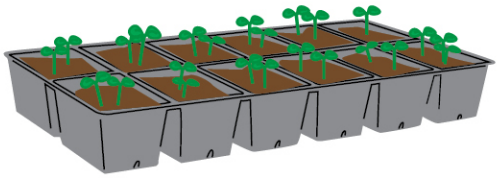


www.westcoastseeds.com/garden-resources/west-coast-seeds-planting-charts/

STORING SEEDS

Most seeds will stay viable for 3 years or more. The best way to maintain a high viability is to keep them cool and dry, away from any obvious heat sources, and away from sunlight. Keep them in a shoebox in a bedroom cupboard, for instance. We do not recommend refrigerating seeds, as this can cause problems related to fluctuations in humidity as well as condensation on the seeds. Freezing may kill seeds, and is also not recommended. Keep seeds reasonably cool, and as dry as possible, for the best results.

STARTING SEEDS INDOORS & TRANSPLANTING



Some seeds, like peppers and tomatoes, require a head start indoors, before the outside temperature warms enough in spring. Use sterilized seed starting soil, which is specially designed for this purpose, and will be free from mould and fungal spores.

Specialized seed starting trays are available to help young seedlings grow in their own individual cells. This will prevent their roots from becoming tangled, and it will help keep seedlings small and tidy prior to transplanting outdoors.

Soil temperature directly impacts how quickly seeds germinate and how quickly seedlings grow. For some seeds, room temperature is best (16-24°C/60-75°F)—for others, it is warmer still (24-32°C/76-90°F). Control the temperature of the soil by using seedling heat mats, or by placing seed trays onto a reliably warm surface. Seed trays provided with bottom heat cause seeds to sprout more quickly, and they generally germinate all at once.

The same seeds may sprout in cooler soil, but it may take longer, and they may germinate over a period of weeks instead of days.

There are special cases when seeds need soil temperature to be precise. Untreated corn and bean seeds planted in cold, wet soils will just rot, not grow. They need the warm soil of late spring to germinate well. Follow the instructions for each specific type of seed.

Moisture softens the hard outer shell of seeds. Some seeds don't need much water to germinate, but others absorb a large amount of water relative to their dry weight. Once water has been absorbed, enzymes inside the seed are activated, which enable the plant embryo to use its stored food supply. Seeds contain just enough of that stored food to produce a root, and unfurl the first leaf or leaf pair. Without water, seeds cannot germinate. With too much water, they may drown, or simply rot.

If not enough light is provided, seedlings will grow "leggy" as their stems stretch upward in search of more light. In order to keep seedlings stout and strong, it's important to add supplemental light by means of high-output, full-spectrum fluorescent tubes, LED tubes, or other grow lights. These don't give off much heat, and they use relatively little electricity. Grow lights are normally kept around 10cm (4") from the top of the seedlings for 12 to 18 hours every day. In most situations, it's hard to over-apply light.

THINNING

Typically, after seeds are direct sown in the garden, a process called thinning is required. This is removing enough of the seedlings so the remaining ones have space to grow to maturity. Thinned seedlings are edible, and can occasionally be transplanted.

OXYGEN

Oxygen needs to be present in the tiny spaces between soil particles. If the soil is too wet, or if the seed is planted too deeply, it will be oxygen-starved and won't germinate. In very wet conditions, the seed will just rot. This is why seed starting mixes are designed to retain moisture, but drain off the excess. Be sure to use starter mixes and potting mixes that include particulates like perlite, vermiculite, or gypsum. These particles will make room for some air pockets in the soil, as well as providing drainage.

POTTING UP

As seedlings grow above the soil, their roots grow into the soil. If seedlings are going to be indoors for a long time, they may need to be "potted up" by transplanting into larger pots to accommodate their increasing size. Choose a sterilized potting soil for this purpose.

HARDENING OFF

When it's time for plants to go outside in the spring, make the process gradual in order to avoid transplant shock. This is called "hardening off." Put them outdoors for a few hours and then bring them back inside. The next day, leave them out all day, but bring them in overnight. Then let them stay out all night. On the fourth day, transplant them into their permanent growing spot.

SOIL FOR CONTAINERS

Soil for growing vegetables in containers needs to be quite fertile. Many store-bought potting soils will suffice, but it's a good idea to mix some balanced organic fertilizer into the soil at planting time, and provide a liquid fish or kelp based fertilizer at regular intervals throughout the season – every three to four weeks.

Check each seed packet for advice on spacing in the row, and how far apart rows should be in order to work between them when weeding. Find guidelines for planting dates on the back of the seed packet. Please check our website for a planting chart specific to your growing region or zone.

HOW TO WATER:

Water the soil and not the leaves. In the sun wet leaves can develop slight burn marks and wet leaves overnight are easy targets for slugs and snails.
Water slowly and make multiple passes to prevent run-off, and to let water seep down to the roots.
Check the progress of the water as it goes through and runs out the bottom of the container. Use your finger or spade and push into the soil. Feel or look at the soil at 2-6" deep to see if soil is dry and needs more water. Allow containers to drain into saucers or trays, but empty them so the plants are not sitting in water.
Watch the leaves on plants for signs of lack of water like limp, curled, or brown leaves or leaves that have fallen off.

CHOOSING A CONTAINER:

1. They need to hold the soil in place. Use thick plastic or burlap bags, tires, terracotta pots, or anything that will provide a stable receptacle for soil.

2. They need drainage. Plants don't want to sit in water. Drainage holes at the bottom allow excess water to drain out, and oxygen to get in.

3. They need to be at least 10cm (4") deep. Deeper than this is even better – in fact the more room you can offer the plants, the larger their root systems will grow, so they'll be able to take up more nutrients.

Remember that the soil in containers is going to be warmer than the soil in the ground. While this benefits heat-loving plants like peppers, eggplants, and tomatoes, it also means that evaporation of water out of the soil will become an issue in hot weather. On a sunny balcony in mid-summer, pots might need water twice a day to keep plants healthy.

One final piece of advice is to avoid over crowding plants grown in containers. If sowing mesclun seeds, use only a scant pinch of seeds. Over crowded plants will not have access to the light and nutrients they need for steady growth, so they'll end up leggy or stunted. Whenever growing the plant on to full maturity (like with fruiting plants or for full sized leafy heads), grow one plant per pot. For these plants, 5 gallons is a standard minimum pot size – otherwise look for containers that are as wide as they are deep. These will probably be so heavy that they cannot be moved once they are planted.

USEFUL SEED TERMINOLOGY

OPEN POLLINATED (OP): These seeds are produced by crossing the pollen between two parents of the same variety. They are the top choice for saving seeds from year to year.

HYBRID (F1): When pollen from one plant variety is used to fertilize the flowers of a different variety of the same species, the resulting seed will produce a hybrid. The resulting plant (known as F1 hybrid) will have characteristics from both of its parent varieties. Often these cross-bred plants will have higher yields, a shorter growing season, cold-hardiness, resistance to disease, or other desirable traits. The down side is that hybrid plant varieties produce seeds that, if grown out, tend to slide back to one or other of their parents' genetics. This makes them less useful for seed saving.

DAYS TO MATURITY: This information offers an estimate on the actual days it takes for a plant to mature. The term is not a literal statement, but it offers growers some general guidance on planting time, and the relative speed with which different varieties mature. It can refer to the date of direct sowing or to the transplant date, depending on how the crop is typically started.

CERTIFIED ORGANIC: Organic agriculture, which is governed by strict government standards, requires that products bearing the organic label are produced without the use of toxic and persistent pesticides and synthetic nitrogen fertilizers, antibiotics, synthetic hormones, genetic engineering or other excluded practices, sewage sludge, or irradiation. We embrace the use of natural systems like composting, crop rotation, cover cropping, and companion planting in our gardens. We feed the soil with natural minerals and with organic matter — material that is derived from dead plant or animal matter.

UNTREATED: As a certified handler of organic seeds, West Coast Seeds carries only seeds that have not been treated with fungicide, pesticide, or other chemicals.

NON-GMO/GEO: Although genetically modified seeds are almost unheard of outside of large scale farming, we make every effort to ensure our seeds are Non-GMO.