

Cover Crops in Iowa: Glossary

Allelopathy [uh-lee-'lop-uh-thee]: Process by which a plant releases chemicals (allelochemicals) into the soil that inhibit the growth or development of neighboring plants. Allelochemicals are released into soil via roots or decomposing residues.

Biomass: The amount of living material that a plant or animal has accumulated. High biomass cover crops, such as cereal rye, grow bigger than low biomass cover crops, such as red clover.



Brassica: The Brassica genus contains species of crops grown for their oil, seeds, forage, or food (roots, stems, leaves, buds and flowers). Members of the Brassica genus include: rapeseed (canola, pictured at left), mustards, cabbage, turnip, kale, collards, cauliflower and broccoli.

Cereal rye: A winter-hardy small grain that is closely related to wheat. The scientific name for this plant is *Secale cereale*. (Also known as rye and winter rye.) This plant is often confused with ryegrass, however, they are not the same.

Conservation tillage: A tillage practice that retains at least 30 percent residue cover from the previous crop. Strip-tillage and no-tillage are examples of conservation tillage.



Cover crop: A crop seeded with the purpose of protecting or improving soil health. Cover crops are normally planted without intent to directly harvest and are usually grown outside of the regular cash crop growing season.

Green manure: A cover crop that has been killed and incorporated into the soil. Green manures are typically used to enhance soil nutrients and increase soil organic matter.

Microbial biomass: The amount of living microbes in soil (this includes bacteria, fungi, protists, nematodes, and algae). Higher microbial biomass means more rapid decomposition of plant residues and soil organic matter, and more rapid release of plant-available nutrients, in comparison to soil with lower microbial biomass.

No-tillage: A conservation tillage practice that leaves most of the soil in a field continuously undisturbed, excluding seed furrows and fertilizer bands. This system is considered no-tillage when tillage is avoided every year without exception. No-tillage is also known as “zero-till” and “never-till.”





Radish: A member of the brassica genus that has a large taproot which is used to ease soil compaction near the upper soil layers. There are several commercially marketed cultivars under various trade names; however generic radish seed performs just as well. (Also known as oilseed radish or daikon radish.)

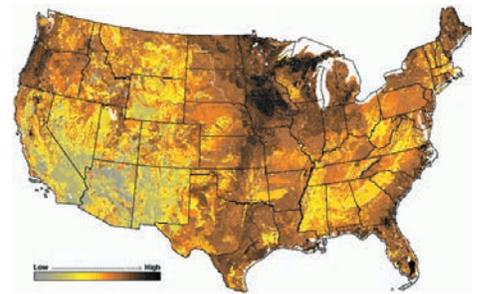
Runoff: The volume of water running over the soil surface and potentially carrying soil and nutrients with it.



Ryegrass: A member of the grass family that is commonly used for turf and grazing. The scientific name for this plant is *Lolium multiflorum*. (Also known as annual ryegrass or Italian ryegrass.) This plant is often confused with cereal rye, however, they are not the same.

Soil bulk density: The dry mass of soil contained in a given volume. Compacted soil has a greater bulk density than non-compacted soil.

Soil organic matter: Any biologically derived material in soil, including living organisms and decaying plant and animal tissue. Organic matter facilitates soil nutrient exchange and soil water holding capacity. Soil organic matter is considered to be the single most important measure of overall soil quality.



Soil Organic Matter in the USA



Strip-tillage: A conservation tillage practice that creates narrow tilled strips throughout the field in which crop rows are planted and fertilizer is applied, leaving the rest of the field undisturbed.

Water infiltration: The rate and volume of water flowing into the soil profile.

Winter rye: See cereal rye.



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For more information on cover crops, visit:

- Practical Farmers of Iowa: www.practicalfarmers.org
- Iowa Learning Farms: www.extension.iastate.edu/ilf/
- Iowa Department of Agriculture and Land Stewardship: www.cleanwateriowa.org
- Midwest Cover Crop Council: www.mccc.msu.edu

Iowa Learning Farms partners: Iowa Department of Agriculture and Land Stewardship, Iowa Department of Natural Resources (USEPA Section 319), Natural Resources Conservation Service, Conservation Districts of Iowa, Iowa State University Extension and Outreach, Leopold Center for Sustainable Agriculture, Iowa Farm Bureau Federation, Iowa Water Center and Practical Farmers of Iowa.