The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires.

William Arthur Ward

Agricultural Advocacy Group's Perspective

Dr. Howard Brown
Manager of Agronomy Services
GROWMARK, Inc.

Background

- SIU at Carbondale, IL (B.S.)
- Purdue at West Lafayette, IN (M.S.)
- University of Illinois, Urbana, IL (Ph.D.)
- 8 years with farm cooperative in sales
- 10 years as a field sales agronomist with seed
- 12 years as Manager of Agronomy Services, GROWMARK, Inc.

Background

- Past Chair of the International Certified Crop Adviser Board
- Provide technical support and training to over 450 crop specialists in IL, IA, WI, and Ontario

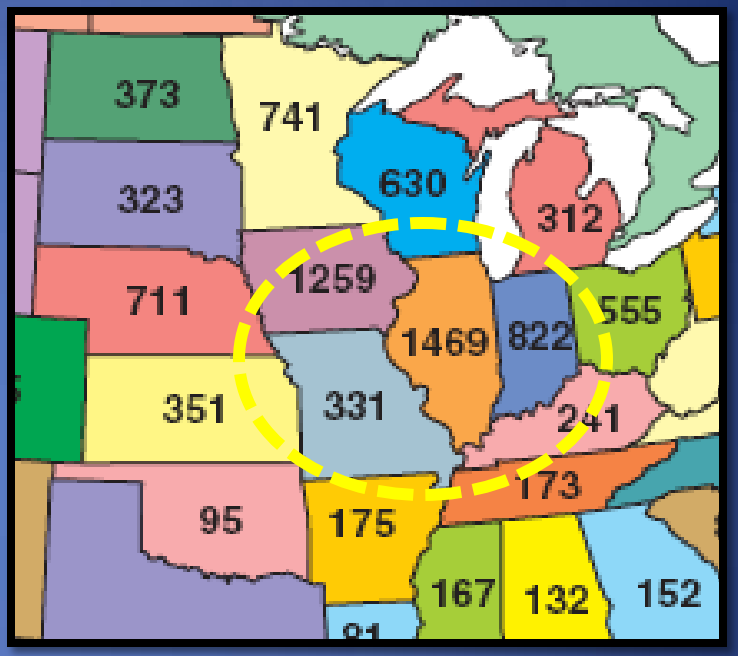
What has been done

- 2004: IL leading state in no-till (6.7 Mil acres)
- 1994-2009: Conservation tillage increased 56%
- 71% of soybean acres use Conservation Tillage
- 1993-2003: 80,000 acres of grass waterways established through CRP and EQIP contracts
- 1997-2002: Farmers planted 35,000+ miles of Conservation Buffers.

Source: Illinois Farm Bureau

Certified Crop Advisers

- Close to 13,000 strong in U.S. and Canada
- Minimum competency standards for crop advising
- Achieved through testing and proof of experience
- Continuing Education Requirement every 2-Year Term: 40 hours of education



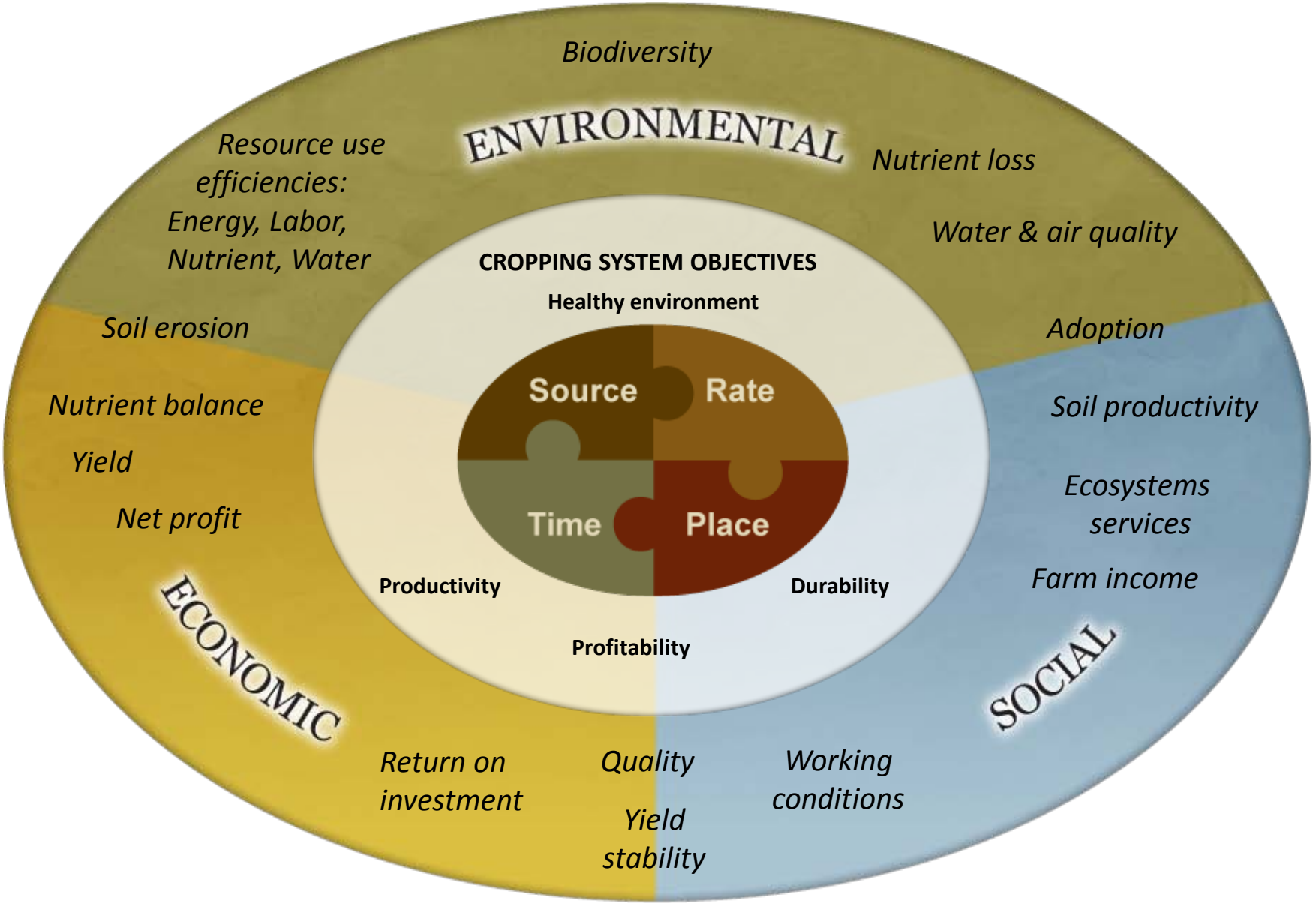
CERTIFIED CROP ADVISER

Certified Crop Advisers

- Every Two Years:
  - 5 hours in Soil and Water Management
  - 5 hours in Nutrient Management
  - 5 hours in Crop Management
  - 5 hours in Pest Management
- 1994 to 2010:
  - 40 hours in Soil and Water Management
  - 40 hours in Nutrient Management
  - 40 hours in Pest Mgt.
  - 40 hours in Crop Mgt.

320 total Certified Educational Units

4R Nutrient Stewardship



IFA Task Force on Fertilizer Best Management Practices. 2009

Four Rs of Nutrient Management

- Right Source: Anhydrous Ammonia, Urea, UAN, Ammonium Sulfate
- Right Place: Knifed-in, Incorporated, Surface Broadcast, Side-dressed
- Right Time: Fall, Early Spring, Pre-tillage, Pre-Plant, Post-Emergence
- Right Rate: MRTN, N-Rate Studies

Nitrogen as an Application

Nitrogen as a Management System, Not an Application

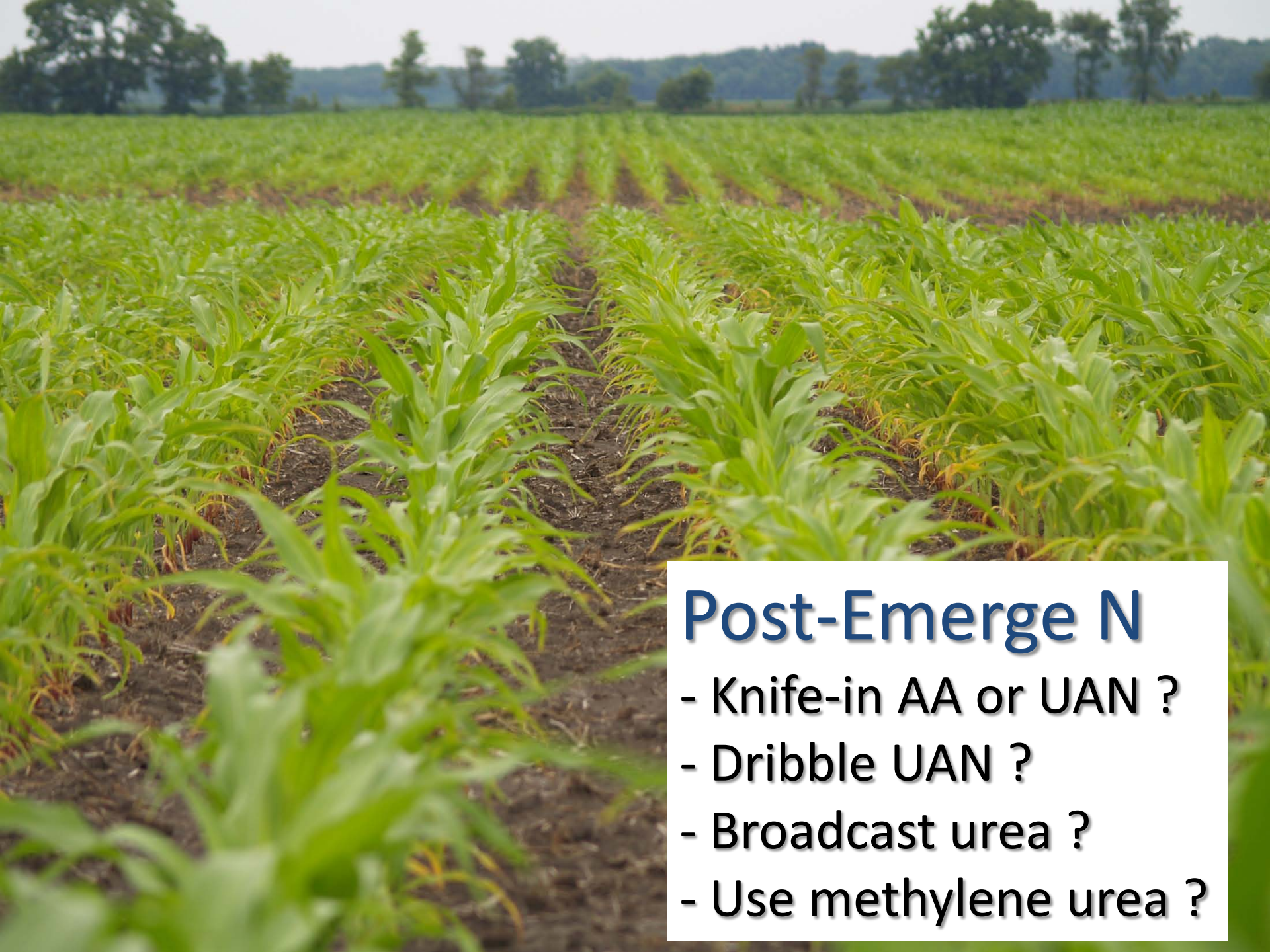
- Consider a “Systems” approach to N Mgt.
- Source
- Rate
- Timing
- Placement

The 4-Rs

Source-Time-Placement

- 50% N applied Fall or early Spring (Anhy. Am.)
- 30% applied pre-tillage or pre-plant (UAN)
- 20% post-applied (Urea w/Agrotain)

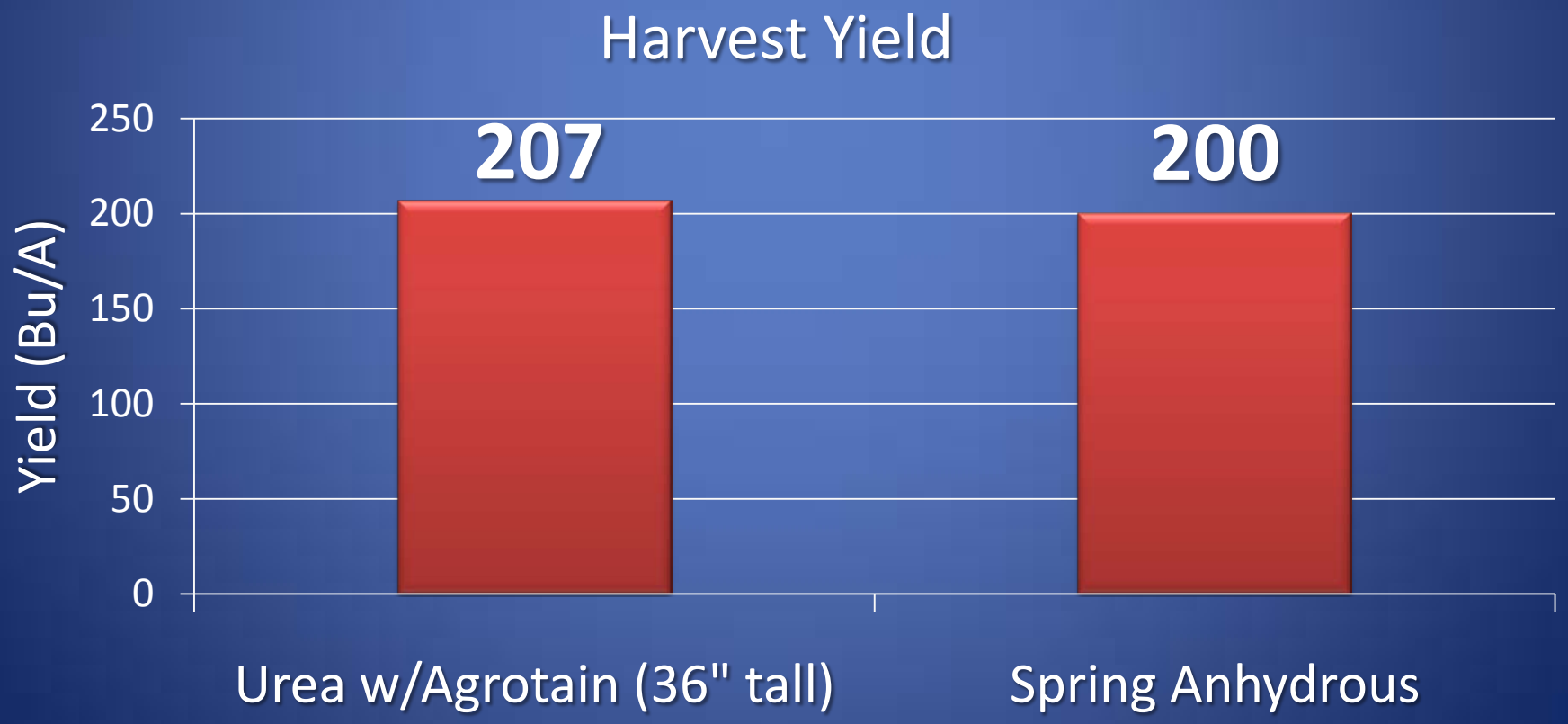
- Hedging Nitrogen Availability
- Compensate for Weather Fluctuations
- Reduce Risk
- Minimize Environmental Impact

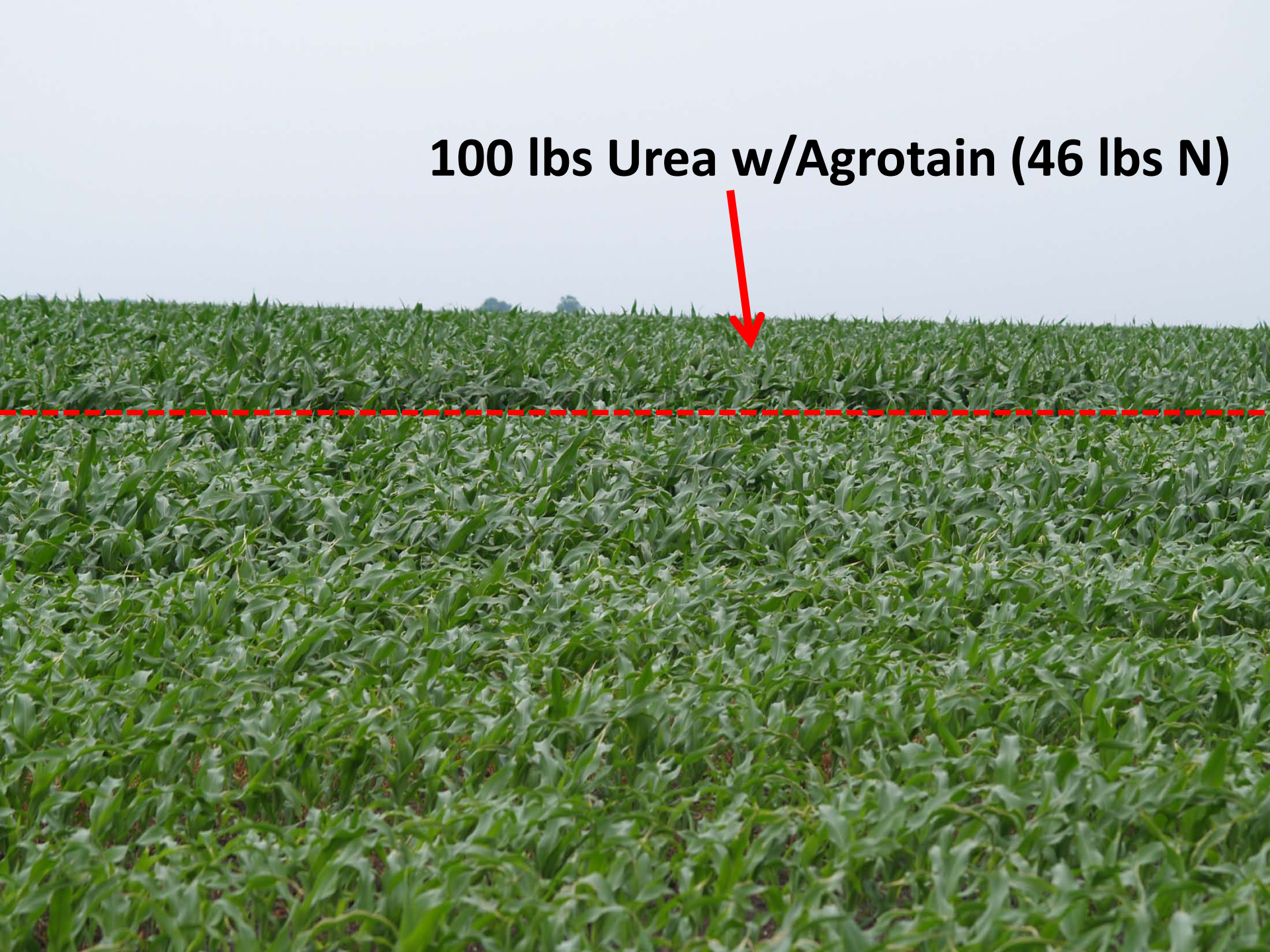

Post-Emerge N
- Knife-in AA or UAN ?
- Dribble UAN ?
- Broadcast urea ?
- Use methylene urea ?

350 lbs Urea + Agrotain
Applied June 21-22, 2009

Topdress w/Urea+Agrotain

"When time allows I will download the harvest data map which looked very impressive as far as consistent yields where the urea was applied and a lot of variation where the NH3 was applied."




100 lbs Urea w/Agrotain (46 lbs N)

2010 Season:

- 1400 tons urea
- 3 applicators
- Emergence to waist high

Prerequisites:

- Must use Agrotain
- Determine spread pattern
- Expect burn
- Must have rain

15 to 45
Bu/A so far

What do we need to know?

- Can we use less N and end up with more yield?
- Will late N increase grain protein?
- Will a reduction in N change the overall dynamics of soil N?
- What N enhancements will improve efficiency?
- What N enhancements actually work?

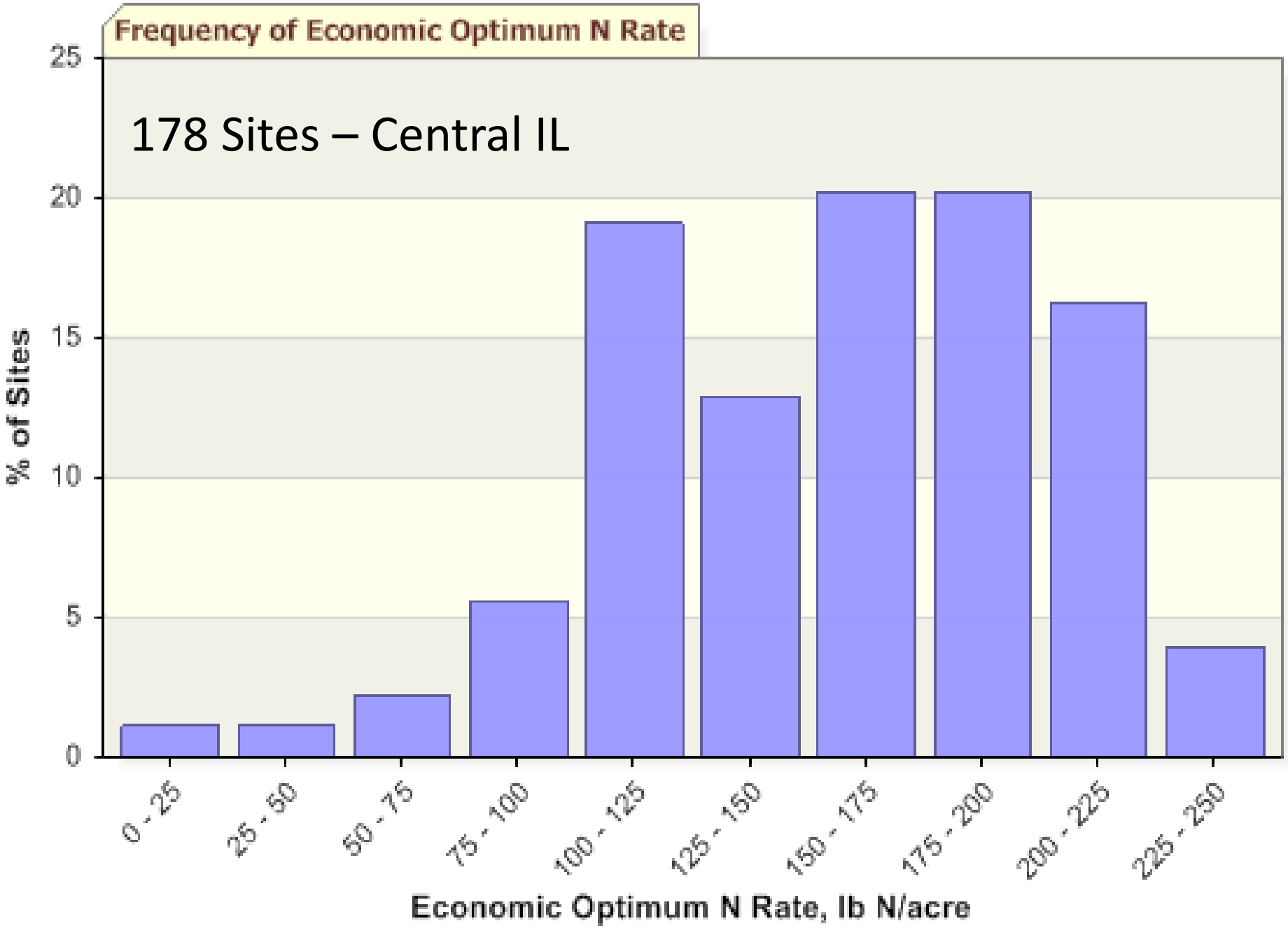
Decatur Her

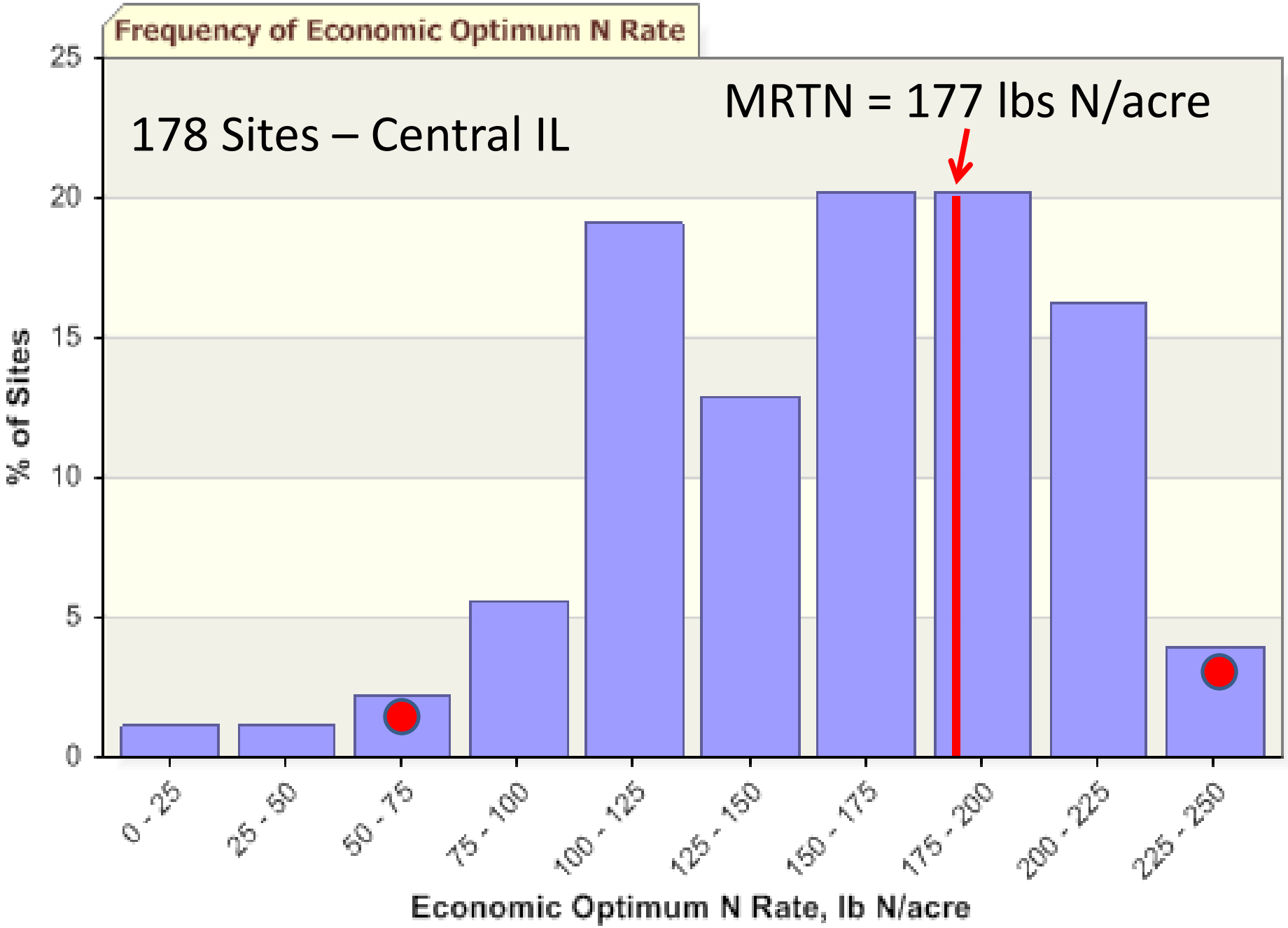
Tuesday, September 14, 2010

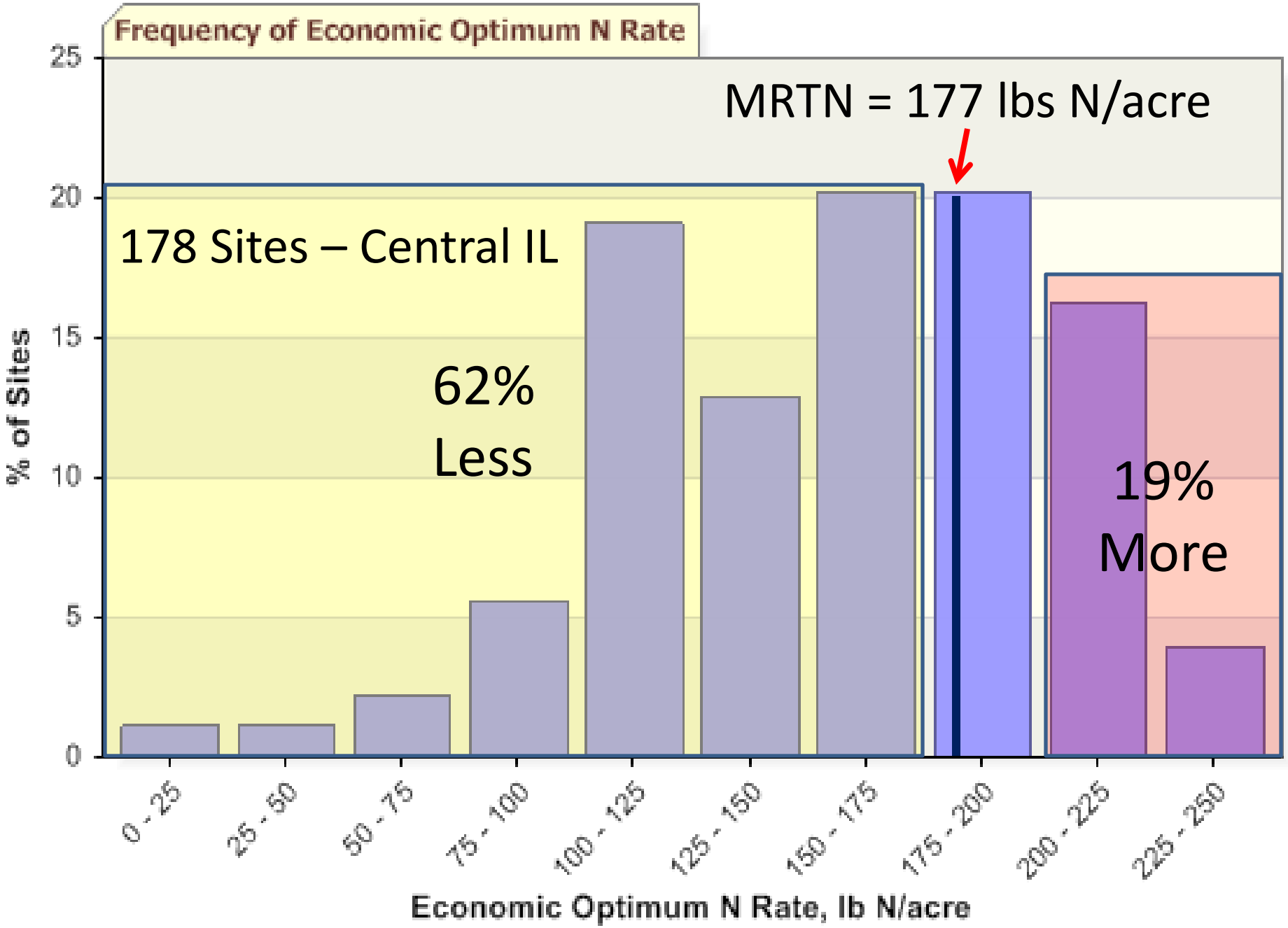
Ex-Manager of Agronomy Se

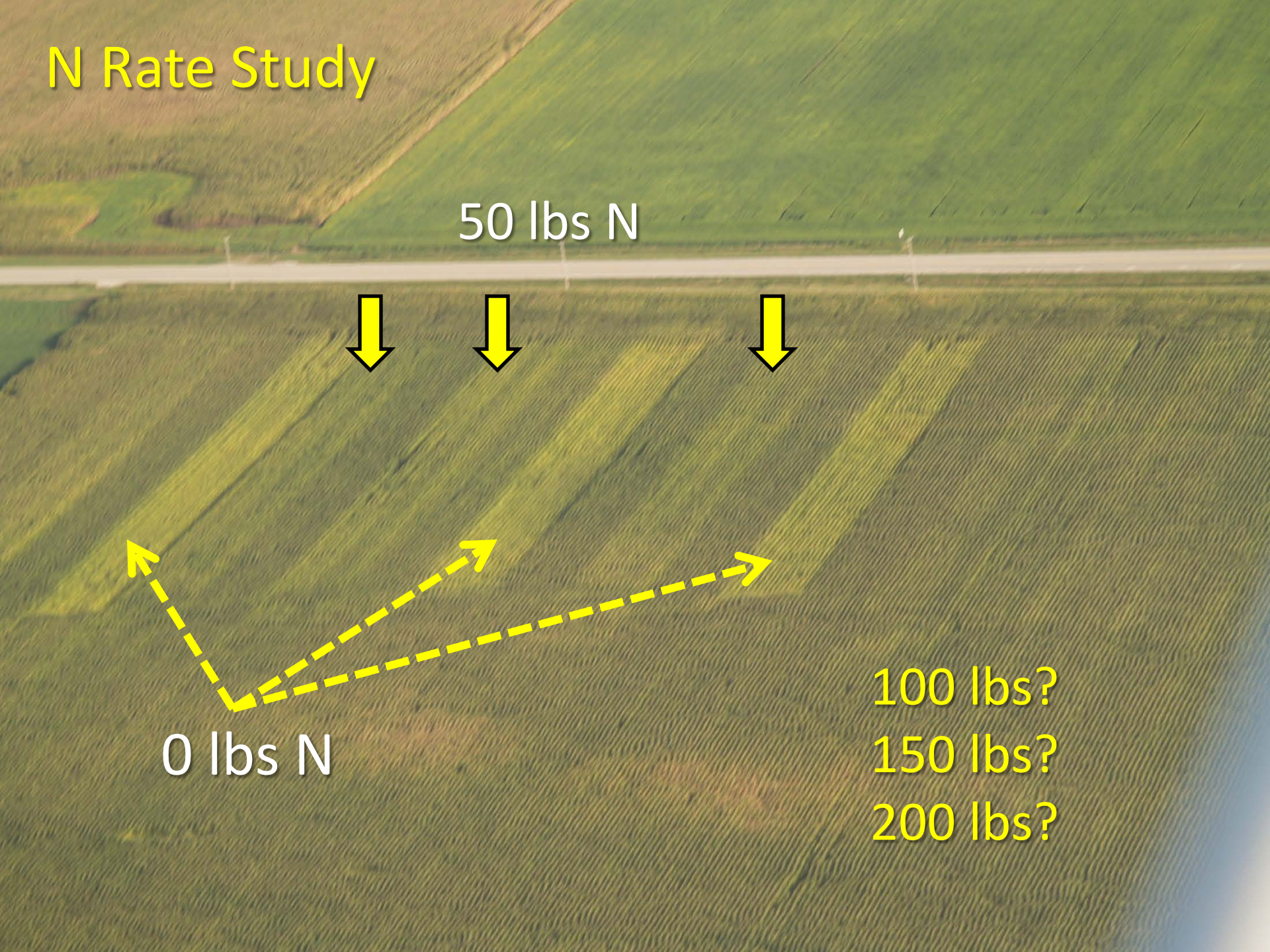
Howard Brown, recently fired for statements made at a Nutrient Summit in Springfield, IL has told farmers to cut their N rates by 50% to increase yields.

Ren
follo
imp


Frequency of Economic Optimum N Rate
178 Sites – Central IL
% of Sites
25
20
15
10
5
0
0 - 25
25 - 50
50 - 75
75 - 100
100 - 125
125 - 150
150 - 175
175 - 200
200 - 225
225 - 250
Economic Optimum N Rate, lb N/acre

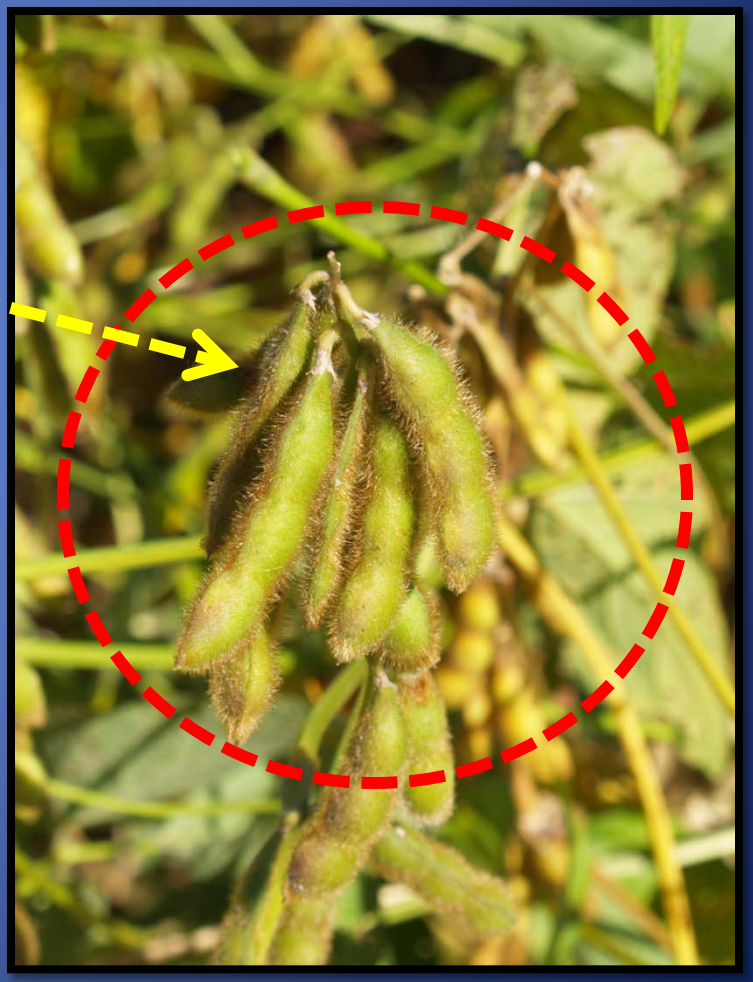

Frequency of Economic Optimum N Rate
178 Sites – Central IL
MRTN = 177 lbs N/acre
% of Sites
25
20
15
10
5
0
0 - 25
25 - 50
50 - 75
75 - 100
100 - 125
125 - 150
150 - 175
175 - 200
200 - 225
225 - 250
Economic Optimum N Rate, lb N/acre


Frequency of Economic Optimum N Rate
MRTN = 177 lbs N/acre
178 Sites – Central IL
62%
Less
19%
More
% of Sites
25
20
15
10
5
0
0 - 25
25 - 50
50 - 75
75 - 100
100 - 125
125 - 150
150 - 175
175 - 200
200 - 225
225 - 250
Economic Optimum N Rate, lb N/acre


N Rate Study
50 lbs N
0 lbs N
100 lbs?
150 lbs?
200 lbs?

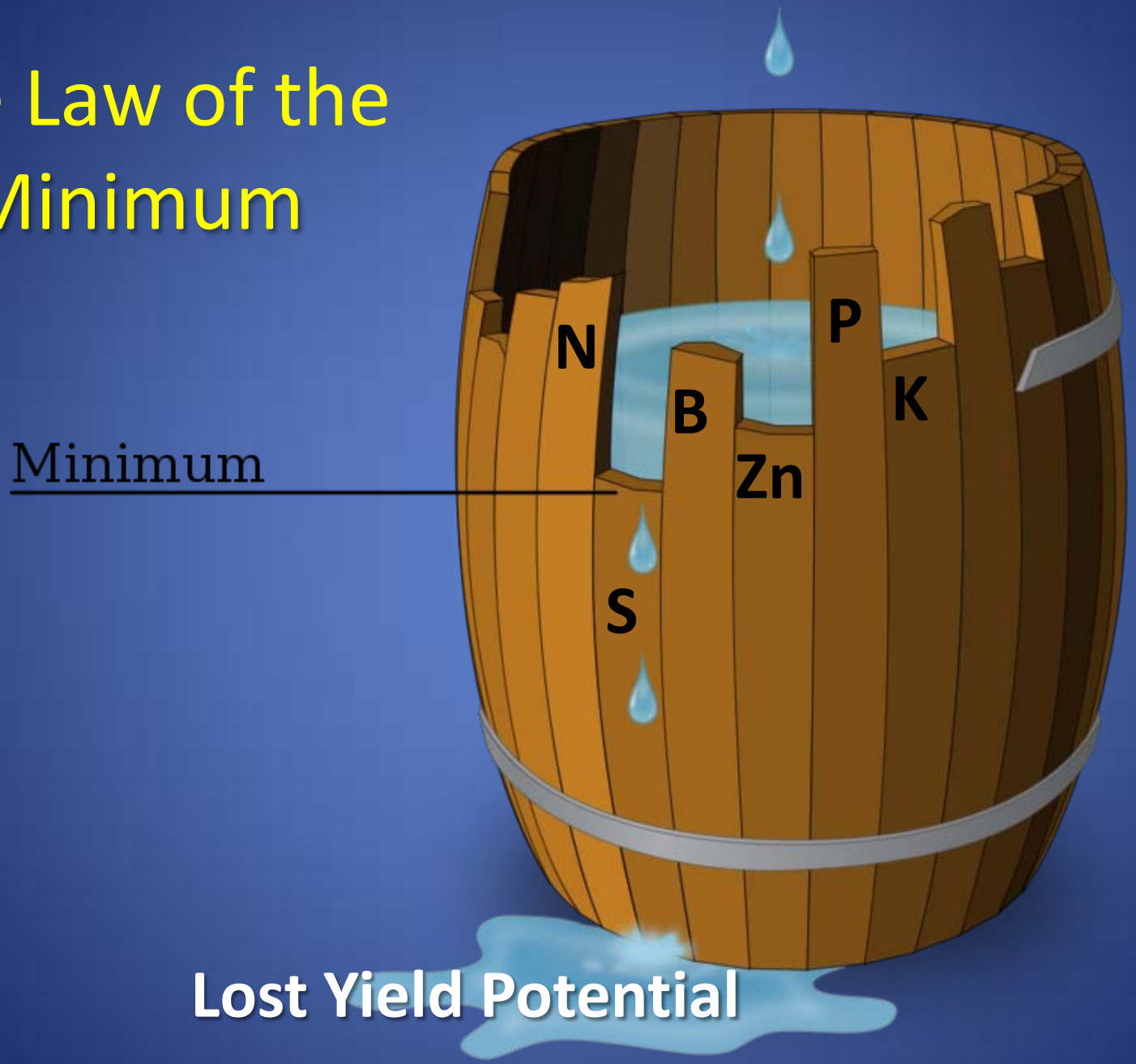
“We Only Know What We Know”

Soybean pod cluster
South of Champaign



- Inputs are interactive
- Confounding
- Changes crop response
- Law of the Minimum

The Law of the Minimum



Addressing Agronomic Questions

- On-Farm Discovery: Farmer questions, Farmer fields, Farmer data

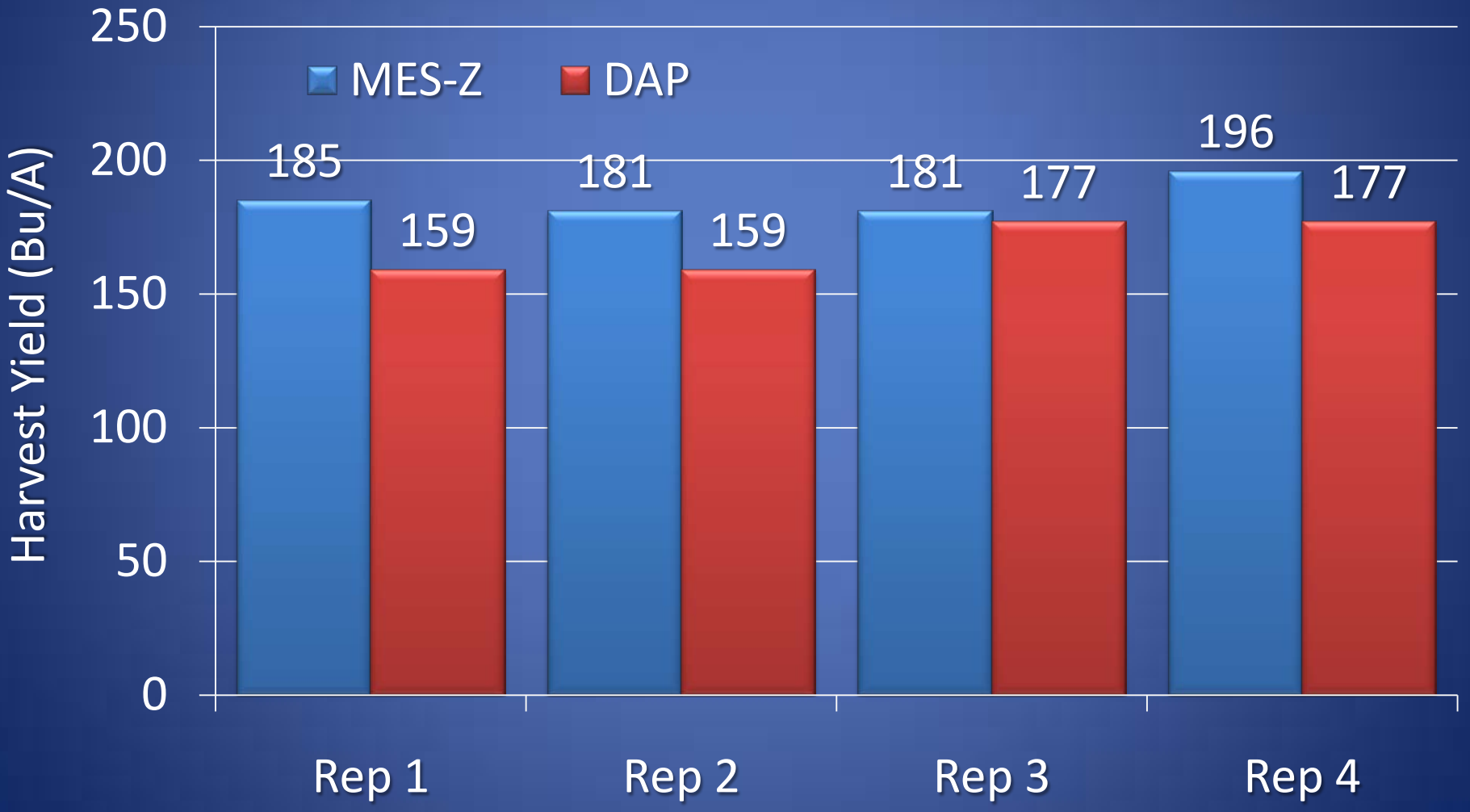
Other Names:

- On-Farm Network (ISA)
- Adaptive Management (USDA-NRCS)

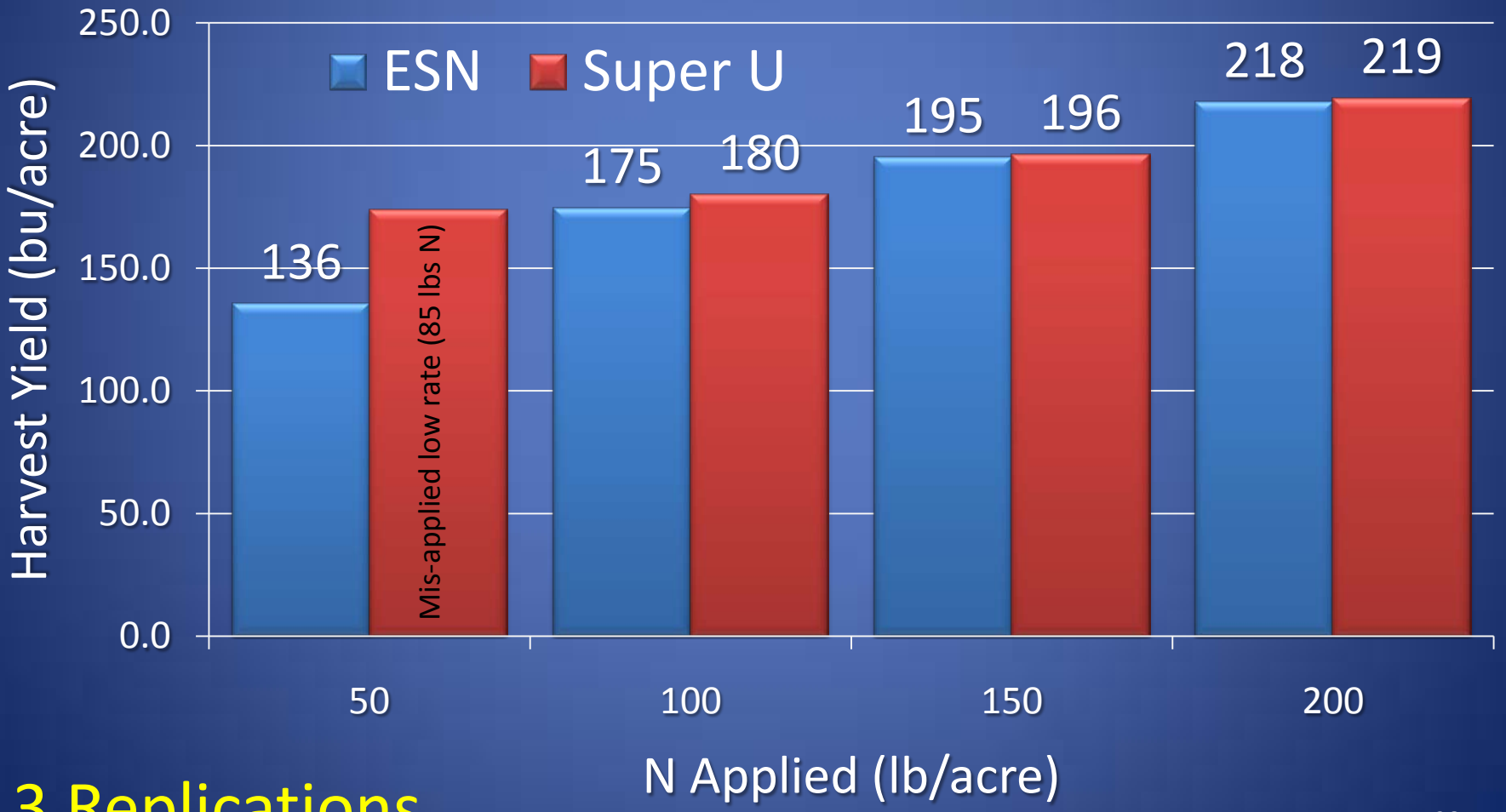
Partnering with land grant research specialists

Testing the Value of MES-Z

Central Illinois



Super U vs. ESN as a Spring N Source
N Rate Study



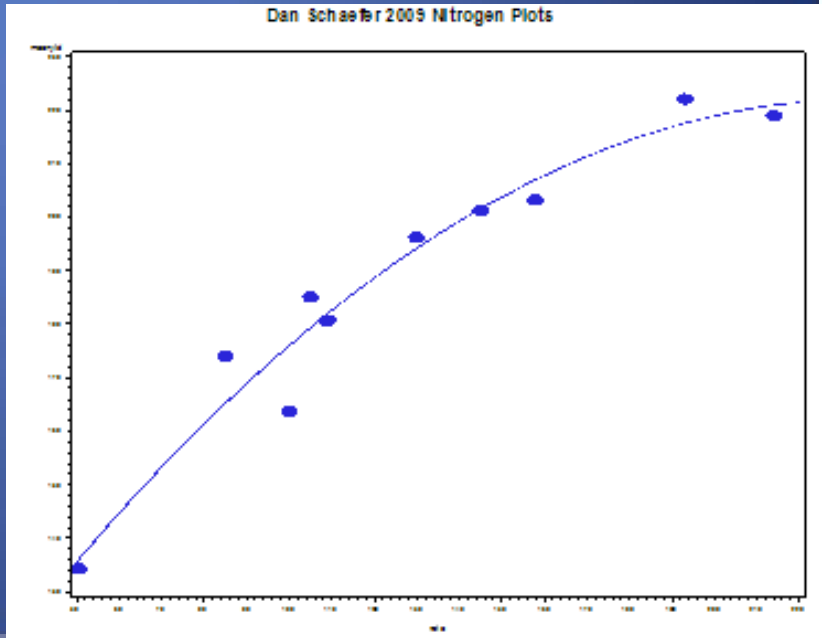
3 Replications

Super-U vs. ESN

Spring Applied with Drop Spreader
(Dan Schaefer, Illini FS)

"As it turns out the sources are not different. The only thing that mattered was rate and the more you put on the better and I guess that reflects the wet conditions. "

Dr. Don Bullock, Professor, University of Illinois



Where Are We Headed?

- Mississippi River Basin Initiative Proposal
- Corn Growers, Soybean Growers, Pork Producers, Illinois Farm Bureau, Illinois Fertilizer and Chemical Association
- Focused on a 12-digit HUC

What it Included

- Focused on N Rate Studies
- Development and implementation of NMPs
- Promote use of Enhanced Efficiency Products
- Promote use of “On-Farm Discovery”
- Rewarded “N as a System” approach

- Guided by “good agronomy” through U. of I.

Not Accepted in 2010 What Next?

Are current fertilizer recommendations adequate for ever-increasing yields?

Gyles Randall
Univ. of Minnesota, Waseca

University of Minnesota
Driven to Discover℠

Combined Removal (Corn/Soybeans)

YIELD (Bu/A)	150		200		250		300	
	DAP	Pot.	DAP	Pot.	DAP	Pot.	DAP	Pot.
50	209	200	250	225	291	250	330	275
60	226	225	267	250	309	275	348	300
70	244	250	285	275	326	300	365	325
80	261	275	302	300	343	325	383	350

MAJOR DEVELOPMENT GROUPS AND

TO FERTILITY VARIANT

Population in 2050 (millions)			
Low	*Medium*	*High*	*Constant*
7 409	8 919	10 633	12 754

Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat (2003). *World Population Prospects: The 2002 Revision. Highlights.* New York: United Nations.

World population 2050: 10 Billion
12 x the current U.S. population

Where to Find the Answers

- University system and research specialists
- Need to re-invent and revitalize
- Want to make jobs?
- What we do best
- Be the world's source of Agricultural Practitioners

What do we need to do?

- Do not limit tools in the tool box by managing activities from the rear view mirror at 30,000 feet
- Support re-invention and revitalization of university research and educational system
- Communicate as we move forward and use a “team approach” where desired
- “First Understand, Then Be Understood”

CAUTION:
Vehicle may be Transporting
Political Promises!
CALIFORNIA
POO PMPR