



COVER CROPS

Adapted from UC Master Gardener Program of Marin County

Cover crops are plants grown primarily to improve soil. Planted when traditional garden crops are not present, they enrich soil and provide numerous other benefits. Cover crops are often referred to as a "green manure."

Advantages:

- Build soil fertility
- Increase soil organic matter
- Suppress weeds
- Protect soil from wind and water erosion
- Provide habitat for beneficial insects and earthworms
- Loosen soil without digging, as roots reach down deeper than any shovel
- Fix nitrogen in the soil. Research shows that legume crops, especially vetch, are the best for nitrogen fixing.
- Suppress some harmful soil-dwelling nematodes: Mustard plants do this naturally.
- Provide aesthetic addition to winter gardens.

Disadvantages:

- May require watering, at least until fall rains keep soil evenly moist.
- Cutting down the crop and digging it into the garden bed is work.
- Patience is required while the chopped material breaks down in the planting bed. Alternatively, put greens in the compost pile.

TIMING: when to plant and cut down a cover crop. Planting cover crop seed at the right time is important for success.

September or October: Sow cover crop. To enhance the soil for spring edibles, avoid planting cover crops after November.

February or early March: When cover crops are 25-50% in flower, cut them down, chop them up, and dig the greens into the soil 3 to 6 weeks prior to planting. The buried material will decompose and provide nutrients and organic material to the soil while increasing biological activity, water infiltration, and soil tilth. Shredded cover crop may also be added to your compost pile instead of digging it into the bed.

Example: Plant cover crop on October 1, cut down on March 1, plant tomatoes and other spring crops on April 1-15.

Any time of year: Plant a cover crop at any time to enhance a tired bed, as long as the crop planting is consistent with the growing season.

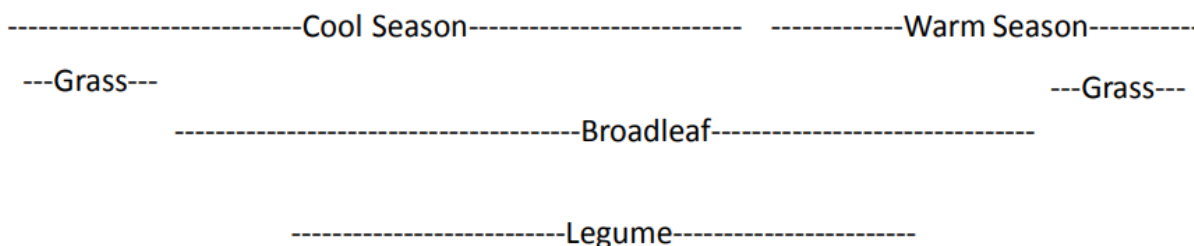
HOW TO PLANT a cover crop:

- **Inoculant:** Some UCCE (University of California Cooperative Extension) Farm Advisors recommend inoculating legume seeds prior to planting to effectively fix nitrogen. Legumes work with bacteria called *Rhizobium* that live on their roots, and allow the plant to fix nitrogen into the soil. Buy inoculant where you buy cover crop seeds.
- **Planting depth** is based on seed size. In general, the larger the seed, the more soil cover it requires. Follow instructions on seed package and the suggestions below.
- **Rake the soil smooth**, removing any significant debris from a previous crop.
- **Broadcast** the seed at the recommended rate for the plant type.
- **Cover** the seed with soil to the recommended depth for the plant type.
- **Water** if necessary and keep moist until rains begin.

WHAT TO PLANT: Choose a cover crop based on your goals:

Improve soil structure	Plant deeply rooted plants and/or plants with large biomass such as barley, rye, and daikon radish.
Build soil microbial biomass	(fungi, bacteria and other microbes): Plant <i>Phacelia</i> .
Protect the soil from erosion	Plant grasses, mustard, and radish.
Suppress weeds	Plant grasses, mustard, and radish.
Attract beneficial insects	Plant mustard and radish. (These plants may also attract undesirable insects such as cucumber beetles and stink bugs).
Increase nitrogen	Plant vetch and other legumes.
Seeding for the season	Common Cover Crops for California are included in the chart below. Once you've identified the desirable crop, check with local nurseries or online seed suppliers for availability.

Cover Crop Chart



Annual grasses								Corn
Barley	Brassicas	Fava bean						Japanese millet
Cereal Rye	Flax	Field pea	Balansa clover	Red clover	Common vetch	Chickpea	Amaranth	Proso millet
Oats	Phacelia	Lentil	Berseem clover	Rose clover	Hairy vetch	Cowpea	Buckwheat	Sorghum
Triticale	Radish	Lupine	Crimson clover	Sweetclover	Purple vetch	Soybean	Safflower	Sudangrass
Wheat	White mustard	Medic/burr clover	Persian clover	Subterranean clover	Woollypod vetch	Sunn hemp	Sunflower	Teff

References

Cover Crop Chart: Common Cover Crops for California. USDA. [Cover Crop Chart: Common Cover Crops for California \(usda.gov\)](#)

What to do Off-Season in the Edible Garden. UC Marin Master Gardeners. UC ANR. [COVER CROPS & SOIL ENHANCEMENT - UC Marin Master Gardeners \(ucanr.edu\)](#)

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<https://ucanr.edu/sites/mgslo/>

Availability	On VMS: News/Docs > Documents/Presentations > INFO DOCS: COVER CROPS	
History	Original: 10/8/22	