



Using Cover Crops in the Garden

Cover crops are plants grown to keep the soil covered between vegetable crops to protect it from erosion. Cover crops can also improve a soil's structure and fertility. Cover crops can be used as reservoirs for plant nutrients – and some cover crops will even add nitrogen to the soil. Harvested cover crops can be worked into the ground, used as mulch or added into compost. Keeping plant cover on the soil throughout the year, helps maintain soil organism populations. These soil organisms help improve soil structure to increase water infiltration, water holding capacity and space for root growth. Many cover crops are also useful for attracting and providing habitat for pollinators and other beneficial insects.

A **cover crop** can be almost any plant, but certain plants are typically used because the known benefits they bring. The table on the back of this page is a sampling of some of the common crops used for cover crops. Picking a cover crop depends on what time of year you need it and what benefit(s) you're hoping to get. Cover crops are used during periods when the soil would be otherwise left fallow: after the final harvest of the season, in between cool and warm season crops and in preparation of new beds.

Cool season cover crops are more commonly used. These are usually planted in late summer or in the fall. In some cases Cover crops provide fall growth followed by a dormant period followed by spring growth (cereal rye). In other cases cover crops provide fall growth followed by winter kill which allows for weed suppression and/or the roots to slowly decay over the winter to open up the soil (daikon radish). Winter killed cover crops are handy in covering garden space that will be used for early crops the following spring.

Warm season cover crops typically produce a lot of biomass. They are usually grown for short periods to keep the soil covered and microbes happy between crops. They can also be used to span the time between a winter cover crop and the start of a late planted warm season vegetable crop.

Cover crops can also be used in multi-species blends. This can allow for multi-tasking. For example, a mix of crimson clover and daikon radish will both add nitrogen (clover) and open up the soil (radish).

Managing cover crops can be challenging but becomes easier over time. In a garden setting, cover crops are usually broadcast seeded. Planting can be done after the previous crop has been cleared. If there is enough light reaching the soil surface, some cover crops can be overseeded into an existing crop. Weather plays a big role in the amount of growth in cool season cover crops. The exact timing of how early to plant can vary from year to year. Some normally winter hardy cover crops will winter kill if they have not reached a certain level of maturity before the first killing frost.

Cutting just before flowering often maximizes cover crop beneficial properties and prevents them from dropping seed and becoming a weed. When trying to attract pollinators, it's better to allow the cover crop to flower. Sometimes this can be a challenge to determine when you've maximized pollinator attraction versus when you need to cut to minimize seed drop.

If plants are incorporated into the soil, allow 2-3 weeks before planting the next crop. Keep in mind incorporating the cover crop into the soil will disturb the soil and should be done when soil moisture

limits the chance of compaction. Cover crops which have reached a point of maturity (flowering) can often be killed by cutting them close to the ground. This material can then be used as mulch and the nutrients can seep into the soil or the nutrients can be recycled as compost. When cover crops are cut down, most vegetable crops can be seeded or seedling can be planted into the stubble.

Cover Crop	Sowing Time	Seeding Rate per 100 sf	Does This Fix Nitrogen	Grow Rate	Primary Uses/Comments
Buckwheat	Spring, Summer	2.5 oz.	No	Fast	<ul style="list-style-type: none"> Attracts pollinators and other beneficials Prolific seeder – Avoid allowing it to go to seed
Clover, Sweet	Spring, Summer	0.7 oz.	Yes	Medium	<ul style="list-style-type: none"> Does better in high pH soils than other clovers Some sweet clovers are perennial so select varieties with caution
Clover, Crimson	Fall	1.0 oz.		Medium	<ul style="list-style-type: none"> Can winter kill in harsh winters Flowers can be an important early spring pollen source
Oats	Late Summer, Early Fall	3.2 oz.	No	Medium	<ul style="list-style-type: none"> Winter Kills Likes well drained soils Good choice for areas that will be worked in early spring
Field Peas	Spring, Early Fall	2.6 oz	Yes	Fast	<ul style="list-style-type: none"> Out competes many weeds
Radish, Daikon	Fall, Spring*	0.5 oz.	No	Fast	<ul style="list-style-type: none"> Easily worked into the soil Winter kills Helps open the soil
Radish, Oilseed	Fall	0.4 oz.	No	Fast	<ul style="list-style-type: none"> Easily works in to the soil Allelopathic Good nematode suppression
Rye, Cereal/Winter	Fall	3.5 oz.	No	Fast	<ul style="list-style-type: none"> Easiest of the cover crops to grow Can be planted late into the season Good weed suppression
Ryegrass, Annual	Late Summer, Fall	0.6 oz.	No	Fast	<ul style="list-style-type: none"> Easy to grow
Sorghum-Sudangrass	Spring, Summer	1.7 oz.	No	Fast	<ul style="list-style-type: none"> Good weed suppression Good nematode suppression Can be planted as late as 6 weeks before frost
Wheat, Winter	Late Summer, Fall	4 oz.	No	Fast	<ul style="list-style-type: none"> Needs fertile soil Does not like low pH soils
Vetch, Hairy or Common	Fall	1.0 oz	Yes	Slow	<ul style="list-style-type: none"> Can be planted later in the season than clovers Chokes weeds

Note: This table is based on a variety of Extension and USDA sources. There is conflicting information on the exact seeding rate of many cover crops as local conditions vary.

For more information on cover crops, contact the VCE-Prince William office.