

# Garden Scale Cover Crops

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### What is a cover crop?

A cover crop is grown specifically to hold soil in place and improve soil structure and fertility. It is not harvested or eaten. Cover crops are also often called green manures when they are grown specifically to increase fertility or organic matter.

### Why use cover crops?

Cover crops increase biodiversity in the garden, attract beneficial insects, hold soil in place, and increase soil organic matter. They also provide soil cover and can help suppress weeds. Soil that is left bare will start to erode and degrade and will also be an invitation to weeds. Cover crops are a great way to keep soil active and to crowd out weeds when the main garden crops are not present.

### How to choose a cover crop

When choosing a cover crop is important to consider first what your goals are for the soil. Do you need to increase fertility, are weeds your biggest concern, or do you really want to attract beneficial insects? Different cover crops will be better suited to specific goals. Next, you have to know which of your main crops will be planted before and after the cover crop. The timing of those main crops will be an essential consideration when identifying which cover crops can work in that niche. Finally, you need to know the specific characteristics and requirements of the possible cover crop choices (see below).

Generally, the easiest cover crops to start with are those that are winter-sensitive. These crops will be dead by spring and will leave behind a layer of mulch, thus protecting the soil while also providing a ready planting bed. Oats, peas, buckwheat and sorghum Sudan grass are some examples of cover crops that will winter-kill. They are also easy to seed, germinate well, and grow with little care. These covers are the best choice for beds that you will want to plant in early spring. In the case of main crops that you will not plant until late spring or early summer, you may choose a cover crop that is winter-hardy. Hairy vetch, clover, and rye are all examples of cover crops that will survive winter and continue to grow in the spring. When choosing one of these cover crops, it will be very important to know how you will kill the crop when you are ready to plant. Rye and clover can be difficult to kill with hand tools. Hairy vetch not difficult to kill and is a good choice when first trying winter-hardy cover crops.

### How to plant

After clearing the bed, loosen the soil with a fork or shovel. Measure out the right amount of seed for your bed (see below) and spread the seed evenly over the bed. Use a fork or hand rake to cover the seed with soil and firm in into the bed. Keep the bed moist until the seeds germinate. Row cover can help keep the bed warm and moist thus facilitating quick germination.

### When to take down a cover crop

To get the most benefit out of a cover crop, take it down when in full flower and before setting seed. Mature seed that drops in the garden can create weed problems. Any cover crop may also be killed before it flowers, according to your timeline and needs, and will still provide significant benefit.

### How to incorporate the cover crop and make ready for planting vegetables or flowers

Fall-planted winter-sensitive cover crops will all die over the winter and leave a mulch on the bed for the spring. Winter-hardy cover crops as well as those planted in spring or summer will need to be killed before planting vegetables. In either case, there are a few choices:

- Pull the cover crop off of the bed and use it as mulch in the same bed (after planting) or elsewhere in the garden. Loosen the soil and direct seed or transplant as usual.
- Pull the cover crop off of the bed and add it to your compost pile, to be returned to the garden later as finished compost. Loosen the soil and direct seed or transplant as usual.
- Work the cover crop into the bed with a fork or shovel and allow at least 2 weeks for it to decompose before direct seeding or transplanting as usual. If it is possible to chop the cover crop up a bit while incorporating, it will decompose faster.

- For transplants only: Pull the **dead** cover crop away from the transplant holes just enough to transplant as usual and leave the dead cover crop in place as mulch.
- For transplants only: Pull the **live** cover crop up by the roots and stack it on the side. Work the soil with a fork to kill roots. Transplant into the soil and then spread the stacked cover crop on the bed as a mulch.

## Variety Specifics

**Buckwheat** is winter-sensitive, frost-sensitive, and grows best in summer. It is fast, and will generally flower and need to be killed within 35 to 50 days. The flowers attract beneficial insects and the roots pull phosphorus to the surface from deeper in the soil. Buckwheat can be sown after the last frost (around mid-May) up until late August. Take it down when it is at full flower (or somewhat before) to prevent it from going to seed in your garden and becoming a weed. Seed 4 oz. per 100 ft<sup>2</sup>.

**Clover: Dutch White or Medium Red** are winter-hardy and grow best in cool weather. They are legumes that will fix nitrogen. The seeds are small and can be more difficult to germinate than the other legumes on this list. They can also be difficult to kill and will continue to grow unless well incorporated. Plant with the appropriate inoculant as soon as the soil can be worked through early September. Seed .5 to 1 oz. per 100 ft<sup>2</sup>.

**Cow Peas** are winter-sensitive, frost-sensitive, and grow best in summer. Also known as black-eyed pea, these nitrogen-fixing legumes can be planted on their own or with Sorghum Sudan grass, which they will climb. Sow after the last frost through July, with the appropriate inoculant. Seed 3 oz. per 100 ft<sup>2</sup>.

**Oats** are winter-sensitive, frost-hardy and grow best in spring and fall. They can be planted with peas or on their own. They germinate easily and their fibrous roots do a great job of holding the soil in place over winter. Plant as soon as the soil can be worked up through May, and again in August through early September. Seed 6 oz. per 100 ft<sup>2</sup>.

**Peas** are winter-sensitive, frost-hardy, and grow best in spring and fall. They are a legume that will fix nitrogen and can be planted on their own or mixed with oats as support of the pea vines. Plant with the appropriate inoculant as soon as the soil can be worked up through May, and again in August through early September. For seeding alone, use 8 oz. per 100 ft<sup>2</sup>. Plant a 3/1 mix of peas and oats at 8 oz. of mix per 100 ft<sup>2</sup>.

**Radishes: Daikon, Tillage or Ground Hog** are winter-sensitive, frost-hardy, and grow best in the fall. While these have been popular on some farms, they are not a good choice for gardens where other brassicas are grown. They are susceptible to all the pests and diseases that cause problems for other brassicas and can actually bring those pests and diseases to the garden. In the right setting, they will produce large taproots that can both alleviate soil compaction and bring up nutrients from deep in the soil. As the roots rot, they can also increase soil biological activity and leave channels for water infiltration and increased soil penetration by subsequent crops. Plant in mid to late August. Seed 2 oz. per 100 ft<sup>2</sup>.

**Rye, Winter** is winter-hardy and grows best in the fall and spring. This grass is very strong and fibrous. It also exudes allelopathic chemicals that inhibit germination of other seeds in the soil, including weed and vegetable seeds. It is best used where weeds are a main concern, but should be used with extreme caution in the home garden because it can be very difficult to kill. Always allow at least two weeks for rye to decompose before planting other crops. Plant in August through late October. Seed 4 or 5 oz. per 100 ft<sup>2</sup>.

**Sorghum Sudan Grass** is winter-sensitive, frost-sensitive, and grows best in summer. It is a relative of corn and will grow very tall and produce a great deal of biomass. It is a great choice for suppressing weeds and easy to kill over winter. It is best planted in late June through July and left in place until the following spring. Seed 4 oz. per 100 ft<sup>2</sup>.

**Sunn Hemp** is a winter-sensitive, frost-sensitive, and grows best in summer. This nitrogen-fixing legume can be planted on its own or with a summer grass like Sorghum Sudan grass. Be aware that it is very attractive to Japanese beetles which can not only damage this cover crop but also other crops in the garden. Plant after the last frost through July. Seed 1.5 oz per 100 ft<sup>2</sup>.

**Vetch, Hairy** is winter-hardy and grows best in the fall and spring. It is a legume that fixes nitrogen and should not be confused with crown vetch. It can be planted on its own or with rye and is easy to seed and germinate. When on its own, it can be killed easily in the spring by cutting it down and working up the roots. Plant in August through late September. Seed 1 oz. to 1.5 oz. per 100 ft<sup>2</sup>.

## Where to Find Seed

Fedco Seeds – [fedcoseeds.com](http://fedcoseeds.com)

- No pictures in the catalog, but lengthy descriptions
- Limited selection, some organic seed
- Can purchase small or large amounts
- Maine – cooperative business

Green Cover Seed - [greencoverseed.com](http://greencoverseed.com)

- Good prices on small or large volumes
- Wide selection of conventional seed, no organic seed
- Nebraska

High Mowing – [highmowingseeds.com](http://highmowingseeds.com)

- Great catalog with pictures and detailed cultural information
- Limited selection, all organic seed
- Can purchase small or large amounts
- Vermont

Johnny's Selected Seeds – [johnnyseeds.com](http://johnnyseeds.com)

- Great catalog with pictures and detailed cultural information
- Limited selection, some organic seed
- Can purchase small or large amounts
- Maine

Welters Seed & Honey Co. - [welterseed.com](http://welterseed.com)

- Great prices on larger volumes
- Wide selection of conventional and organic seed
- Small amounts available on some select seeds
- Iowa