



GARDEN COVER CROPS

bolster soil nutrients, organic matter

And that means more produce for you

Caitlin Youngquist

You have probably heard about the benefits of cover crops on farms, but what about in gardens?

Cover crops can improve soil health, add nitrogen, attract pollinators and other beneficial insects, discourage weeds, and break disease cycles.

A rotation system is the simplest way to use cover crops in a garden. Plant half or one-third of a garden space with cover crops in the spring and plant the rest of the garden with annual vegetables and flowers.

Each year, rotate the ground that has been in cover crops back into garden crops. Designate a separate spot in the garden for perennial crops like herbs and strawberries, and keep them out of the cover crop rotation.

Selecting Cover Crops

Cover crop species selection depends on your goals, location, the time of year of planting, and seed

availability. Legumes (clover, peas, vetch) “fix” nitrogen from the atmosphere with the help of symbiotic bacteria living in their roots. This means they take nitrogen from the air (unavailable to plants) and put it into the soil (available to plants). For this reason, most cover crop mixtures will include at least one legume.

Mustard and **buckwheat** attract

A **cover crop** is a crop grown specifically to protect and improve the soil, or break disease or weed cycles. Unlike cash crops, cover crops are not harvested for market, although in some cases they are grazed by livestock. Common cover crop species in Wyoming include peas, barley, radishes, turnips, sunflowers, and grasses.

pollinators and beneficial insects to their flowers and can help reduce weed emergence if they are tilled into the soil.

Many grains and grasses tolerate cool, early spring temperatures, rapidly outcompete weeds, and provide structure for vining legumes. Grain seeds like **wheat**, **barley**, and **oats** are often readily available and inexpensive. **Millet** is well-adapted to the warm summers (in some areas) and alkaline soils of Wyoming.

Radishes and **turnips** can help loosen soil and will continue to grow beyond the first light frost. Table 1 on page 9 provides a few examples of cover crop mixes to get started.

Planning, Planting Cover Crops

A cover crop may need watered at establishment, and periodically during the summer, depending upon where you live. In areas that receive at least 14 inches of moisture per

year, some cover crop species may not need watered at all (growth may be significantly less than when watered).

When planting cover crops, the goal is to quickly establish a thick, healthy, cover crop stand that can out-compete and smother weeds.

The timing and method of planting will depend on location, garden size, available tools, and goals. Cover crops can be planted in rows, broadcast, or drilled. Seeding depth and rate will depend on the species being planted. Larger seeds like **peas** can be planted up to 2 inches deep, while smaller seeds need to be closer to surface. Carefully follow instructions on the package, if included. If purchasing seed in bulk to make your own mix, ask the seed company for seeding rate and planting depth recommendations.

A perfect seed bed is not required, and seeding rates can be increased to accommodate rough ground; however, keep in mind smooth ground will make life easier if trying to get a lawnmower through the cover crop later in the year.

Mow the cover crop a few times during the year to keep it from going to seed. This is very important. Cover crops in the wrong place are still weeds! The goal is to prevent the cover crop from going to seed, while also getting the maximum soil benefit. Mowing can be done with a lawnmower, weed eater, hand scythe, or even small livestock, like goats. The residue left after mowing will protect



White mustard

the soil and discourage weeds.

Wyoming winters are cold enough to kill many common cover crops; however, some vetches, clovers, and grains are hardy enough to survive winter in some parts of the state. Do your research to avoid any surprises if counting on winter to terminate your cover crop.

Getting Ready for Growing Season

Some soil prep work will be required in early spring to get the area that was under a cover crop ready for this year's garden crops. When plants die, they become a valuable mulch that continue to protect the soil and discourage weeds until the next spring when time to plant again.

If transplanting, consider leaving the cover crop mulch in place and

simply clearing a small area for each transplant. This mulch will continue to suppress weeds and conserve water throughout the summer.

If a smooth seedbed is needed, the cover crop residue can be incorporated with a rototiller several weeks before planting. Tilling the soil will increase weed seed germination and remove your protective mulch. Be sure to add a thick layer of straw or leaves after planting to protect the soil, suppress weeds, and conserve water. Leave the straw mulch in flakes or use heavier mulch like wood chips in windy regions of the state.

Other Methods Grow Benefits

There are other ways to benefit from cover crops in the garden that

require more precise planting, termination dates, methods, and more careful management. For example, planting a cover crop in the summer after early spring crops like **lettuce** have been harvested, but before fall crops like **kale** and **spinach** are planted, reduces weed pressure and adds nutrients.

Fall cover crops can be planted in garden beds after summer harvest and allowed to grow until they are winter-killed (just don't let them go to seed!). Annual cover crops like wheat or barley between garden rows can reduce weeds and protect the soil. Regular mowing helps keep the growth short and thick.

Another method, called relay seeding or inter-cropping, establishes cover crops before garden crops are

harvested. This requires a careful choice of species and timing of planting but gives the advantage of establishing a cover crop early enough in the fall to allow good growth before a killing frost.

For example, a cover crop is planted in between rows of a well-established garden crop, and once the crop is harvested, the cover crop will continue to grow.

Cover crops can add nutrients and organic matter to soil, improve tilth and workability, suppress weeds, break disease cycles, and feed soil microbes. Start with a small section and try a few different seed mixes to find one that does well in your region. And remember, don't let them go to seed!

For more information

The following bulletins provide more information about using cover crops in a garden, including recommended seeding rates. For links to these bulletins and other resources:

- <http://bit.ly/drcaitlin>
- <http://bit.ly/soilsandfertilization>, *Methods for Successful Cover Crop Management in Your Home Garden*. Washington State University Extension. FS119E. February 2014.
- <http://bit.ly/morecovercrops>, *Cover Crops for Utah Gardens*. Utah State University Extension. June 2010.

Cover crops, trap crops, vegetable crops – Caitlin Youngquist knows her peas and cukes. She is a University of Wyoming Extension educator based in Washakie County and serving northwest Wyoming. Contact her at (307) 347-3431 or at cyoungqu@uwyo.edu.

Table 1: Here is a simple way to get started creating your first garden cover crop mix. Simply choose one species from each column and plant at the rates specified. Document your experience, take notes, and adjust the seeding rates for future plantings. Additional species like buckwheat or mustard can be added as you gain more experience with cover crops.

COLUMN A		COLUMN B	
Grains	Seeding rate per 100 sq ft	Legumes	Seeding rate per 100 sq ft
Oats	¼ lb	Field peas	¼ lb
Wheat	¼ lb	Crimson clover	½ lb
Barley	¼ lb	Vetch	½ lb