Choosing Cover Crops in Urban Farms and Gardens

A guide to common cover crops and their application in urban areas

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There are many types of cover crops to choose from, all with different uses. Use the guidance below to choose cover crops that meet your growing needs and add them to your growing practices.

Planting Cover Crops

Plant cover crop seeds into soil after removing or turning in old crops and weeds. It is best to plant seeds just before a rain so they can germinate quickly. Spread seeds evenly in the field, based on the suggestions for seeding rate below. After spreading, rake seeds gently to cover with soil. In small areas, spread seeds by hand. A small push seeder tool is useful for larger areas, and can assure seeds are covered. If predators are a common problem, you can use a light row cover to protect plants until they are four to five inches tall.

Purchase cover crop seed from many seed retailers, online or at local farmer cooperatives. The amounts sold are often more than needed. Consider working with other growers to share the seed and the cost.

Selecting Cover Crops

This table provides information on cover crops good for urban farms and lists their benefits. This chart does not have all the cover crop types but provides urban growers with a good place to start.

A note on companion planting: Plant cover crops by themselves or with another cover crop. Sometimes, two crops together work better than one. A powerful combination includes a legume and grain/cereal. The grain/cereal provides organic matter and prevents erosion, while a legume makes nitrogen on the roots and attracts pollinators when allowed to bloom.

Table 1 Benefits of Various Cover Crops **(continued on next page)**

Cover crop	Benefits	When to use	Seeding	Considerations
Buckwheat *Broadleaf grain* 	• Quick growth • Prevents weed growth • Attracts pollinators • Builds soil	Warm season – plant mid spring to early fall Buckwheat is a fast grower. Grow buckwheat as a cover crop when there is a 4-6 week period in the summer, in-between early and late crops. This grain that can also be used in cooking and baking.	• 25 seeds per square foot • ½ ounce per 100 square foot	Buckwheat grows in about six weeks. It gives the soil nitrogen in between crops. Be sure to cut it before it makes seeds (after flowering) or it can be a problem the next year.

For additional information, visit www.canr.msu.edu/outreach

Cover crop	Benefits	When to use	Seeding	Considerations
Winter Rye *Grass* 	• Reduces erosion • Reduces weed growth • Builds soil • Survives winter	*Cool season* – plant mid to late fall or early spring when the ground is still frozen (frost-seeding) Plant winter rye at the end of the growing season, just before winter. Winter rye survives through winter and prevents erosion throughout.	• 16 seeds per square foot • 4 ounces per 100 square foot	Cut and turn in rye at least two weeks before crops are planted. Do not plant where small seeded crops will follow, such as carrots.
Oats *Cereal* 	• Reduces erosion • Reduces weed growth • Breaks up heavy soil	*Cool and warm season* – plant mid spring through late summer Oats grow quickly and die with frost. The stems will provide mulch during winter and break down in early spring. Consider planting with a legume to maximize benefits.	• 16 seeds per 1 square foot • 3 ounce per 100 square foot • Reduce seeding rate by 50% if planted with a legume	Oats grow best in well-drained soils, so are not recommended for heavy clay or compacted soils. Areas that flood easily are usually heavy soils and not good for oats.
Mustard *Brassica* 	• Builds soil • Reduces weed growth • Reduces soil borne pests • Reduces erosion	*Cool season* – plant spring or fall Mustard grows quickly, adds organic matter and helps to crowd out weeds Mustard also has potential to reduce soil borne pests.	• 30 seeds/square foot • 1 ounce/100 square foot.	Do not plant mustard where you will plant other brassicas, as a flea-beetle could become a problem.
Daikon Radish *Brassica* 	• Penetrates soil • Reduces nitrogen runoff • Reduces weed growth	*Cool season* – plant late summer through early fall Daikon Radish has deep, large roots that drill into tight soil. It leaves channels for water to drain. Radish is a good choice for gardeners using reduced tillage.	• 4 seeds/square foot • 2 ounce/100 square foot	Do not plant radish where you plan to plant other brassicas, as a flea-beetle problem could develop. Mix with a grass/cereal to support erosion control.

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Legumes are truly valuable when selecting for cover crops. In addition to other cover crop benefits, nodules on the roots of legumes work with bacteria in the soil to provide nitrogen. Consider using an inoculant when planting a legume cover crop. This is a black powder that contains a bacteria that improves legumes' ability to add nitrogen. Purchase inoculant where you buy the legume seed and mix with seeds by hand before sowing. Ask which inoculum is appropriate for the seed you purchase.

Cover crop	Benefits	When to use	Seeding	Considerations
Red Clover** *Legume* 	• Builds soil organic matter • Adds nitrogen • Attracts pollinators • Reduces erosion	*Cool season* – plant late summer through fall Use red clover as a long-term ground cover along garden borders. Red clover adds nitrogen to the soil. Red clover is a bi-annual and will bloom in the second year.	• 1 square foot = 16 seeds • 1 ounce/100 square foot = 1 ounce • If planted with a grass/cereal, reduce seed rate by 25%	Treat legumes with an *inoculant* to maximize nitrogen-fixing potential. Red clover may overwinter so may be more difficult to kill.
Crimson Clover** *Legume* 	• Builds soil • Adds nitrogen • Attracts pollinators • Reduces erosion	*Warm season* – plant late spring through early fall Crimson Clover is an annual and a good single season option for nitrogen improvements and a good choice to plant under mature plants. Crimson clover usually *winterkill*s.	• 16 seeds/square foot • 1 ounce/100 square foot • Reduce seed by 25% if planted with a grass/cereal	Treat legumes with an *inoculant* to improve nitrogen contribution.
Hairy Vetch** *Legume* 	• Adds nitrogen • Reduces erosion • Attracts pollinators • Reduces weed growth	*Warm Season* – plant late spring through early fall Hairy vetch can add a nitrogen boost; this is good to grow prior to a heavy nitrogen using crop, like corn.	• 20 seeds/square foot. • 4 ounce/100 square foot • Reduce seeding rate by 25% if planted with a grass/cereal.	Treat legumes with an *inoculan*t to maximize nitrogen-fixing potential. Hairy vetch generally survives winter

For more information and additional resources on adding cover crops to your growing practices, visit the MSU Extension Cover Crops Website at https://www.canr.msu.edu/cover_crops/.