4-23-2012

Corn Nitrogen Rate Calculator Update

John E. Sawyer
Iowa State University, jsawyer@iastate.edu

Follow this and additional works at: http://lib.dr.iastate.edu/cropnews

Part of the Agricultural Science Commons, Agriculture Commons, and the Agronomy and Crop Sciences Commons

Recommended Citation

The Iowa State University Digital Repository provides access to Integrated Crop Management News for historical purposes only. Users are hereby notified that the content may be inaccurate, out of date, incomplete and/or may not meet the needs and requirements of the user. Users should make their own assessment of the information and whether it is suitable for their intended purpose. For current information on integrated crop management from Iowa State University Extension and Outreach, please visit https://crops.extension.iastate.edu/.
Corn Nitrogen Rate Calculator Update

Abstract
The Corn Nitrogen Rate Calculator is an online tool that allows determination of nitrogen (N) application rates for corn production and is helpful in determining the effect of fertilizer and corn price on needed rates. The method for calculating suggested N rates is based on a regional (Corn Belt) approach to N rate guidelines. Details on the approach are provided in the regional publication Concepts and Rationale for Regional Nitrogen Rate Guidelines for Corn. This approach and the Corn Nitrogen Rate Calculator are now being used by seven states across the Corn Belt: Iowa, Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin.

Keywords
Agronomy

Disciplines
Agricultural Science | Agriculture | Agronomy and Crop Sciences

This article is available at Iowa State University Digital Repository: http://lib.dr.iastate.edu/cropnews/181
Corn Nitrogen Rate Calculator Update

by John Sawyer, Department of Agronomy

What is the Corn Nitrogen Rate Calculator?
The Corn Nitrogen Rate Calculator is an online tool that allows determination of nitrogen (N) application rates for corn production and is helpful in determining the effect of fertilizer and corn price on needed rates. The method for calculating suggested N rates is based on a regional (Corn Belt) approach to N rate guidelines. Details on the approach are provided in the regional publication Concepts and Rationale for Regional Nitrogen Rate Guidelines for Corn. This approach and the Corn Nitrogen Rate Calculator are now being used by seven states across the Corn Belt: Iowa, Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin.

Nitrogen (N) Response Trials Added
The Iowa N response database in the calculator was recently updated, with response trials added from 2011 research. There are now 214 trials for corn following soybean and 111 trials for corn following corn. Being able to easily update the database with recent data is one of the many advantages to this dynamic database approach for corn N rate guidelines. Having new response trial data allows rapid updating with changing hybrid genetics, rotations and climatic conditions.

With the updated database, calculated N rates have increased slightly from previous years. The table below gives the N rate at the maximum return to N (MRTN) and the profitable N rate range from the updated calculator for several N: corn grain price ratios (price of N fertilizer in $ per lb N divided by the price of corn in $ per bu). You can work with any price of N and corn you wish when running the calculator. Output information includes the N rate at the MRTN, the profitable N rate range, the net return to N application, the percent of maximum yield and the selected N fertilizer product rate and cost.

Nitrogen rates determined from the calculator are directly the total fertilization amounts for each rotation, with no need to further adjust rate for previous crop. That is, for the soybean-corn rotation, there is no need to subtract a "soybean credit" as the rotation effect is already accounted for by the N rate trials that the database is derived from.
Resources for N Rate Decisions

The Corn Nitrogen Rate Calculator Web tool is located at:
http://extension.agron.iastate.edu/soilfertility/nrate.aspx

The regional publication Regional Nitrogen Rate Guidelines for Corn (PM 2015) can be ordered through any ISU county extension and outreach office, from the ISU Extension Online Store at https://store.extension.iastate.edu/, or by calling (515) 294-5247. An electronic copy of the publication is available at www.extension.iastate.edu/Publications/2015.pdf

The ISU Agronomy Extension Soil Fertility website is located at:
http://www.agronext.iastate.edu/soilfertility/

John Sawyer is professor with research and extension responsibilities in soil fertility and nutrient management.

This article was published originally on 4/23/2012. The information contained within the article may or may not be up to date depending on when you are accessing the information.

Links to this material are strongly encouraged. This article may be republished without further permission if it is published as written and includes credit to the author, Integrated Crop Management News and Iowa State University Extension. Prior permission from the author is required if this article is republished in any other manner.