



Cover Crop Basics

USDA Natural Resources Conservation Service



Cropping challenges caused from poor fertility, low organic matter, poor infiltration, soil erosion, weeds and compaction are actually indicators of poor soil health. While tillage is often used to treat these issues, it is detrimental to soil health. Cover crops are used to scavenge nitrogen, increase organic matter, improve infiltration and reduce erosion and weed problems.

The information below provides some basic information about cover crops. Designate a 20-40 acre field to experiment with cover crops and see how they can help your soil and you!

Cover Crop Usage Tips

- Use shorter season varieties of corn or soybeans to maximize cover crop benefits.
- Leave crop residue to preserve moisture.
- Plan early and locate your seed in June.
- Select varieties that are well suited for your area, avoid "Variety Not Stated" (VNS) seed.
- Plant early and shallow (1/4 to 1/2 inch).
- Applying 20 pounds of nitrogen, per acre, at planting will give your cover crop a boost for quicker establishment.
- Extreme weather years show the most benefit from cover crop usage.

Cover Crop Termination Tips

- Be able to control cover crops in the spring, even if by ATV sprayer.
- For best results, spray on sunny days when temperatures are above 50 degrees.
 - If spraying when temperatures are in the 40s, spray in the early morning versus afternoon to allow for better herbicide translocation.
- Use additives such as Ammonium Sulfate (AMS) with your herbicide.
- Consider using non-glyphosate herbicides to reduce the risk of plants developing herbicide resistance.
- When planning herbicide control for cover crop mixes, take all species types into account.
- Residual herbicide from the previous grain crop can prevent desired cover crop establishment.
 - This is especially noticeable in overlap areas and during dry and late planting years.

What is the easiest cover crop to try?

Cereal Rye after corn and before soybeans. Increased soybean yields result from this rotation.



Crimson Clover

Annual Ryegrass

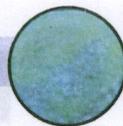


Preferred varieties:
King, Bounty, Jackson

Drilled Rate: 12 pounds per acre
Broadcast Rate: 20 pounds per acre
Seed Cost: \$9-\$16 per acre
Seeding Period: March, August-September
(up to October 10 works most years)

- Reasonable in cost
- Seed in September for best results
- Works well in front of corn or soybeans
- Establishes easily, even when broadcasted
- Provides weed control
- Has good root mass
- Adds organic matter and soil tilth
- Likes wet soils
- Collects nitrogen in the fall and winter
- Kill in April during its vegetative state
- Secondary buds allow regrowth
 - If not controlled in the spring it can become a problem
- Plan on two herbicide applications
- Can be a problem in wheat
- Decomposes easily
- Marshall, Bruiser are good forage varieties

Cereal Rye



Preferred varieties:
Aroostock, Rymin, Daold

Drilled Rate: 50 pounds per acre
Broadcast Rate: 75 pounds per acre
Seed Cost: \$12-\$20 per acre
Seeding Period: March-May,
August-mid November

- Easy to establish, can usually broadcast
- Good for breaking up surface compaction
- Provides good weed control
 - Winter annuals, smartweed, ragweed, horseweed
- Be careful if used before corn
 - Has the potential to stunt corn especially in cool, wet conditions
 - Broadcast 50 pounds of nitrogen per acre at planting, come back and side-dress to alleviate the issue
- Easy to plant into
- Captures nitrogen
- Kill at end of March to release nitrogen
- Easy to control in the spring
- Grows fast in April
 - Can severely dry out soil if not controlled early enough
- Can be grazed/harvested for hay

Crimson Clover



Preferred varieties:
Dixie, AU Robbins, AU Sunrise

Drilled Rate: 12 pounds per acre
Broadcast Rate: 18 pounds per acre
Seed Cost: \$14-\$21 per acre
Seeding Period: July-September 20
(up to October 1 works most years)

- Inoculate seed prior to planting
- Not the same as Red Clover
- Doesn't like wet field conditions
- Winter annual – excellent growth
- Good nitrogen provider
 - Provides up to 100 pounds per acre usable nitrogen
- Kill Crimson Clover in mid April
 - In late April/early May Crimson Clover will bloom and die

Hairy Vetch



Preferred varieties:
Groff, Madison, Winter, Pennington, Kaup

Drilled Rate: 15 pounds per acre
Broadcast Rate: 20 pounds per acre
Seed Cost: \$27-\$36 per acre
Seeding Period: August-September

- Inoculate seed prior to planting
- Blue, Purple and Common Vetch are not winter hardy.
- Not the same as Crown Vetch
- Good option before corn
- Provides 100+ pounds of nitrogen for following corn crop
- Increases corn yields
- Easy to control in the spring with 2,4-D
- Vetch can be driven over and planted into.
 - Plant corn 1.5-2 inches deep and make sure to plant into soil and not the cover crop residue.
- Decomposes in less than 30 days

Oats



Preferred varieties:
Bates, Webster

Drilled Rate: 35 pounds per acre
Broadcast Rate: 50 pounds per acre
Seed Cost: \$12-\$17 per acre
Seeding Period: March-April,
August-September

- Cheap to plant
- Establishes fast
- Provides good erosion control
- Scavenges nitrogen
- Reduces winter annuals
- Winter kills
- Can be grazed
- Easy to plant into in spring

Oilseed Radish



Preferred varieties:
Adios, Arena, Tillage, Daikon

Drilled Rate: 5 pounds per acre
Broadcast Rate: 8 pounds per acre
Seed Cost: \$13-\$20 per acre
Seeding Period: March-May,
August-September 15 (October 1 at the latest)

- A fall seeding rate will produce carrot size root
- Best results when planted early
 - Earlier planting date provides larger root
- Easy to establish
- Works best in rows
- Doesn't like acidic soil
- Increases soil tilth and organic matter
- Works well mixed with oats or cereal rye
- Dies after several days at 25 degrees
- Decomposes quickly, no root left in spring

What Not to Use as Winter Cover Crops

- Winter peas and lentils are not winter hardy
- Turnips are better for grazing than as a cover crop
 - You will see more advantages in row crops with Oilseed radish
- Canola is difficult to grow and requires a September 12-20 seeding date to survive winter
- Buckwheat is a summer annual that captures phosphorus and provides summer weed control
 - Buckwheat must be killed in 45 days or it sets seed and becomes a weed itself.

Try These Cover Crop Mixes

- Oats at 30 pounds per acre with Crimson Clover at 8-10 pounds per acre (\$22/acre)
- Oats at 30 pounds per acre with Oilseed Radish at 3 pounds per acre (\$18/acre)
- Oats at 30 pounds per acre with Hairy Vetch at 12 pounds per acre (\$32/acre)
- Cereal Rye at 35-40 pounds per acre with Oilseed Radish at 3 pounds per acre (\$18/acre)
- Annual Ryegrass at 8 pounds per acre with Crimson Clover at 10 pounds per acre (\$18/acre)