

Fall & Winter Gardening Workshop
Squamish CAN Grow Gardens
Squamish Climate Action Network

1. What to plant now

Arugula: absolutely loves cool soil and cold weather. Sow every two weeks until late September (see note on succession gardening below). Plant arugula once night temperatures are 15C or lower.

Carrots: plant carrots in the next two weeks (last two weeks of August) and ensure that you keep the soil wet until germination. Carrots can also be over winterized!

Kale: the ultimate winter green and easy to grow! Many varieties to choose from, some thrive better in the winter time.

Lettuce: there are winter hardy varieties (such as winter density WCS) that can be planted now, and in two weeks romaine can be planted!

Mesclun Mix: sow every two weeks until October

Mustard Family: fast growers and do not require warm soil to germinate. Another cool soil lover.

Pac Choi: loves cool weather as well and is fast growing. And so yummy!

Radish: plant short rows every couple weeks as they mature quickly. Starburst watermelon radish (seeds available through West Coast Seeds) is a winter vegetable ONLY and can be planted in October, as it requires much cooler weather.

Spinach: now is the time to plant spinach! Harvest leaves and over winter the roots so that next spring you will have an abundant harvest much earlier than you'd expect.

Garlic: best planted in September for early summer harvest next year. Can be planted until first week of December.

***Succession Gardening:** planting smaller amounts over time to get a continual harvest throughout the season

2. Garden Cleanup-what to leave, what to pull

- **Option 1- Conventional:** When plants have been harvested or have died back, remove plant material and compost it if it is not diseased. Pull weeds. Till soil if needed to apply lime or other amendments. Seed cover crop or apply mulch.
- **Option 2- No dig/chop & drop:** Chop off plants and weeds at soil level. Leave roots in ground. Chop up the plants that were cut and use them as as part of your mulch, or compost them. Apply your choice of mulch, or seed a cover crop. (Careful not to use diseased plant material as mulch, and some extra-spready weeds like bindweed can go in the garbage instead.) With the no-dig method, cover crop can be chopped and dropped, mulched over, and little holes dug to plant seeds or seedlings in spring. Cover crop can also be chopped at soil level, and worked into the top few inches of soil (not strictly no-dig).
- **Biennial plants** you can leave for winter harvest and continued growth next year, i.e. kale
- **Crops to leave in ground for winter harvest:** arugula, kale, brussel sprouts, cabbage, cauliflower, beets, carrots, corn salad, broccoli, kohlrabi, leeks, mustards, parsley, peas, radish, spinach, swiss chard, turnips. Some crops prefer to be covered in winter. See cold frames below.
- Remember: plants grow much slower when there is less light- plant extra plants!

3a. Cover crops (aka living mulch aka green manure)

What is a cover crop?

- A cover crop is a crop grown for the protection and enrichment of soil
- For this time of year, **BUCKWHEAT & OATS** are great! These can be tilled under when the frost comes, in this region it is around November 2.
- Are as effective as animal manure for producing humus (which increases soil structure and fertility)

Why cover crops?

- **Suppress weeds**
- **Builds productive soil**
- **Help control pests and diseases**
- **Reduce soil loss from water erosion**
- **Maintain soil surface infiltration so soil does not compact**
- **Improves soil structure**
- **Feed and provide shelter for birds, wildlife, and beneficial insects**

- **Fix nitrogen in soil**

How do I plant cover crops?

- Gently work soil with a small hand rake, toss in the seeds, and rake them in. It's that easy!
- Care is fairly low maintenance: water and most importantly be sure to manage your cover crop by cutting it back BEFORE the top growth gets out of control. You can do this by cutting it back, or you can till it right into your soil. With buckwheat and oats this will need to be done before the frost comes.

What kind of cover crops are there?

Buckwheat: Hardy annual that is a very fast growing plant! Can reach 1 meter tall in less than a month. Its white flowers attracts pollinating insects and can smother out other competing weeds. Within ten days of blooming (or anytime before that) you can cut and till under to improve organic matter and soil structure.

Grasses and Grains: Oats, barley, wheat and rye are all cereal grasses that produce dense root masses and are very good for protecting the soil over the winter. Even if they die back under frost, the roots will remain intact to prevent soil erosion! Some varieties are hardier than others, such as fall rye. These plants will use a lot of soil nitrogen which will be integrated back into the soil as they break down.

Legumes: (crimson clover, hairy vetch, alfalfa and field peas) Nitrogen is one of the hardest nutrients to maintain in soil, and one way for an organic gardener to get nitrogen into the soil is through the use of legumes. Legumes have co-evolved with a bacteria known as Rhizobia to form a symbiotic relationship. The roots of legumes have nodules that contain the bacteria that converts nitrogen in the air so it is available for plants, and the plant gives carbs, proteins and oxygen to the Rhizobia. Planting these cover crops will provide your vegetable gardens with much needed nitrogen.

When do I plant cover crops? What do I plant? Depends on many things!

- Time of year - refer to cover crop planting chart
- What you are growing & space

What you are growing and space: Succession cropping is an easy way to combine cover crops with your garden year round. For example, after spring crops of lettuce, radish, and spinach, you can plant a fast-growing cover crop like buckwheat. In our climate you can do this and still have time to plant frost-tolerant vegetables.

Interplanting cover crops with vegetables is possible but is certainly a bit trickier. A good rule of thumb is to sow the cover crop seed into the vegetable bed one-third of the way through a vegetable's crop growing cycle. The key to this method also is to provide ample water and

nutrients to both cover crop and vegetable crop and to control the growth of the cover crop so it doesn't take over.

You can also plant cover crops in areas where you are NOT growing vegetables over the winter season in order to build soil and keep out weeds and pests.

3b. Mulching

Why mulch?

- **Water retention**
- **Weed suppression**
- **Regulates temperature**
- **Adds nutrients and organic matter to soil, provides food for worms etc.**
- **Prevents soil erosion and compaction from heavy rains**
- **It's more work to apply in the fall than a cover crop, but easier to deal with in the spring. Mulch materials are usually free (i.e. leaves), while cover crop seeds cost money.**

What likes mulch?

- Perennial shrubs: roses, rhododendrons, azaleas.
- Annual flowers
- Veggie gardens
- Garlic

What mulch to use?

- Straw (not hay!), shredded leaves (can chop up by lawn mowing over them-don't use walnut or cedar), nut hulls, aged sawdust or woodchips (can be acidic), aged manure or compost, tree branches (evergreen-acidic, or deciduous, chipped or not), pine needles (good for acid-loving plants), newspaper, grass clippings, and seaweed (don't harvest in spring to help herring eggs). Comfrey, stinging nettle, dock, and burdock leaves are full of nutrients-can add as a base layer right on top of soil.
- Fibrous and fresh material such as straw, shredded leaves and bark chips are best applied in the fall vs. spring, so they don't steal nitrogen while they decompose from growing plants.

When to apply?

Flowers and Veggies: When plants have been harvested (veggies) or plants have died back (flowers). Before the first frost so beneficial critters can continue their work a bit longer.

Trees and shrubs: After a few hard frosts.

Use 2-3 inches for a finer mulch like sawdust, 5-6 inches or more for a coarser mulch like wood chips or straw.

What to do in the spring?

In the spring, your mulch should have rotted down substantially depending on the type used. You can till in the remaining mulch, or simply part the mulch to plant seeds or starts. If you're hooked on mulching, you can apply more around your plants for continued benefits, just keep in mind that decayed material is better to use during the growing season to avoid robbing your plants of nutrients while mulch is rotting.

Dealing with Pests

Using rough, undecayed mulch (i.e. fresh straw and leaves, fresh manure) can provide a food source for slugs and snails, and leave air pockets for rodents to live in. If these pests are an issue in your garden, try using a finer, decayed form of mulch (i.e. leaf mold).

4. Extending the growing season

Many plants can keep growing throughout the winter when given some frost protection, or at least kept alive for continued harvests. Some methods include cold frames, low tunnels, or using row cover.

Cold frames

Cold frames are essentially mini greenhouses. They are usually a rectangular wooden frame with a hinged slanted glass lid. They require basic construction skills and wood and glass, which can be expensive or free to source. They tend to block more light depending on how they are built.

Low tunnels

A simpler and usually cheaper method is to bend pvc tubes over your bed, and nail them to the raised bed wood or push them into the soil. Cover the skeleton with clear **plastic polyethylene** (poly) or **heavyweight row cover**. Use rope to secure down the material so it doesn't blow away! Heavyweight row cover allows rain, air, and 70% sunlight through. It's good protection up to -5 degrees C. Poly does not allow rain or air in (make sure to allow for ventilation if over 4 degrees C!), but it allows sunlight in and keeps plants a bit warmer. Low tunnels are much easier to store and move around than cold frames! Can also remove poly and apply netting or fencing over hoops in summer to protect crops from birds.

Even simpler method: Heavyweight row cover can also be simply laid over your plants, with a few taller sticks sticking up to keep the cloth from weighing down plants. Be careful of wind.

Plants that like to be covered in winter

Beets, cilantro, lettuce, mesclun, mustard, radish, turnips. Most other crops also benefit from covering in some way.