Reducing Soil Erosion with Rye Cover Crops

PROJECT SITE
Iowa State University
Boyd Research Farm
Boone, IA

ROW CROPS
Rotation:
Corn silage/soybean
No-till management
Year Established:
2001

RYE COVER CROP
Seeding Method:
Grain drill after harvest
Termination:
Glyphosate

COVER CROP TIMING
With adequate moisture for germination, rye grows rapidly in the fall, withstands the winter frost, and resumes growth in the spring. For best results, terminate 7-10 days before planting in the spring to reduce planting problems.

47% MORE water infiltrated &
TIME TO FIRST RUNOFF DOUBLED
with cereal rye cover crop*

*Measurements taken in October, in-field, with 2.5” simulated rainfall over 60 minutes. Results are consistent with previous data on erosion and cover crops collected in the spring.

68% LESS SEDIMENT IN RUNOFF WATER
with cereal rye cover crop*

Reduced erosion is a huge benefit of cereal rye cover crops!

Additional benefits of cover crops include:
- Maintain/build organic matter
- Increased earthworm numbers
- Improved soil health
- Nutrient retention (N & P)
- Improved water quality
- Grazing/forage value

Plots with rye cover crops experienced LESS SURFACE RUNOFF + GREATER INfiltrATION after 60 minutes of rainfall.

Cereal rye helps to reduce water flow across the soil surface, anchors crop residue in place, and the cover crop roots bind soil in place.

This publication was produced by Iowa Learning Farms and is based upon research conducted by USDA-ARS, National Laboratory for Agriculture and the Environment, Ames, IA (T. Korucu, M. J. Shipitalo, and T. C. Kaspar).

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Small grain cover crops provide living cover during the fallow months of corn and soybean production. Winter small grains (rye, wheat, and triticale) are usually the most effective cover crops in Iowa because they overwinter and grow again in the spring.

5 replications and both phases of corn silage-soy rotation each year

With proper planning and management, cover crops can be SUCCESSFULLY INTEGRATED into Iowa’s cropping systems!

This publication focuses on cereal rye.