

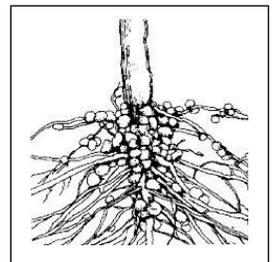
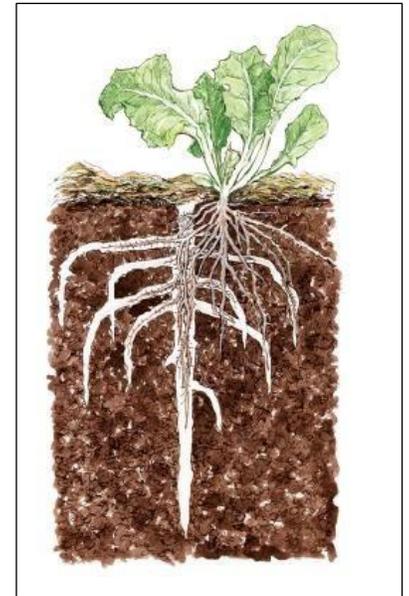
Cover Crops for your Winter Garden

West Seattle Nursery

Cover crops offer several benefits to your overwintering garden and those advantages are clear to see from your spring propagation to your fall harvest. They can not only improve your bottom line as the biomass accumulates, but will also reduce pollution, erosion, as well as reduce weed and insect pressure.

Cover crops are essential to a sustainable, organic garden.

- **Improve soil quality** Organic matter and the roots of growing cover crops stimulate microorganisms, improve soil structure, and digest organic matter so that nutrients can be used by plants.
- **Increase organic matter** Both roots and top growth contribute organic matter to the soil after they are tilled under, a combination of cover crops and compost is an excellent choice for building long term organic matter and providing sufficient seasonal nutrients to the garden. One excellent way to increase the biology of your soil system and to help break down organic matter faster, is to inoculate cover crop material with compost tea before tilling or adding it to your home compost.
- **Reduce soil erosion** Roots help to stabilize soil, preventing runoff to ensure that your rich soil stays put.
- **Supply nitrogen** Clover and legumes add nitrogen by fixing atmospheric nitrogen into plant material and storing it in special nodules along the root system. The plant will store this nitrogen until it is time to use it to produce fruit. Tilling the plants under the soil just as the plants are at a 30% flower is the perfect time to utilize the nitrogen from the plant nodules (That's just about Superbowl here in the PNW).
- **Increase water infiltration and reduce soil compaction** Cover Crops work the soil for you as the lengthy and steady root systems push through compacted soil providing swift irrigation in your garden beds.
- **Decrease run off** by holding onto soil and its nutrients through the heavy rains of the winter and early spring months.
- **Suppress weeds** by taking up the space that weeds would generally populate. Cover crops are sometimes referred to as "smother crops" for this reason. Some varieties of cover crop actually produce specific chemicals that suppress the germination of weed seeds.
- **Conserve soil moisture** Some winters can be quite drying as soil freezes and thaws through the cold months. Cover crops create a slight microclimate at the soil level to regulate moisture and reduce frost damage that can lead to a drying effect on healthy soil.
- **Reduce nitrate leaching** Leaching refers to the loss of soil available nutrients, which can be an issue as rain pulls minerals away from garden beds, transferring it to groundwater rather than your treasured garden soil.
- **Cut costs on fertilizer** By increasing the biology of your soil through soil building. Nutrients that are often supplemented by the use of "factory" produced fertilizers are naturally increased by utilizing soil building techniques like soil building with cover crops. Phosphorus and potassium becomes more available naturally as soil becomes less compacted, thereby reducing your need for typical NPK fertilizers.
- **Protects water quality** by using available soil nitrogen, preventing nitrogen runoff into the Puget Sound, reducing toxic algae bloom and oxygen leaching in salmon habitat.
- **Disease suppression** Cover crops add organic matter, which feed the microbes that can play important roles in the garden. The bacteria in your garden is much like the good bacteria in our own digestive tract, fighting disease and boosting the "immune system" of your soil.



Fine textured cover crops such as alfalfa, clover and fava will decompose at a much higher rate to release nitrogen at a high rate leaving a rich store of nitrogen for subsequent crops.

White Clover is a low growing perennial and is an excellent component in a green lawn but may not be appropriate for a vegetable bed.

Crimson Clover is a fast growing annual that will not produce via runners, so it makes an excellent choice for most beds, as it is easy to till under or can be used easily in your home compost. Another advantage of clover is the deep root system which can effectively cut through hard pan soil. Crimson clover does not perform well in overly acidic soils, however.

Fava's stalks make an excellent green manure and can withstand more waterlogged conditions than other cover crop. The large, tough stalks of fava do not lend well to tilling under and take longer to break down than other choices

Alfalfa is of the legume family and will retain the same nitrogen fixing qualities of its fava and clover cousins, but its soft tendrils will incorporate more easily as a tilled green manure.

Rye has an alleopathic effect on weeds. Rye actually exudes compounds that suppress the germination of weed seeds. Using a rye cover crop is an effective way to protect a new bed from new weed growth.

Kodiak Mustard Glucosinolates makes Kodiak mustard a unique cover crop. Glucosinolates suppress weed seeds and diseases, a term known as biofumigation. The cell walls of the mustard must be broken for the glucosinolates to unleash their biologically active chemicals. When these chemicals come in contact with water, they act as a fumigant. Chopping the mustard before incorporating it into the soil increases the speed of this natural chemical release. You must wait at least three weeks before planting in your biofumigated soil, if you don't wait, the glucosinolates that suppress the weeds and soil-borne diseases may also suppress your fruits and vegetables.

Cover Crop Methods:

Green Manure is a method that actually incorporates the green matter of your cover crops into the soil itself, creating an immediate biomass. This is a good method with the softer plants, but may prove more difficult with rye and fava. Like many crops, I have found that cover crops have their own holiday planting times to remind you of when to plant and when to reap. (**Indigenous People's Day for planting and Superbowl for reaping.**) Chop your cover crops off at the roots with a weed whacker or even your lawn mower, before you turn the mass under.

Cover crops can be lain on the soil beds to begin decomposition and cover your soil until you are ready to plant. At this point, you can either turn them under or incorporate into your compost heap.

Composting your cover crops is another great way to reap the benefits of the green mass for future use. Your compost heap requires green layers, and what better than nitrogen rich cover crop. Inoculating your green mass with a good compost tea (I like Malibu Compost tea for its high biology) is a good way to ensure a good population of beneficial micro-organisms in your compost heap.

If you have any further questions, please email me at jennnd@westseattlenursery.com