

# COVER CROPS



Cover crops are plants grown primarily to improve and protect soil. Though they can be grown any time of year, they are most valuable at the end of a productive growing season. Fall-sown cover crops enrich and protect your soil in multiple ways. First, they preserve soil structure against the physical impact of months of rain. They keep valuable nutrients from leaching away in the winter rains, retaining them near the surface of the soil where next season's crops will be able to utilize them. The crop roots can open up and loosen hard soil and they help to keep weeds from claiming open ground. Having the ground covered helps to moderate soil temperatures preventing drying out and reduces damage from freezing. This can help keep soil biota alive and well. Cover crops also enrich the soil by adding the vital plant nutrient nitrogen as well as organic matter which creates habitat and sustenance for the biota.

This last fact makes cover cropping a vital part of restoring fertility in crop rotation. Since nutrients leave the soil ecosystem when you harvest your crops, soil can become depleted of those nutrients. By cover cropping, you are letting the soil rest and be replenished for next season's vegetables.

## Winter Cover Crops

Sometimes referred to as "green manures," winter cover crops fall into two main categories: annual grasses and legumes.

Since grasses quickly produce dense growth, they are able to provide a protective cover over the soil and out-compete weeds. This also means that when it is chopped in and breaks down, there is a substantial amount of organic matter added to the soil. Their roots tend to form fibrous mats, providing the added benefit of breaking up clay soil or binding together sandy soils.

**Examples of common grasses for cover cropping include ryegrass (*Lolium* spp), barley (*Hordeum vulgare*), oats (*Avena sativa*), and winter wheat (*Triticum aestivum*).**

Legumes are a family of plants known for their symbiotic relationship with bacteria that are able to transform otherwise inaccessible atmospheric nitrogen into a form usable by plants. This amazing ability makes them extraordinarily useful in building soil nutrient levels. By leaving legume plant material in the soil to break down, this nitrogen is made available to your next generation of crop plants. In addition, they often have strong, deep roots that are able to break up compacted soils.

**Examples of common cover crops in the legume family are common vetch (*Vicia sativa*), Fava beans (*Vicia faba*), crimson clover (*Trifolium incarnatum*), and Austrian field peas (*Pisum arvense*).**

Usually a mix of these two main types of cover crops is optimal. The combination of legumes and grasses will add nitrogen, out-compete weeds, break up and loosen hard soils and add large amounts of biomass that will break down into humus.

Cover crops for winter are usually sown from September through October. You can broadcast sow an empty bed after harvest, or you can under sow - a technique where you lightly cultivate under and around your existing crop plants and sow cover crop seed while you are waiting to finish harvesting.

Your cover crop will germinate in the fall and grow slowly through the winter and build biomass into spring. When spring rolls around, your legumes will begin to flower. When about a third of your legumes are flowering, it is time to terminate your cover crop. The most common way to incorporate your cover crop in to the soil is to trim the plants down to a few inches above soil level, and then,

using a shovel, chop the plants into small pieces and turn the soil over. Covering most of the plant matter with soil will encourage speedy decomposition, which will allow you to plant sooner.

While this method is effective, it does result in soil disruption and some damage to the microbial life which is essential for soil health and fertility. A less impactful technique involves trimming the plants to soil level and using a fork to gently turn it over. You don't need to be detail oriented and cover every last blade of green, just get them turned so they will begin to decay. If you want to not disrupt the soil at all you can trim the tall tops, cutting all plant material into small pieces, and layer them on the soil surface as mulch. Additionally you can cover this with burlap to hasten the decomposition process. The drawbacks are that this takes longer, requires more work and is less practical for large spaces.

### Summer Cover Crops

Cover crops can also be sown during the warm season. Why would you want to grow plants during the warm season that you are not going to eat? The answer is crop rotation. If your garden bed has given you a few harvests without being rested, growing a cover crop can restock your soil with nutrients and organic matter, while potentially providing habitat and food for pollinators and resistance to the erosion that bare soil would experience. It will also prevent other weeds from growing in.

Though legumes are still good choices, the warmer weather brings a few more options for replenishing your soil's fertility. Cover crops at this time of year will also offer food and habitat for beneficial insects in your garden, including pollinators. Be sure to terminate these when about a third of the plants begin to flower to prevent them from setting seed or becoming too tough or woody to break down easily.

**Buckwheat (*Fagopyrum esculentum*)** is a great choice for sowing in the spring. Its quick growth allows it outcompete weeds at a time when weeds can be aggressive and difficult to manage. It is known for its ability to accumulate phosphorous.

**Phacelia (*Phacelia spp*)** will provide biomass that will turn into humus. It also accumulates calcium, which is returned to the soil when you cut it in.

**Mexican Marigold (*Tagetes minuta*)** does well in dry conditions and its large size will result in lots of organic matter.

All of these are excellent pollinator plants and will do double duty of feeding bees and butterflies and other beneficial insects during the summer.

### Buying Cover Crops

- Ask at your local nursery or garden center
- Walt's Organic Fertilizers in Interbay - Seattle
- Try online venues –
  - Peaceful Valley Farm Supply – they have a lot of different varieties and also great information to read up on cover cropping [www.groworganic.com](http://www.groworganic.com)
  - Green Cover Seed - [www.greencoverseed.com](http://www.greencoverseed.com)
  - Seed Companies like Territorial Seed, High Mowing, Johnny's, Outside Pride
- This is not an exhaustive list and asking for them at your local nursery will also help to bring them to your neighborhood!