

Vermont State Supplement, Water Quality Enhancement Activity – WQL16 –Use of legume cover crops as a nitrogen source

Vermont Supplemental Information in Blue Font

Enhancement Description

This enhancement is for the use of legume cover crops as a primary source of nitrogen in a cropping system. Use of legume cover crops is applicable to conventional, specialty and organic crop production systems.

Land Use Applicability

Cropland.

Benefits

Approximately 35,000 cu. ft. natural gas is required to produce one ton of nitrogen fertilizer. Legume cover crops can provide 50 to 100 lbs. of plant available nitrogen per acre to reduce off-farm energy requirements.

Criteria

1. Plant and manage legume cover crops prior to all field or specialty crops raised that require the use of commercial nitrogen.
2. Estimate nitrogen credits from the leguminous crop. The legume cover crop must be selected and managed to supply a significant amount of N for the following crop. Nitrogen credit estimate should consider:
 - a. The amount of biomass produced (plant height and maturity)
 - b. The nutrient composition of the cover crop (for example, clover vs. vetch)
 - c. The decomposition rate of the cover crop during the cash crop growing season based on incorporation of the residue or being left on the soil surface after planting. Note: An example procedure is outlined in “**Managing Cover Crops Profitably, 3rd Edition**” (Sarrantonio, 1998)
3. The University of Vermont has established the N credits for previous legume crops. This is found on Table 5 of ‘Nutrient Recommendations for Field Crops in Vermont’
http://pss.uvm.edu/vtcrops/articles/VT_Nutrient_Rec_Field_Crops_1390.pdf
4. Base additional nitrogen application rates for crops following the cover crop on guidelines (see #3, above) of the University of Vermont. Reduce nitrogen application rates by at least the amount credited in Table 5 of the [Recommendations](#) to account for the nitrogen available from the legume cover crop.

Refer to and follow VT NRCS Nutrient Management (590) standard and VT NRCS Cover Crop (340) standard and associated Job Sheet. Seek assistance from NRCS in proper management.

http://www.vt.nrcs.usda.gov/technical/Conservation_Practices/Index.html

Documentation Requirements

Written documentation for each year of this enhancement describing the following items:

1. A map showing where the enhancement is applied
2. Type of legume cover crop planted
3. Calculations for estimating available nitrogen
4. Application rates of additional nitrogen by field
5. Realistic yield goals for field or specialty crop grown