

Nutrient Management (590) Reference List

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[Nutrient Management \(590\)](#) Conservation Practice Standard. October 2013. USDA-NRCS.

The technical standard for nutrient management for Iowa NRCS. Outlines the nutrient management process and specifies criteria to meet the standard.

Soil Sampling

[CROP 3108: Take a Good Soil Sample to Help Make Good Fertilization Decisions](#). Iowa State University Extension, December 2016. Replaces PM 287 and NCMR 348.

Provides step-by-step soil sampling guidance. For Iowa certified soil labs, see the Iowa Soil Testing Laboratory Certification Program, Iowa Department of Agriculture and Land Stewardship's [Commercial Feed & Fertilizer Bureau](#) website. Also, see [Soil Sample Information Sheet for Field Crops](#). July 2014. Iowa State University Extension.

[PM 1310 Interpretations of Soil Test Results](#). March 2013. Iowa State University Extension.

4Rs of Nutrient Management

[PM 1688: A General Guide for Crop Nutrient and Limestone Recommendations in Iowa](#). October 2013. Iowa State University Extension and Outreach.

Provides recommendations for P and K for corn and soybeans in tables 3 and 4 and two-year recommendations for a CS rotation in Table 5. Other crops provided as well as liming recs. Table 2 provides removal rates.

[CROP 3073: Nitrogen Use in Iowa Corn Production](#). May 2015. Iowa State University Extension and Outreach.

Good overview of nitrogen issues for corn. Guidance for MRTN for southeast Iowa. Corn following alfalfa recommendations.

[PM 1714: Nitrogen Fertilizer Recommendations for Corn in Iowa](#). May 1997. Iowa State University Extension.

This document provides standard nitrogen rate ranges as well as a methodology for in-season adaptive management using the late Spring soil nitrate test. See CROP 3073 for updated recommendations.

[PM 2015: Concepts and rationale for regional nitrogen rate guidelines for corn](#). April 2006. Iowa State University Extension.

Provides the theory behind the Economic Optimum Nitrogen Rate (EONR). Implemented as the [Corn Nitrogen Rate Calculator](#).

[PM 2026: Sensing Nitrogen Stress in Corn](#). April 2011. Iowa State University Extension.

Provides information on in-season testing methods to adjust N fertilization. Updated in 2011.

[PM 1584: Cornstalk Testing to Evaluate Nitrogen Management](#). August 1996. Iowa State University Extension.

Additionally, see sample lab forms at: <http://www.agron.iastate.edu/soiltesting/CSN.pdf> and additional interpretation guidance is available at: <http://www.extension.iastate.edu/CropNews/2010/0914sawyer.htm>. [Video](#) available.

[PM 569: Warm-Season Grasses for Hay and Pasture](#). October 1994. Iowa State University Extension. Contains guidance on fertility for warm-season grasses.

[PM 869: Fertilizing Pasture](#). June 1997. Iowa State University Extension.

[PM 1268: Establishing Realistic Yields](#). September 2000. Iowa State University Extension.

See additional NRCS guidance in the Nutrient Management (590) conservation practice standard and in *Yield Goal Estimates for Nutrient Management Planning* Nutrient Management Note, January 17, 2012. NRCS website.

[Agronomy Technical Note No. 7: Adaptive Nutrient Management Process](#). May 2013. NRCS

Manure Management

[PM 1558: How to sample manure for nutrient analysis](#). November 2003. Iowa State University Extension.

[PMR 1003: Using manure nutrients for crop production](#). Iowa State University Extension, September 2008

Replaces PM 1811 *Managing Manure Nutrients for Crop Production* (2003). Interprets manure tests.

[PM 3014 How to Interpret your Manure Analysis](#). September 2011. Iowa State University Extension. Provides guidance to take the manure analysis results and determine the nutrient application rates.

Certified Manure Testing. See Minnesota Department of Agriculture's [Manure Testing Laboratory Certification program](#) (MTLCP).

Industrial Biosolids Testing. State Hygienic Laboratory at the UI maintains a [IDNR Laboratory Certification](#) database. Use labs certified for waste water (WW) and/or solid waste or contaminated sites (SW/CS),

Calibration

[PM 1875: Improving the uniformity of anhydrous ammonia application](#). June 2001. Iowa State University Extension.

Provides guidance to properly plumb the applicator equipment. This is done instead of traditional calibration which is dangerous. The document is dated. Other effective manifolds are now available. See John Sawyer article [Anhydrous application and dry soils](#) for more information.

[PM 1941 Calibration and Uniformity of Solid Manure Spreaders](#). July 2004. Iowa State University Extension.

[AE 3601A: Calibrating Liquid Tank Manure Applicators](#). December 2016. Iowa State University Extension. Formerly PM 1948. Also see [AE 3601B: Calibration Worksheet for Liquid Manure Tank Applicators](#)

Resource Concern Risk Assessments

[PM 2021: Data Collection Worksheet for RUSLE2 and Iowa Phosphorous Index](#). November 2006. Iowa State University Extension.

This is an excellent tool to assist in collecting the data needed to run the PI. One major weakness is that it does not guide the user how to collect data and do the math to determine ephemeral and classic gully size and sediment delivery.

[10 Questions about the Phosphorus \(P\) Index in Iowa](#). April 2005. Iowa State University Extension.

[Iowa NRCS Technical Note 25: Iowa Phosphorus Index](#). August 2004. USDA Natural Resources Conservation Service

[Background And Basic Concepts of The Iowa Phosphorus Index](#). June 2005. USDA Natural Resources Conservation Service.

A Support Document to the USDA-NRCS Field Office Technical Note 25

Iowa DNR 113. 2008. [Separation Distances for Land Application of Manure](#). Des Moines, IA.

Iowa DNR. 2003. DNR 117: 3-2003. [High Quality Water Resources](#). Des Moines, IA.

Other NRCS Documents

[Agricultural Waste Characteristics](#) in Part 651 - Agricultural Waste Management Field Handbook, Chapter 4 in the National Engineering Handbook (H_210_NEH_651 - Part 651 - Agricultural Waste Management Field Handbook)

[Agronomy Technical Note No. 3: Precision Nutrient Management Planning](#). February 2010. USDA Natural Resources Conservation Service, February 2010

[Nutrient Management Technical Note No. 6: Nitrogen Efficiency and Management](#). September 2007. USDA Natural Resources Conservation Service, September 2007.

[NRCS National Nutrient & Pest Management Policies, Procedures, and Tools](#)

NRCS national office website.

Title 180, Part 600 [National Planning Procedures Handbook](#)

Provides guidance on how to accomplish the nine steps of conservation planning.

Other Resources

[IMMAG - Iowa Manure Management Action Group](#)

A comprehensive one-stop website for issues dealing with manure and nutrient management.

If you find errors or need more information please contact:

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