

Cover Cropping

What

Cover Crops, also known as “Green Manure,” benefit the soil by increasing fertility and controlling erosion. These temporary plantings can consist of grasses, legumes, or cruciferous species sown in bare or nearly bare soil, or in orchards between the rows. Depending on the crop rotation, a cover crop can be sown anytime from early spring through fall.

Why

Soils are a farm’s most valuable asset.

The primary purpose of growing cover crops for most farmers who use them is to preserve that asset by protecting soil from erosion by wind, rain or runoff. Soils shielded by a cover of living plant material or plant residues are kept in place on the farm, rather than transported to nearby watercourses.



Alternate rows of clover and ryegrass.

The use of cover crops can improve organic matter content, porosity, and tillth in all farm settings. For example, Legume cover crops can produce as much as 50-150 pounds/acre of nitrogen which can increase soil fertility. Some cover crop species can suppress weeds by depriving weeds of nutrients and sunlight. Others help provide food and refuge for beneficial insects and other organisms, creating a root zone rich with soil microbes found to resist diseases and pests.

Cover crops expand a farmer’s feed options and efficiency. A grain cover crop sown in September can be harvested as haylage in the spring. If crop fields are fenced, livestock can graze the cover crop before or after harvesting. Prioritize cover cropping on fields close to waterways with steep slopes or where there are obvious signs of erosion. Winter cover crops are a critical piece of reducing spring runoff, which is high in nutrients.

How

Cover crops can be sown when the field is between harvests and when there is time enough for a cover crop to be established. Whether a particular cover crop species should be planted in a given situation will depend on the anticipated benefits of that seeding as compared to its known costs. Each species has its own particular characteristics (for example, buckwheat is used for weed suppression while Sudangrass is grown for biomass production), so farmer goals and the characteristics of the cover crop species should be clearly understood.

Common winter cover crops sown in the fall include winter rye, oats and winter wheat. Some crops winter-kill, such as oats, while others will start to grow again in the spring. Common summer crops that grow rapidly during

June-August include buckwheat and sorghum-Sudangrass. Perennial covers include red clover and ryegrass, though these can also be grown for a single season. Covers can be sown in combination, such as hairy vetch and rye in fall, oats and field pea in the spring, or sorghum-Sudangrass and red clover in early summer.

For late summer and fall sowings, overwintering crops such as some forage brassicas, wheat, annual ryegrass, medium red clover, hairy vetch, and cereal rye (also known as winter rye) provide good to excellent erosion control and a variety of soil benefits. Each species, however, may also have drawbacks and require additional management. Most overwintered cover crops should be killed by tillage or by applying herbicide as soon as the fields are accessible in early spring, as early as April in some parts of Vermont.

Most cover crops planted for winter soil protection will be sown between August 15 and October 1. Seeding rates will depend on site conditions and whether the seed is broadcast or drilled. High seeding rates and good soil-seed contact can improve the quality of a cover crops stand and reduce subsequent weed pressure in a field. The Vermont NRCS Job Sheet suggests seeding rates for several commonly grown cover crops.

Costs

A small grain conventionally grown cover crop could cost about \$85/A/year in materials and labor. A small grain

organically grown cover crop could cost about \$140/A/year in materials and labor for application. A legume cover crop could cost about \$120/A/year if grown conventionally, and about \$150/A/year if grown organically. Seed prices may vary depending on the source. The additional costs associated with using cover crops are balanced by the savings of purchased nutrients and herbicides.

Cover Crops

Recommended Seeding Rates
for Commonly Used Cover Crops

CEREAL GRAINS

Oats

90-120 lbs. per acre
If broadcast and disked into the soil, seeding rates for cereal grains shall be increased by 50%

Rye

90-120 lbs. per acre

Triticale

90-120 lbs. per acre

Winter Wheat

90-120 lbs. per acre

GRASSES

Annual Ryegrass

10-15 lbs. per acre

Seeding Mixtures on Well Drained and Droughty Sites (Pounds Live Seed)

Ladino White Clover

5-7 lbs. per acre

Sudangrass

25-30 lbs. per acre

Buckwheat

75-100 lbs. acre

Hairy Vetch

25-30 lbs. per acre

Seeding Mixtures on Somewhat Poorly Drained Soils with Moderate pH

Medium Red Clover

8-10 lbs. acre



Fall-seeded cover crop in a corn field. A fall cover crop prevents erosion from wind and rain, and helps to provide nutrients to the soil. This cover crop will likely be incorporated into the soil in the spring, before another planting of corn.

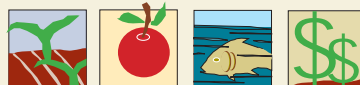


Strips of well-maintained grass between the orchard rows help to suppress weeds and prevent erosion.

Associated and Complimentary Practices

- Conservation Crop Rotation
- Conservation Tillage
- Integrated Pest Management

Benefits



A cover crop of ryegrass in between corn rows.