United States Department of Agriculture
Natural Resources Conservation Service

2016 – 1
2017 – 1 Renewal

Water Quality Enhancement Activity – WQL07 – Split nitrogen applications, 50% after crop emergence or pasture green up

Enhancement Description
Apply no more than 50% of total crop nitrogen needs within 30 days prior to planting or in the case of pasture or hay after green up of the dormant grasses. Apply the remaining 50% or more of the total nitrogen needs after crop emergence or pasture green up.

Land Use Applicability
Cropland, Pastureland

Benefits
Timing of nitrogen application can be used to ensure adequate amounts of N are available during critical growth stages. Application rates can also be adjusted based on crop forage conditions to refine yield goals. Split application of 50% or more of the total N needs allows for more efficient nutrient utilization resulting in a reduced potential for N loss through leaching and/or greenhouse gases to the environment (e.g. nitrous oxide).

Conditions Where Enhancement Applies
This enhancement applies to all crop or pasture land use acres.

Criteria
Implementation of this enhancement requires:
1. Regardless of form or application method (fertilizer, manure or any other organic byproducts), apply no more than 50% of crop N needs within 30 days prior to planting and 50% or more of the N needs after crop emergence or in the case of pasture or hay after green up of the dormant grasses.
2. Post emergence N application rates can be reduced based on crop scouting reports that would suggest lower yield potential. Scouting reports shall be provided.
3. Participant must have annual manure analysis (if organic nutrient sources are used)
4. Nutrient application rates must be within the "Land Grant University (LGU) recommendations based on soil testing and established yield goals and considering all nutrient sources.
5. Minimize soil surface disturbance to stay within the site's residue management goals.

Adoption Requirements
This enhancement is considered adopted when all of the relevant criteria above have been implemented on the land use acre.

Documentation Requirements

1. Written documentation for each treatment area (field) and year of this enhancement describing these items:
   a. Acres,
   b. Planned crop,
   c. Planting date and crop planted,
   d. Dates of crop emergence,
   e. Annual manure analysis results (if organic nutrient sources are used),
   f. Crop yields (both yield goals and measured yield),
   g. Nutrient application rates/amounts and application dates for each treatment area, and
   h. Scouting reports.
2. A map showing where the activities are applied.

Note: In lieu of documenting each individual item listed in the Documentation Requirements, a Certified Crop Advisor plan that contains each of the items may be substituted.

References

Follett, R.F. 2001. Nitrogen transformation and transport processes. *In* Nitrogen in the environment; sources, problems, and solutions, (eds.) R.F. Follett and J. Hatfield, pp. 17-44.

International Plant Nutrition Institute (IPNI). 2012. 4R Plant Nutrition – A Manual for Improving the Management of Plant Nutrition (North American Version). IPNI, Norcross, GA.

Randall, G., J.A. Delgado, J.S. Schepers. 2008. Nitrogen management to protect water resources. p. 911-945. In Schepers and Raun (eds) Nitrogen in Agricultural Systems. SSSA Monograph. 49. Madison, WI.

Operations & Maintenance, Conservation Measures, and Client Acknowledgement

Operation and Maintenance
Operation: Maintenance:
Conservation Measures
Actions that must be implemented by the landowner/manager during enhancement implementation:
Client's Acknowledgement Statement
The Client acknowledges that: a. They have received a copy of the enhancement and understand the contents and requirements. b. It shall be the responsibility of the client to obtain all necessary permits and/or rights, and to comply with all ordinances and laws pertaining to the application of this enhancement. **Planner:** _____ **Date:** **Client:** _____ **Date:**