

Cover Crops

A cover crop is a crop planted in a garden to protect the soil from erosion and to improve the soil by adding organic matter. Most gardens benefit from the use of a cover crop during the time the site is not planted with vegetables. Even if the garden is in production the entire year, by dividing the crops into warm- and cool-season groups, it is possible to rest a portion of the site. During this rest, consider growing a cover crop.

Cover crops can be divided into two groups: legumes and nonlegumes (see table). Legumes have the ability to “fix” nitrogen and can provide a portion of the nitrogen requirement for a subsequent crop.

Within these two groups are both warm- and cool-season species that can be successfully grown in the home garden. Cool-season legumes include Austrian winter peas and vetch. Warm-season legumes include all of the southern peas and the common beans. Cool-season nonlegumes include the cereals oats, wheat, rye and barley.

Proper use of cover crops will improve the overall productivity of the soil. While the cover crop is growing, it will help prevent soil erosion and assist in weed control. The organic matter provided when a cover crop is plowed under will improve soil structure and aeration, water and nutrient-holding capacity and supply a portion of the nutrient requirements for subsequent crops. The type of cover crop growing and the length of time it is growing will determine how much organic matter and nutrients will be returned to the soil. A legume may provide more nitrogen but less

total organic matter than a vigorously growing non-legume like corn. As a group, legumes are more likely to harbor virus diseases and allow some soil-borne diseases to survive than most nonlegumes. However, the advantages of the nutrition provided by legumes may more than offset this disadvantage.

When a cover crop is incorporated into the soil at the end of the season, it is converted into organic matter. The use of a cover crop for only one year will not have much impact on the soil organic matter content. Regular use over a period of years, however, slowly raises the organic matter level in the soil, increasing the activity of soil organisms such as earthworms and fungi in the soil. As these organisms decompose the organic materials, they help improve soil structure and tilth, making the soil a more favorable place for root development. It is important to understand, however, that organic matter is continually decomposing and cannot be built up permanently in the soil. Soil building is a continual process in the garden.

Before sowing the cover crop, turn over the garden with a rotary tiller or spading fork. Dig under weeds and any remaining refuse from the vegetables or flowers that were not thrown into the compost heap. Level the soil with a garden rake. Sow the seed by hand, broadcasting as evenly as possible. Broadcast back and forth over the area several times in an attempt to distribute the seed evenly.

About three weeks to a month before you plant your garden for the next season, till the cover crop under if the soil is not too wet.

Suggested Cover Crops for South Carolina

Type	Legume/ Nonlegume	Amount to Sow/ 1,000 sq ft (oz)	When to Sow	When to Turn Under	Effects	Notes
Alfalfa (<i>Medicago sativa</i>)	L	1/2	Spring/ Late Summer	Fall/Spring	Fixes 3-6 lb N/1000 sq ft/yr; deep roots break up hard, compacted soil.	Loam, fairly fertile soil; needs warm temperatures for germination; lime if pH is low; hardy; drought-tolerant; inoculate.
Barley (<i>Hordeum vulgare</i>)	N	4	Fall/Spring	Spring/Fall	Adds organic matter, improves soil structure.	Prefers medium-rich loam soil; lime if pH is low; not as hardy as rye; tolerates drought.
Buckwheat (<i>Fagopyron esculentum</i>)	N	2 1/2	Spring/ Summer	Summer/ Fall	Mellows soil; rich in potassium.	Must leave part of garden in cover crop during growing season; grows quickly; not hardy.
Crimson clover (<i>Trifolium incarnatum</i>)	L	1/3	Spring/ Fall	Fall/Spring	Fixes 2-3 lb N/1000 sq ft/yr.	Not reliable hardy or drought-tolerant; lime if pH is low.
Fava beans (<i>Vicia faba</i>)	L	Plant 8 inches apart	Early Spring/ Late Summer	Early summer/ Fall	Some types fix 1 1/2-2 lb N/1000 sq ft in as little as 6 weeks. Use small-seed rather than large-seed table types.	Will grow on many soil types; medium drought tolerance; likes cool weather. Inoculate with bacteria as for other legumes.
Oats (<i>Avena sativa</i>)	N	4	Spring/Fall	Summer/ Spring	Adds organic matter, improves soil structure.	Not hardy; tolerates low pH.
Rye, annual (<i>Lolium multiflorum</i>)	N	3 1/2	Fall/Spring	Spring	Adds organic matter, improves soil structure.	Very hardy; can plant until late fall/early winter.
Vetch, hairy (<i>Vicia villosa</i>)	L	2 1/2	Early Fall	Spring	Fixes 2 lb N/1000 sq ft/yr.	Slow to establish; fairly hardy; till under before it seeds; can become a weed; inoculate seed before planting.
Wheat, winter (<i>Triticum aestivum</i>)	N	4	Fall	Spring	Adds organic matter, improves soil structure.	Same as barley.

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