MAXIMUM RETURN TO NITROGEN: ECONOMIC MODEL FOR CORN N RATES

Nitrogen Roundtable
June 2 2016

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Is there a relationship between optimal N rate and yield in corn?
Maximum Return to Nitrogen (MRTN)

- Published in 2006

- Unified framework for N rate recs across the Midwest corn-belt

- Economic model focused on maximizing profitability, not yield
This website provides a process to calculate economic return to N application with different nitrogen and corn prices and to find profitable N rates directly from recent N rate research data. The method used follows a regional approach for determining corn N rate guidelines that is implemented in several Corn Belt states.

START HERE
Choose how you want to calculate N rates, using one set of prices or using multiple prices.

SINGLE PRICE	MULTIPLE PRICE

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http://cnrc.agron.iastate.edu/
MRTN pros and cons

- The maximum return to N (MRTN) accounts for 3 things:
  - ‘Typical’ yield response of corn to N – averaged over years
  - Cost of N fertilizer
  - Price of grain

- MRTN does not account for:
  - N source, placement, timing
  - Weather effects on N mineralization and N losses
  - Previous management history, soil N mineralization potential
  - Soil type and properties (some states are sub-divided)
  - Within-field variability