FIBERSHED
Quick Guide

Cover Crop (CPS 340)

Part of Fibershed's Carbon Farming Education program, learn more online at: **fibershed.org/carbon-farming**

Photo by Carleen Weirauch

Benefits of a Cover Crop

- Build soil organic carbon levels
- Increase nutrient retention and availability in the soil
- Increase microbial activity and earthworms in soil
- Reduce soil compaction, improve soil structure
- Increase water infiltration and water holding capacity
- Prevent wind and water-caused erosion
- Aerate and filter soil for pollutants
- Weed suppression and pest control (aboveground or belowground)
- Increase biodiversity and pollinator support
- Provide forage for animals
- Increase yield potential over time

Planning for a Cover Crop

Plant/Seed Selection

- Cover crops may include either a single species or a mix of seasonal grasses, legumes, and/or forbs. Species selection will depend on the intended purpose/benefits of the cover crop.
- Multispecies cover crops amplify aboveground and belowground biodiversity, providing more adaptability, and acceleration of soil health benefits.
- Choose plants that are regionally adapted and compatible with the soil, water, and light conditions of your site.
- Determine whether you will use a legume or non-legume seed mix based on nutrient needs and other intended purposes of the cover crop. Assess soil nutrient status with a soil test, and consider nutrient needs of the following crop and/or livestock if you plan to graze the cover crop.
- Cover crops can be selected for either Cool Season (planted in the fall or seeded into dormant perennial pasture) or Warm Season (spring or summer) growth.
- Seed treatments: Remember to ask if/how seeds have been treated. Legume species may require a microbial inoculant to achieve maximum effects of nitrogen fixation. Avoid seeds treated with chemicals that may inhibit healthy soil life.

"Agricultural land management practices can measurably increase rates of carbon sequestration, resulting in enhanced soil quality, soil water holding capacity, increased soil carbon and forage production."
– Ryals and Silver 2013

Complementary Practices

- Multi Story Cropping (CPS 379)
- Integrated Crop and Livestock Systems
- Prescribed Grazing (CPS 528)
- No-till or conservation tillage (CPS 329 and CPS 345)
- Silvopasture (CPS 381)
- Conservation Crop Rotation (CPS 328)
- Improved Nitrogen Fertilizer (CPS 590)

Technical Support

- Your local technical service provider can help you select an appropriate cover crop seed mix, as well as planning for planting, maintenance and termination.
- Resource Conservation Districts (see CARCD's **website directory** to find which one serves your area)
- Natural Resources Conservation Service (see NRCS's **service center** locator to find which office serves your area)
- UC Cooperative Extension has Climate Smart Agriculture specialists located in offices across California, and other technical specialists with cover crop expertise.

Quantities and Cost Reference

- Cover crop seeds can range from less than 50 cents/lb to upwards of $3/lb.
- The amount of seed needed per acre varies widely depending on species composition and management goals (10 lbs/acre to 100+lbs/acre). Consult with your technical assistance provider or refer to a seed company's recommendation for how many pounds per acre are needed for their seed or mix. Higher seeding rates may be helpful with weed suppression.

Implementing and Managing a Cover Crop

Implementation

- Cover crops can be planted at various times in the year, depending on your regional weather and specific goals for the area (for example, protecting and building soil health between annual vegetable crops; revitalizing pasture; or preparing for future perennial crops)
- Seeding dates, depth of seeding and seeding rate (lbs per acre) depend on the selected seed mix for your area and purpose.
- To minimize soil disturbance, cover crops can be planted with a no-till drill. Other planting strategies include conventional seed drills and broadcast seeding. Ask your local technical service provider about specific planting timing, strategies and equipment recommendations for your farming system and location.

Termination

- Timing and management techniques are important for planning how and when you will terminate a cover crop. Consider soil moisture availability, nutrient management goals and ideal plant stage for termination.
- Termination practices that can avoid herbicide use include winterkill (frost), mowing, tillage, and roller crimping. Grazing may also be an option for some operations. Efficacy of these practices, alone or in combination, will depend on cover crop species composition, site conditions, and life stage/development of the cover crop plants.

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