Choosing A Cover Crop

**Grain Covers**

Barley - Fast growing cover offers good weed suppression, deep soil effect, some insect and disease suppression, nutrient scavenging that includes N, P, and K. Flowers early, so needs to be worked early. May be less winter hardy than other grain cover crops.

Oat - Very quick cover for weed suppression, also gives some benefits in soil structure and nutrient scavenging. One of the easiest grains to work - can be fall planted (August) and let winter-kill, then tilled in spring; can also be spring sown and worked in just before seed set in late spring/early summer.

Rye - Rye grain - annual rye grass is different! Very good weed suppressor, and one of the best covers for breaking up heavy soils and improving tilth. Very good at scavenging N, P, and K. Can be planted late, but better nutrient scavenging when planted early. May inhibit crops - should be tilled in three weeks before planting to decrease allelopathy and nutrient tie-up. Can grow fast in spring, making it hard to work, but doesn't seed early.

Wheat - One of the most balanced grain covers, does a good job of weed, disease and insect suppression, scavenges N, P, and K reasonably well, improves soil workability. A bit slower to take off in the spring, it works in easier than rye. Work in two weeks before planting to decrease nitrogen robbing.

**Legume Covers**

Crimson clover doesn't runner like perennial clovers, and is easily controlled by tilling. A very balanced cover that both fixes and scavenges N and reduces erosive losses of P and K. Often the preferred cover where it can be used, but dislikes wet or acidic soils. Can be mechanically killed (hoed) and planted through for no-till. Can plant transplants immediately, but wait two weeks before seeding after killing or incorporating.

Fava - An impressively massive cover, can reach five feet before flowering in spring. Favas offer good biomass, good N fixing, and fair weed control. Must be seeded early, and not very winter hardy (about 10 °F), but will tolerate wetter and poorer soils than clover.

Field Pea - Austrian field peas provide very high levels of N fixing and biomass, but don't run deep roots to capture lost nutrients or break soil. Despite the volume of leaf and vine, they are rather succulent and work fairly easily. Let them mature in spring through full bloom to provide early food for bees and to maximize N yield, then incorporate. Tolerate cold and wet soils.

Vetch - Hairy vetch is an excellent source of fixed N, and though slow to start off in the fall it races ahead in the spring, rapidly smothering weeds. Vetch can help suppress insects, and of the legumes is the best scavenger of P. Because of its easy mechanical kill and short residue lifespan, it is an ideal cover for no-till transplanting, though a bit thick to seed through right away. A significant amount of vetch seed is "hard", and can remain ungerminated the first year to sprout as a "weed" in following seasons.

**Other Covers**

Mustard and Arugula - The best pest and disease suppressing covers, and the most easily worked. They also scavenge N, P, and K, and provide good weed suppression. They improve soil tilth, but only in the upper layers. Mustard can be planted in fall as a winter-killed crop tilled in spring, or can be spring planted and incorporated shallowly as a biofumigant. Arugula is an overwinter crop; mow before flower and incorporate shallow as biofumigant. Wait at least ten days after incorporation before planting, and do not follow with a brassica crop.

Buckwheat - The standard for growing season fallow or interim covers, Exceptionally fast growth smothers weeds, and fibrous roots scavenge P, K, and Calcium while leaving a nice textured soil. Does well on poor soils, and is an excellent first step in developing a new garden area. Mow and incorporate just at full bloom.
Mulches

Bark / Sawdust / Wood Chips - Decompose very slowly, and while they are breaking down tie up nitrogen. Good for path work, but don't overdo. Can use small amounts of aged or partially composted bark or sawdust as a fall mulch, then incorporate - improves soil texture and biology, but again don't overdo. Woody products are significantly acidic, so keep an eye on soil pH.

Cardboard / Paper - Can be used for weed suppression (in layered sheets); thicker layers could also be used for paths. Can be used for moisture conservation (shredded). Will decompose, like any wood based product, and can be incorporated. May have petroleum based or toxic compounds. If using newspaper, do not use the glossy inserts; your local paper may be able to tell you if they are using soy or other plant based dyes.

Compost - A great soil improvement mulch, adds nutrients, improves soil structure, conserves moisture, enhances soil biology. Breaks down pretty fast, not much benefit for path work. Available bulk, in bags, or make your own.

Grass Clippings - Can use for path work or as topdress, or incorporated, but thick layers will result in a slimy anaerobic mess. Usually available for free from your own lawn or your neighbor's, but know for certain about herbicide / synthetic fertilizer use and potential for weed seeds. Ideally, spread a layer in the sun to dry for a few days before use. Don't strip your lawn of all its clippings - it needs mulch too!

Leaves - Spread in fall, good weed suppression and enhances soil structure and nutrients - as long as it decomposes enough and is incorporated. Shredded will decompose faster and let more water through - deep piles of whole leaves may not let enough water through, may not fully decompose before spring planting. Do not use oak, walnut, eucalyptus leaves (though they can be used after fully composted). Usually not available for growing season path or topdress.

Manure - Important to differentiate between "fresh" manures and composted manures. Manures provide nutrients and improve soil structure, but fresh manures tie up nitrogen until they finish breaking down. Fresh manures should be fall or winter applied, incorporated immediately or in spring before planting; they may have weed seeds, and tend to be really rank. Composted manures can be incorporated at or shortly before planting.

Mint - Mint compost is an excellent source of nutrients, and also provides good but short-term weed suppression. It decomposes fairly rapidly, and can be incorporated or used as a topdress. The heat and pressure of processing eliminates disease and weed risk, but the mint may not have been grown organically.

Plastic Mulches - There are many types of plastics that can be used in mulching. Clear or light colored plastic films heat up the soil and keep soil moisture in; so do dark films, and they also dramatically reduce weeds. Plastic films do not allow water or air penetration, creating the risk of dangerously hot or anaerobic conditions, and should generally be used only for short periods for soil heating and solarization. Specialty films in red or green increase yield on tomatoes/peppers, and on squash/melon, respectively; they are often not perforated, so make large slits to plant through and make sure water and fertilizer get where they're needed. Woven plastics (geotextile or weed barrier fabrics) are much better for long use, as they let water, air, and nutrients through. Woven plastics also are typically longer lasting - few films survive longer than a year or two, but weed barrier fabric, if pulled and stored at the end of the season, can last for many years.

Straw - Loose and tends to allow decent water penetration - unless over compressed; can be used for weed suppression, path work or to topdress - popular for potatoes and underlaying strawberries. Like all carbonaceous mulches, it is nitrogen-negative, so feed well. As it decomposes it can be incorporated. Watch out for weed seed - both field weeds and the original grain crop!