



DOWLING COMMUNITY GARDEN

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Using Cover Crops

Cover crops, also known as green manures, are any green plant tilled back into the soil to improve soil fertility. Cover crops can add nitrogen and organic matter to the soil, catch nutrients and moisture that have leached deep into the soil, loosen compacted soil and reduce soil erosion over winter. They also attract beneficial insects to the garden. When converted to a mulch, the residue suppresses weeds, increases organic matter content, reduces water loss from the soil and acts as a slow release fertilizer.

Many other plants may be grown as cover crops: clovers, annual ryegrass, winter wheat, peas, beans, soybeans. The varieties discussed here are well-suited to Minnesota's climate. You may grow one variety, or plant in beneficial mixtures to suit your growing conditions.

References

- Sustainable Production of Fresh Market Tomatoes and Other Summer Vegetables With Organic Mulches, p. 3-5, 20, Farmer's Bulletin No. 2279, U.S. Department of Agriculture, 1997.
- Raymond, Dick. *Garden Way's Joy of Gardening*. pp 178-181, Troy, NY: Garden Way Inc., 1982.
- Savonen, Carol. *Buckwheat – Grow buckwheat for good summer cover crop* [online] <http://eesc.orst.edu/agcomwebfile/garden/soil/buckwheat.html> [2003, July 3].
- Mangan, Frank. *Hairy Vetch as a Cover Crop* [online] http://www.umassvegetable.org/soil_crop_pest_mgt/soil_nutrient_mgt/hairy_vetch_cover_crop.html [2003, July 3]
- Mackenzie, Jill. *Green Manure Cover Crops for Minnesota* [online] <http://www.extension.umn.edu/projects/yardandgarden/ygbriefs/H234greenman.html> [2003, July 7]

Useful web sites

Cover crops for Minnesota:
<http://www.extension.umn.edu/projects/yardandgarden/ygbriefs/H234greenman.html>

Winter Rye

Winter rye is the most commonly grown non-legume cover crop. It does not add nitrogen to the soil like legumes, but helps feed bacteria and other soil organisms (which process nitrogen and other nutrients and return them to the soil so your vegetables can use them). Since winter rye breaks down more slowly than legumes (due to its higher carbon content), it adds more organic matter to the soil. Winter rye grows well in fall and will over-winter, helping prevent winter soil erosion and aiding spring weed suppression.

How to Grow Winter rye can be planted in fall, at least 2-3 weeks before the first frost. Sow seed at the rate of 4 ounces per 100 square feet. It will over-winter and resume growing in spring. Till it into the soil at least 30 days before you plan to sow seed or transplant.

Buckwheat

Buckwheat is a fast-growing, warm-season, broad-leafed annual which can smother weeds, protect the soil surface and provide habitat for pollinating and other beneficial insects. It is a good nectar source for bees. Buckwheat seed can germinate within days of planting. Not requiring much water and tolerating poor fertility, buckwheat will grow in less-than-ideal places in your garden, but it does not like shade. Since buckwheat is a succulent, it decomposes rapidly and improves short-term soil tilth and better prepares garden beds for fall crops. It is efficient at taking up phosphorus from the soil and storing it in its tissues.

How to Grow Plant buckwheat in spring after last frost, or summer. Scatter seed over your garden bed at a rate of about three ounces per 100 square feet. Till in the buckwheat several weeks after it flowers, but before seeds form, about 30-40 days.

Hairy Vetch

Hairy vetch is a good cover crop for Minnesota gardeners: it's hardy enough to survive most winters and can add significant amounts of nitrogen to the soil if allowed to grow long enough. Hairy vetch is a legume, which means that bacteria that live in the roots of the plant take nitrogen from the atmosphere and make it available to the plant.

How to Grow Hairy vetch may be sown in spring or fall; vetch planted in late August or early September will over-winter in most years and continue growing until you're ready to plant in spring. Sow seed at the rate of 4 ounces per 100 square feet. Allow the vetch to grow until mid May or later to boost nitrogen levels in soil. When plants are about 12" tall, cut the vetch down or pull it out by the roots and spread it over the bed, leaving the residue in place. Push aside the mulch residue to transplant your summer crops. Other cover crops may be combined with hairy vetch, such as winter rye, crimson clover or buckwheat.