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Cover Crop Guide

Cover crops can be a wealth of opportunities for the farmer. Applying cover crops will improve soil health to boost yields for a more economic crop production. They may be grasses, legumes or small grains. Cover crops are planted to preserve topsoil during crop-free periods on the field, and to suppress weeds. Many benefits may be seen when cover crops are properly chosen for your specific needs and then properly managed. Cover crops need to be an integral part of your management plan rather than just an afterthought.

Following Corn and then going to Soybeans, the focus is on nutrient recovery, soil compaction and erosion control. Consider the following cover crops:

Winter Rape drill or aerial application 5-10 lbs. per acre seeded Aug 15th to Sept 30th.

Winter Rape has a natural fumigant and has been shown to suppress Soybean Cyst Nematode. It is easy to kill in the spring then go ahead and no-till your soybeans.

Daikon Radishes 5-10 lbs. per acre drilled or aerial application 8 – 10 lbs. seeded Aug 15th to Sept 30th.

The earlier the better as this radish needs the early fall growth for plant development and a maximum return on the seed investment. Radishes have an amazing tap root that can penetrate compacted soils which helps to break up compacted soil layers over time. The tap roots break down easily over winter, leaving holes in the ground that aid in water infiltration and rooting of the subsequent crop. Other types of radishes exist that are not as effective in penetrating the soil. There are several brands and trademarks for the Daikon type of radish. Radishes usually do not survive the winter. Radishes may cause an odor problem if there is a hard freeze and then a warm period. They give off hydrogen sulfide as they decay which produces a sulfur-like odor that may take days to dissipate. This is also a natural fumigant. Since they are dead there is only the residue on the ground in the spring which allows for easy planting. Some farmers plant Spring Oats along with the radishes which also die out in the winter. The Spring Oats should be seeded at a rate of 30 lbs. per acre for extra cover.

Turnips at 2 lbs. per acre, drilled or aerial applications, may be mixed with winter rape or radishes for extra food and grazing for wild life, particularly deer. Turnips produce a high quality forage which the deer or cattle graze the tops and the roots of.

Annual Ryegrass drilled 10 - 12 lbs. or aerial application at 20 - 25 lbs. seeded Aug 15th to Oct 15th. Annual Ryegrass has a very branched and deep root system. This plant is very efficient at reducing compaction and nutrient capture, although it does take several years of repetitive usage to achieve the desired results. There are dozens of varieties of annual ryegrass, many are not winter hardy enough at this latitude. We have had good results with Rio, Frosty, and Marshall. Remember that annual ryegrass is Italian Ryegrass. Italian Ryegrass has shown various levels of resistance to glyphosate. All contact herbicides need actively growing tissue to kill the plants so when spraying cover crops, be sure that the weather is warm enough to allow the plants to be actively growing. Annual Ryegrass is a high maintenance cover crop. It is recommended that you walk your fields and look closely for any remaining live plants that may produce seed. If annual ryegrass is not killed and goes to seed, it can become a problem weed which will spread rapidly.

Following Soybeans and then going to Corn, focus is on nitrogen production, soil compaction, nutrient recovery and erosion control. Consider the following cover crops:

Hairy Vetch drill at 20-25 lbs. per acre seeded Aug 15th to Sept 15th. Aerial application is not recommended. The seed needs to be inoculated for best results. Inoculation is easy to apply to the seed and is inexpensive. Hairy Vetch will get some growth in the fall and produce nitrogen but if left to grow later into the spring can produce from 50-180 lbs. of nitrogen. Since the plants vine out, even an average stand can provide excellent ground cover in the spring. Timing is everything to balance an optimum corn planting date with nitrogen production. Hairy Vetch is easy to kill. Timing is crucial, if it is killed and the corn is not planted before a rain, the mass of residue will not allow the soil to dry out.

Winter Peas drill at 30-40 lbs. per acre seeded Aug 15th to Sept 30th. Aerial application is not recommended. The seed needs to be inoculated for best results. There are several varieties of Winter Peas. Winter Peas usually get more growth and more nitrogen fixation in the fall. Winter Peas are not quite as winter hardy as Hairy Vetch. Like Hairy Vetch, Winter Peas vine out and a thin stand in the spring can produce excellent cover. Winter Peas are easy to kill. Like Hairy Vetch timing is everything to balance nitrogen production with optimum corn planting time.

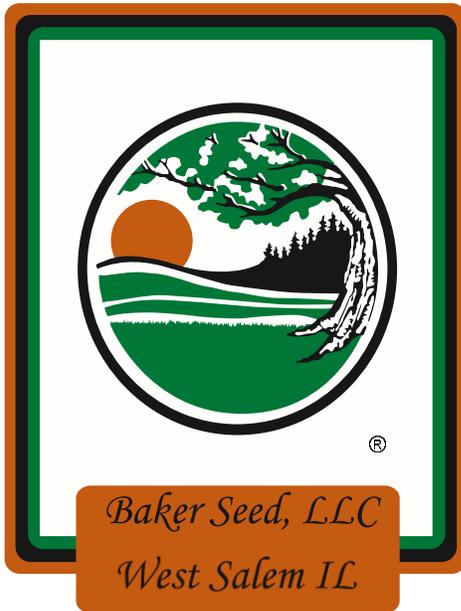
For compacted soils 5 lbs. of **Daikon Radishes** can be mixed with either the **Hairy Vetch** or **Winter Peas** for extra fall growth.

Crimson Clover drill at 8 - 12 lbs. or aerial application of 15 lbs. per acre seeded Aug 15th to Sept 15th. This seed needs to be inoculated just before planting for the best results. It is traditionally used further south; it works best from Bowling Green, Kentucky southward. It is not adaptable to a hard winter and therefore may die prematurely before optimum results have been obtained. If sufficient growth occurs in the fall, frost-killed crimson provides some cover crop benefits. Crimson produces nitrogen to improve soil health. For best results it needs to be applied to the ground at least six weeks before a killing frost.

Winter Cereal Rye drill at 35 - 50 lbs. or aerial application of 50 lbs. per acre seeded from Aug 15th to Nov 30th. Cereal Rye is one of the best cover crops where fertility is low and winter temperatures are extreme. It continues to grow at lower temperatures if a late seeding is needed due to a late harvest. Cereal Rye will prevent erosion and capture nutrients. Cereal Rye can be killed with any of the broad spectrum contact herbicides and the grass contact herbicides. If planted early **Hairy Vetch** or **Winter Peas** can be mixed with Cereal Rye following soybeans. The fast growth of the Cereal Rye tends to protect the Hairy Vetch and Winter Peas during the winter and provides a natural trellis for them to vine out onto in the spring. A fast germinating seed, and the plant has a deep fibrous root system with excellent winterhardiness.

COVER CROP BENEFITS

Reduce Erosion Caused By Water Or Wind
Improve Soil Microbiology
Produce & Scavenge Nutrients Winter Annual Weed Control
Reduce Soil Compaction Improve Crop Yield Potential Over Time
Improves Soil Tilth Whether Turned Under Or Left On Surface
Recycle Nutrients That Might Otherwise Be Lost To Leaching



Seeding rates will vary depending upon the method used and time of seeding. Drilling requires less seed and provides for a much better stand establishment. Later planting dates, broadcasting, and aerial seeding requires higher seeding rates. When using a mix, the rates are reduced proportionately to the mixture desired. Although drilling is more efficient, due to equipment requirements, labor availability, and crop maturity, aerial seeding is still the most widely used application for cover crops. Aerial seeding behind soybeans should be done when the soybean leaves are yellow and starting to drop. Aerial seeding

behind corn should be done as close to possible before harvest. The harvest equipment presses much of the seed into contact with the soil. The shredding of the leaves and stalks provides a natural mulch to cover the seed. At least 50% of the sunlight needs to be able to reach the ground between the rows. Timing is crucial so the aerial applicator needs to work with the farmers to line up the fields according to maturity and not just large blocks that are convenient for the aerial applicator. Make sure when selecting the cover crop that your herbicide selections are compatible.

Winter Wheat should not be used as a cover crop. If Wheat is planted out of the normal season, it can provide the “Green Bridge” for diseases and insects that attack the cash crop. Winter Wheat also has a toxic effect on many following crops, particularly corn.

Remember that Winter Wheat and Winter Canola when included in the crop rotation as cash crops can provide erosion control and nutrient capture as well as diversification of the crop rotation for higher profit potential, labor, equipment efficiency, and cash flow.