

Water Quality Enhancement Activity– WQL10 – Plant a cover crop that will scavenge residual nitrogen



Enhancement Description

Plant a cover crop that will scavenge nitrogen left in the soil after the harvest of a previous crop.

Suitable cover crops include those with at least a “Very Good” rating for scavenging nitrogen as documented in “*Managing Cover Crops Profitably, 3rd Edition*” (Sarrantonio, 1998), Chart 2

Performance & Roles, pg 67. Examples include cereal rye, barley, forage radish and sorghum sudan.

Land Use Applicability

This enhancement is applicable on cropland.

Benefits

Planting an annual cover crop to scavenge residual nutrients from cropland after the harvest of a previous crop effectively utilizes residual nutrient resources to supply following crops with nutrients required to efficiently produce food, forage, fiber, and cover while minimizing environmental degradation.

Criteria for Planting a Cover Crop That Will Scavenge Residual Nitrogen:

Implementation of this enhancement requires:

- 1) The cover crop selected shall have the growth rate and rooting depth required to scavenge excess nitrogen from the root zone of the previous crop. Suitable cover crops include those with at least a “Very Good” rating for scavenging nitrogen as documented in *Managing Cover Crops Profitably, 3rd Edition, Chart 2 Performance & Roles, pg 67*. Examples include cereal rye, barley, forage radish and sorghum sudan.
- 2) Timing of planting and seeding rates for cover crops shall follow the recommendations in the respective NRCS Field Office Technical Guide (FOTG).
- 3) The producer must have a current soil test (no more than 3 years old).
- 4) Nitrogen application rates for the crop following the cover crop must be reduced by at least 15% from the “Land Grant University (LGU) recommendations to account for the recycling of N by the cover crop.
- 5) The producer shall not increase soil surface disturbance over existing benchmark conditions.



United States Department of Agriculture
Natural Resources Conservation Service

Documentation Requirements

Documentation for each Treatment area (field) and year of this enhancement describing these items:

- a. Cover crop species planted
 - b. Cover crop planting date
 - c. Cover crop seeding rate (bu/ac)
 - d. Annual crop planted
 - e. Nitrogen application rates/amounts for the annual crop
 - f. Treatment acres
- 2) A map showing where the activities are applied.



Water Quality Enhancement Activity – WQL10 – *Plant an Annual Grass-Type Cover crop that will Scavenge Residual Nitrogen*

Reference:

- ***340 – Cover Crop***
- ***590 – Nutrient Management***

The following annual grass-type cover crops have the growth rate and rooting depth required to scavenge excess nitrogen from the root zone of the previous crop:

Annual Ryegrass

Barley

Cereal Rye

Oats

Sorghum-Sudangrass

Wheat



Species	Seeding Rate	Seeding Depth (inches)	Seeding Date	Comments
Annual Ryegrass	15 – 20 lbs/ac	¼ to ½	June 1-July 1 OR Aug 15 – Sept 15	Easily established. Good for use as overseeding row crop. May be seeded after harvest.
Barley	1.5 – 2 bu/ac	½ to 1 ½	Aug 15 - Sept 15	May be overseeded into growing crop or seeded after harvest.
Oats	1 – 2 bu/ac	½ to 1 ½	Aug 15 - Sept 15.	Can be seeded on rough plowed land (usually before Sept. 1) and will not need plowing the following spring
Cereal Rye	1 – 1 ¼ bu/ac	½ to 1 ½	Aug 15 - Sept 15	Easily established. Rapid growth in fall and spring. Has an allelopathic property.
Cereal Rye	¼ - ½ bu/ac	½ to 1 ½	Aug 15 - Sept 15	Use this rate only for cropland going into sugarbeets the following spring
Winter Wheat	1- 1 ½ bu/ac	½ to 1 ½	Aug 15 - Sept 15	Advantageous if site is seeded after Sept. 1 or under dry soil conditions.
Sorghum – Sudan	25 – 30 lbs/ac	½ to 1	May 15 - July 1	Advantageous to use on well drained and droughty sites.

Please Note:

1. Care is advised when determining the amount of N that will be available to the crop following the grass cover crop. The per acre yield must be calculated; the percent N in plants just before death must be figured; and the percentage that can become available to the upcoming crop must be estimated (Yield * %N * % mineralized = available N).
2. Per acre yield in Minnesota may not be substantial depending on planting date and time of cover crop death.
3. Assume that 50% of the N in the cover crop will be available to the upcoming crop in a plow down or incorporation system and 25% will be available in a system where the cover crop residues are left on the soil surface.

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