

**BMP CHALLENGE™ :**  
**Protecting corn farmers who adopt BMPs  
from yield and income risk, and  
documenting economic and environmental  
outcomes**

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*Harnessing the Power of the Marketplace to Improve Health, Environment and Economics*

2004, 2005 EPA Pesticide Environmental Stewardship National Champion

2005 EPA Children's Health Recognition Award Winner

2003 EPA Region V Recognition Award Winner

[www.bmpchallenge.org](http://www.bmpchallenge.org)



The IPM Institute  
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# Harnessing marketplace power...

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5th National  
IPM Symposium  
*Delivering on a Promise*  
April 4-6, 2006, St. Louis

**SYSCO**



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# Consumers Care!



# Goals

- *The INPUT PARADOX*
- *BMP CHALLENGE Net Returns Guarantee – Nutrient Management Example*
- *BMP CHALLENGE – Other Applications*
- *BMP CHALLENGE and Trading*



# Input paradox?

EPA, National Academy of Sciences and more than 20 other studies identify **ECONOMIC RISK** as a major culprit.

*“We’ve used a crop consultant in the past...*

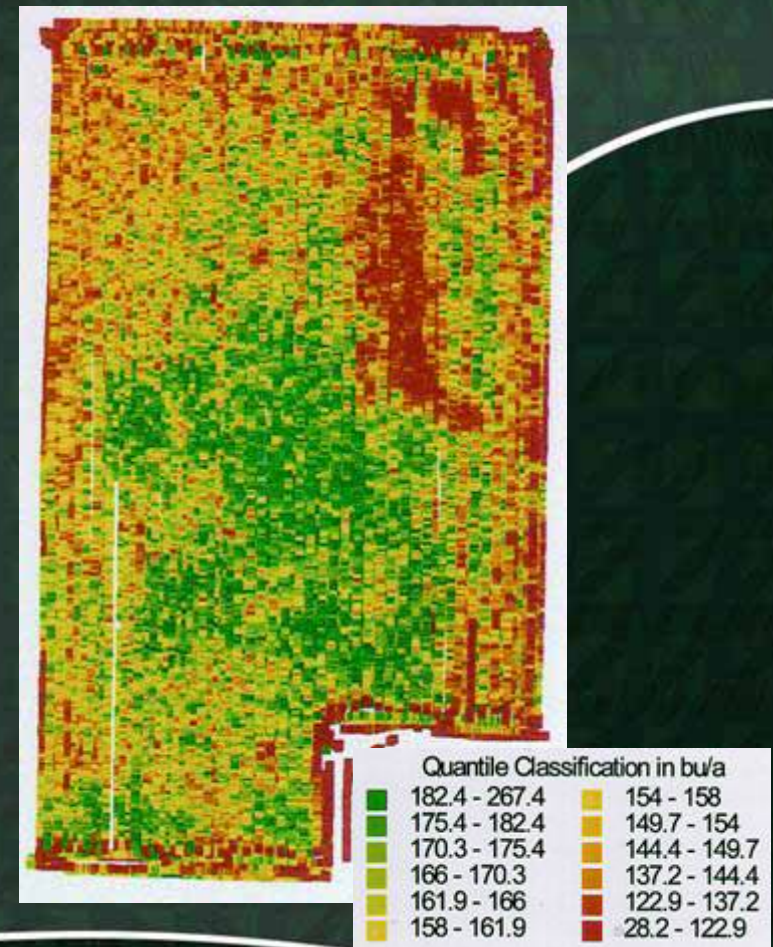
*...if he’s wrong, the cost of him being wrong is much more than the cost of that additional insecticide or herbicide.”*



# “EXTRA” is a RATIONAL DEFENSE

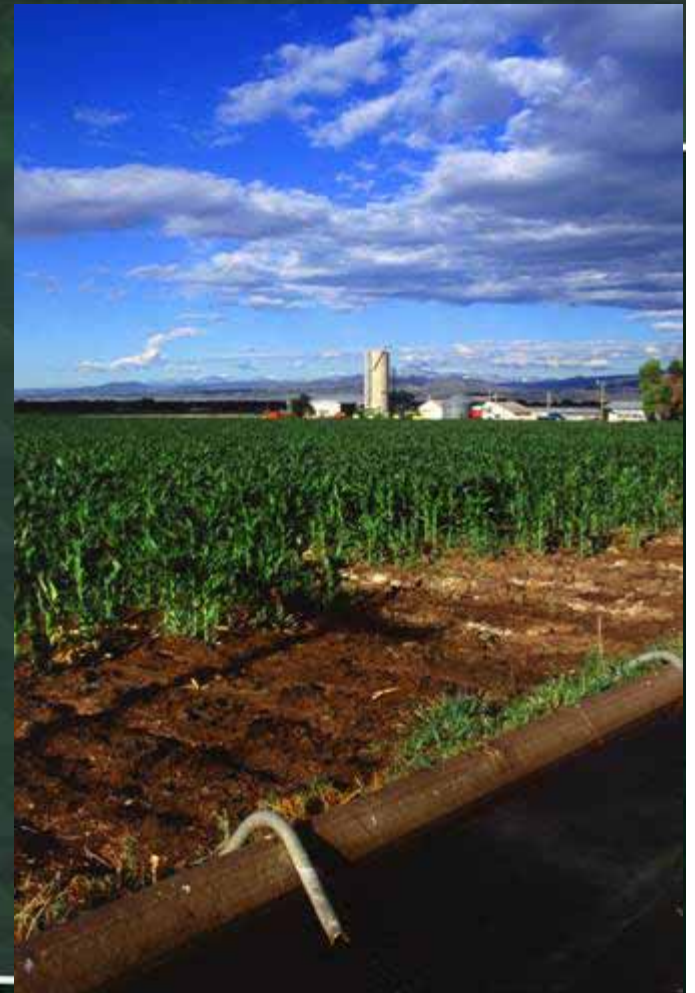
## Against economic uncertainty

- *Nutrient mgt is an uncertain science - 1.2# N/bu no longer*
- *Nutrients may be lost if heavy spring rains occur*
- *Bumper crop conditions may call for more nutrients*
- *Minn. corn farmers apply an avg. of 43# extra N after legume; 69# after legume and manure*



# 2005 corn farmer survey

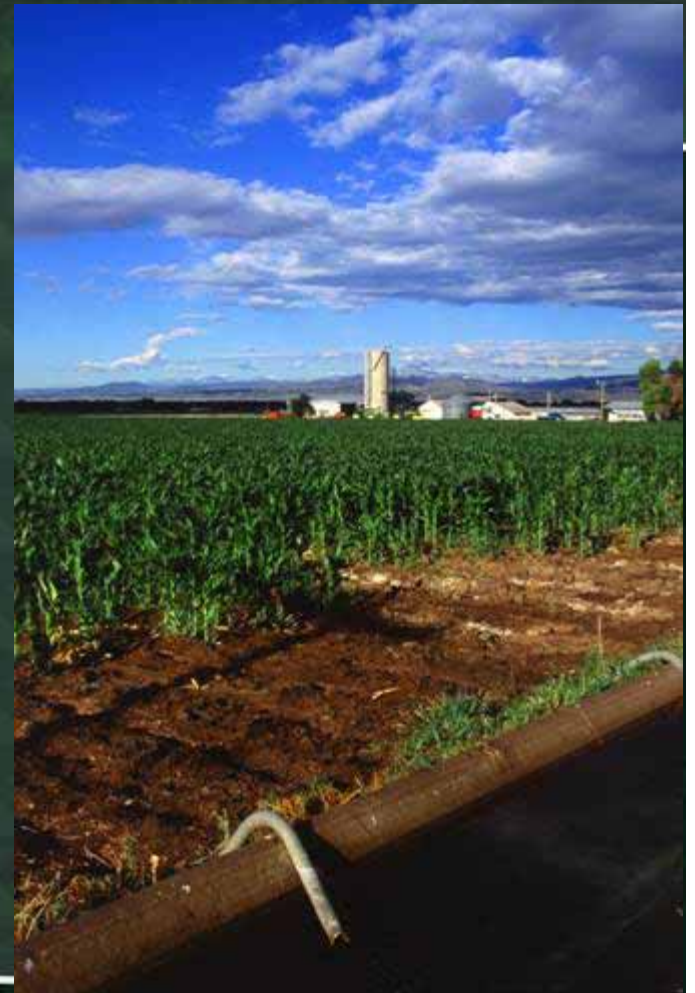
- 700 farmers, each planting 850 acres of crops per year on average
- Some progress
  - 54% have reduced fertilizer over past five years, 18% by 15% or more
- Enormous potential for basic and advanced practice adoption
  - 16% do not credit N from soybeans
  - 25% do not credit nutrients in manure
  - 67% do not use variable rate
  - 88% do not use in-season testing/application



# 2005 corn farmer survey

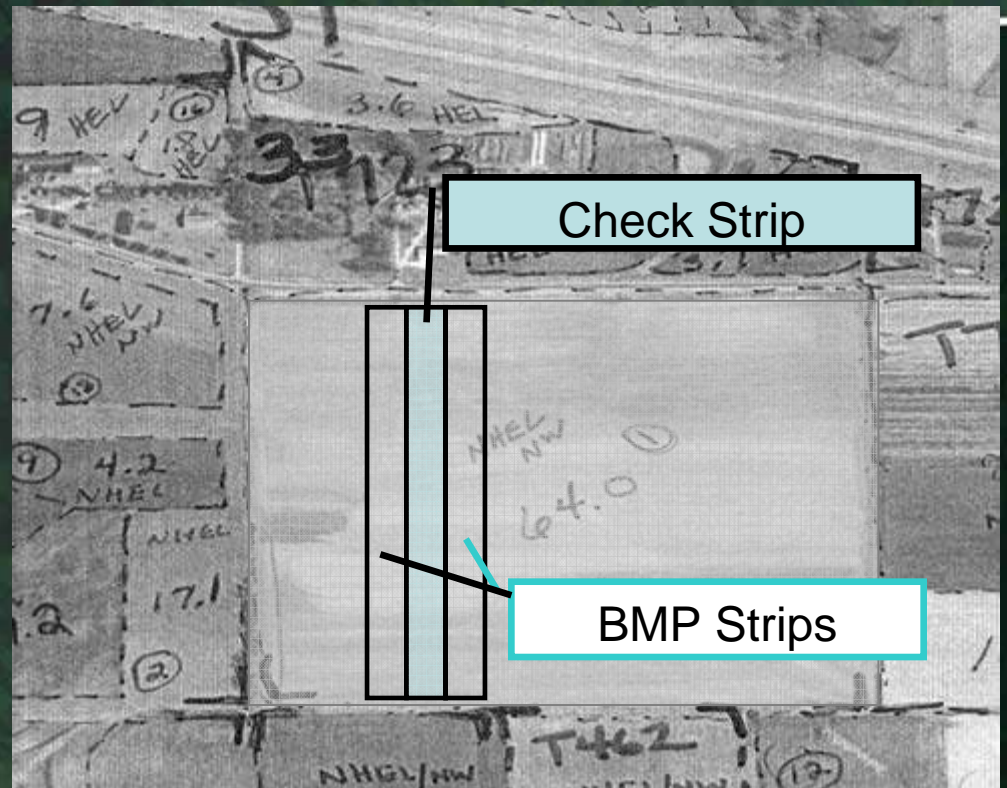
- 46% want to see proof before changing practices
- 80% would be interested in reducing fertilizer rates if income were guaranteed

**ENTER THE...**



# BMP CHALLENGE: Mechanics, nutrients

- Farmer enrolls field(s)
- Crop advisor prepares N, P, K recommendation
- Farmer applies additional to check strip
- Farmer and crop advisor assess yield v. adjacent
- Farmer paid if yield loss (after fertilizer savings); **pays in if benefit ( $<1/3$ )**



# Example from 2002: N only

	Conventional	BMP
Total Nutrients	208# N	168# N
Fertilizer Cost	\$40.56	\$32.76
Planning Cost	\$0	\$0
<b>Savings</b>	<b>\$7.80/acre, 40# N</b>	

Yield	87.1 bu/acre	87.9 bu/acre
Value (\$2.25/bu)	\$195.75	\$197.56
Yield Gain (loss)	\$1.81/acre, <1%	
<b>Guaranty payment</b>	<b>\$0</b>	

<b>FARMER NET</b>	<b>\$155.19/acre</b>	<b>\$164.80/acre</b>
<b>100 acre field</b>		<b>+\$967.00 (-\$322.30)</b>

# Example from 2003: N, P, K

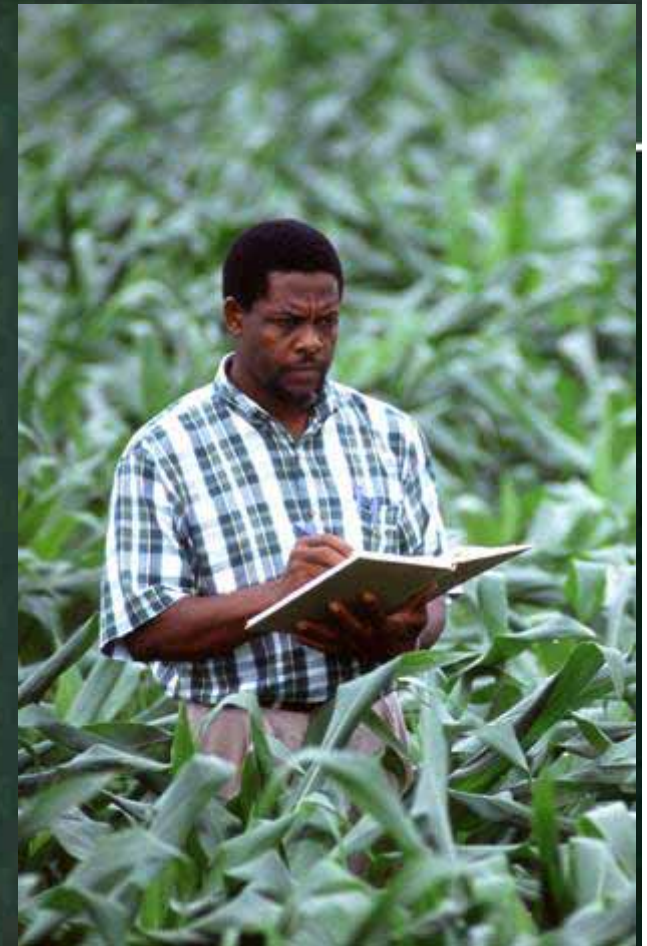
	Conventional	BMP
Total Fertilizer	180-90-60	120-30-15
Fertilizer Cost	\$67.24	\$41.57
Planning Cost	\$0	\$0
<b>Savings</b>	<b>\$25.67/acre, 60# N, 60 #P, 45# K</b>	

Yield	206.1 bu/acre	187.9 bu/acre
Value (\$2.25/bu)	\$463.73	\$422.78
Yield Gain (loss)	(\$40.95/acre, 9% yield loss)	
<b>Guaranty Payment</b>	<b>\$15.28/acre</b>	

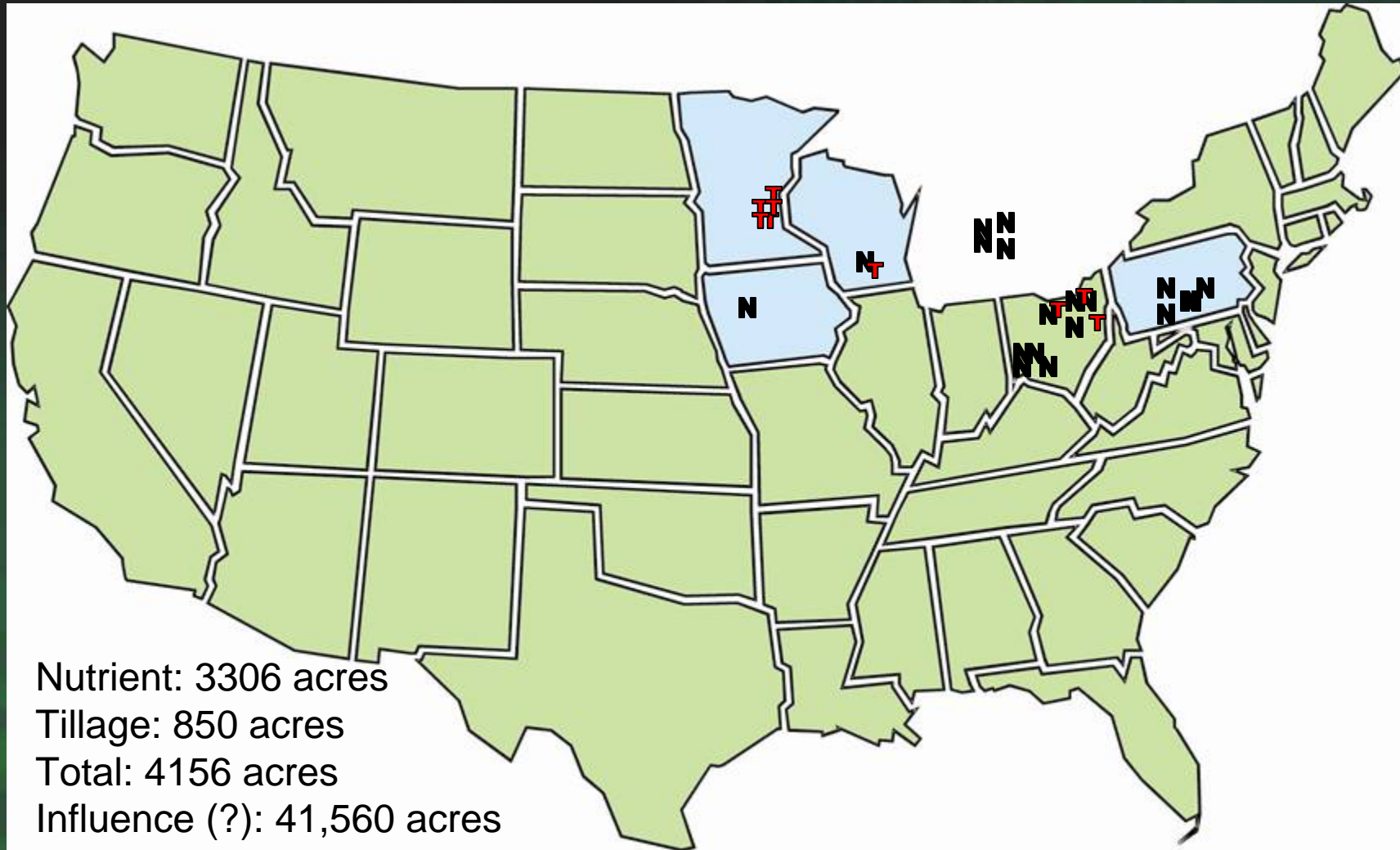
<b>FARMER NET</b>	<b>\$396.49</b>	<b>\$396.49</b>
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# Results 2002 to date

- **Avg. farmer benefit from BMP: (\$0.51)/acre**
  - 46 replicates, seven states
  - 2006 results pending, 25 fields, 3306 acres, six states
- **Cost for Nutrient BMP CHALLENGE: \$18/a**
  - Paid by third-party sponsor (e.g., EPA 319, Extension, state agency, ngo) plus farmer contribution
- **Average fertilizer savings**
  - 24% or 40# N/acre
- **2004: Corn Rootworm BMP CHALLENGE**
- **2005: First <BMP rate fields**
  - 2006 results pending, 18 fields in PA
- **2006: First REDUCED TILLAGE BMP CHALLENGE fields**
  - results pending, six fields, 850 acres, three states



# 2006 BMP CHALLENGE



Nutrient: 3306 acres  
Tillage: 850 acres  
Total: 4156 acres  
Influence (?): 41,560 acres

# Trading Project, 2006-2009

- *Farmer income assured, plus any income from trade*
- *Credits verified by third party*
- *Farmers anonymous*
- *Credits defray guarantee cost*
- *Guaranty program aggregates credits*
- *Nutrient mgt, tillage, buffers, etc.*
- *NRCS Conservation Innovation Grant*



# BMP CHALLENGE Partners

- *American Farmland Trust's Agricultural Conservation Innovation Center*
- *IPM Institute of North America, IPM Works LLC, Agren Inc.*
- *Agflex: Iowa corporation, "bank" for reserves to make payments to farmers*
- *Kieser and Associates*
- *Thanks to The Nature Conservancy*

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Iowa Department of Economic Development

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LeSueur County (MN) ♦ McKnight Foundation

Minnesota Department of Agriculture

National Fish and Wildlife Foundation

National Foundation for IPM Education ♦ Ohio State Extension

PA Dept of Agriculture ♦ Seven Mile Creek Watershed Project

US EPA ♦ University of Wisconsin ♦ USDA CSREES

USDA Small Business Innovative Research Program

USDA Natural Resources Conservation Service

USDA Risk Management Agency

Wisconsin Department of Natural Resources

Partners  
Wanted!

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