

CEREAL RYE

COVER CROP FACT SHEET FOR IOWA

Cereal rye (*Secale cereale*) is a cool-season/winter annual grass that is the most popular cover crop for Iowa farmers due to its ability to suppress weeds, fight disease, establish in the fall, and help reduce soil compaction. (Photo by Lynn Betts)



Identifying Features

- » Hairs on leaf sheath
- » Small, stubby auricles without hairs
- » Ligule is short and flat

Cultural Traits

- » Cool-season/winter annual grass
- » Minimum germination soil temperature: 34° F
- » Cold tolerance temperature: -30° F
- » Seeding date: Mid August to Late October*

Planting Information*

- » **Drill/Plant** at ¾ - 1½ inches (45 lbs./acre PLS**)
- » **Broadcast** (50 lbs./acre PLS)
- » **Aerial** (55 lbs./acre PLS)

*Planting information from Midwest Cover Crop Council (midwestcovercrops.org). Refer to local NRCS office recommendations (Iowa Field Office Technical Guide, Section 4, 340 Cover Crop) for seeding dates and rates pertinent to location specific financial assistance program requirements.

**Pure Live Seed

Additional planting information:

- » ~18,200 seeds/lb. (1 bushel = 56 pounds)
- » If grazing or weed suppression is desired, increase seeding rate.
- » Broadcasting without incorporation is usually less dependable than drilling or broadcasting with incorporation.
- » Use a low seeding rate for areas with sandy soil or that are prone to dry periods in early spring.



Cereal Rye Seed



Seedling



Mature



Cover crop grass growth comparison

C:N (Carbon:Nitrogen) Ratios

- » Rye cover crop (Vegetative) 26:1
- » Rye cover crop (Anthesis) 37:1
- » Rye straw 82:1

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Performance

Dry matter = 2,500 - 6,000 lbs./acre per year
(Biomass quantity is dependent on planting and termination dates and precipitation.)

Performance Ratings

» Cash crop interseed (<i>early vegetative</i>)	Good
» Cash crop overseed (<i>late seed fill</i>)	Excellent
» Grazing quality	Excellent
» Mechanical forage harvest	Very good
» Nitrogen fixer	NA
» Nitrogen scavenger	Excellent
» Weed suppression	Excellent
» Compaction fighter	Very good
» Erosion control	Excellent
» Lasting residue	Excellent
» Quick grower	Excellent
» Drought tolerance	Very good
» Low fertility tolerance	Excellent
» Shade tolerance	Very good

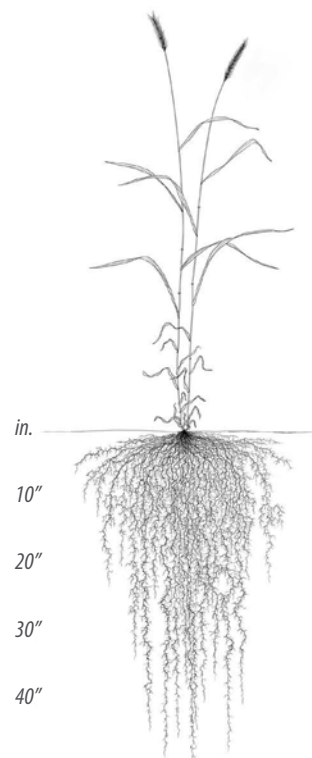
Additional Considerations

- » Cereal rye could increase the risk of black cutworm and armyworm; risk of green bridge increasing pythium seedling disease; and is a host for penetrans root lesion nematode.
- » Time cover crop **termination** based on goals and experience level. To reduce potential negative impacts on cash crops, consider terminating earlier in the season when conditions are dry or when

green bridge or nitrogen tie-up are a concern. For crop insurance compliance, follow NRCS cover crop termination guidelines.

- » Early season nitrogen applications to corn can help reduce the effects of nitrogen tie-up by the cover crops.

Cereal Rye Plant and Root Structure



Drawing provided by Conservation Cropping Systems Initiative (ccsin.org)

This fact sheet is a collaborative effort of USDA's Natural Resources Conservation Service (NRCS) and Iowa State University Extension and Outreach to provide cover crop options and information for Iowa landowners.