

# FARM ECONOMICS AND RISK MANAGEMENT

-A GROWER PERSPECTIVE

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Farmer, Nicollet County, MN











# Farm Economics

- Prices
- Costs
- Budgets

# Corn Futures Chart

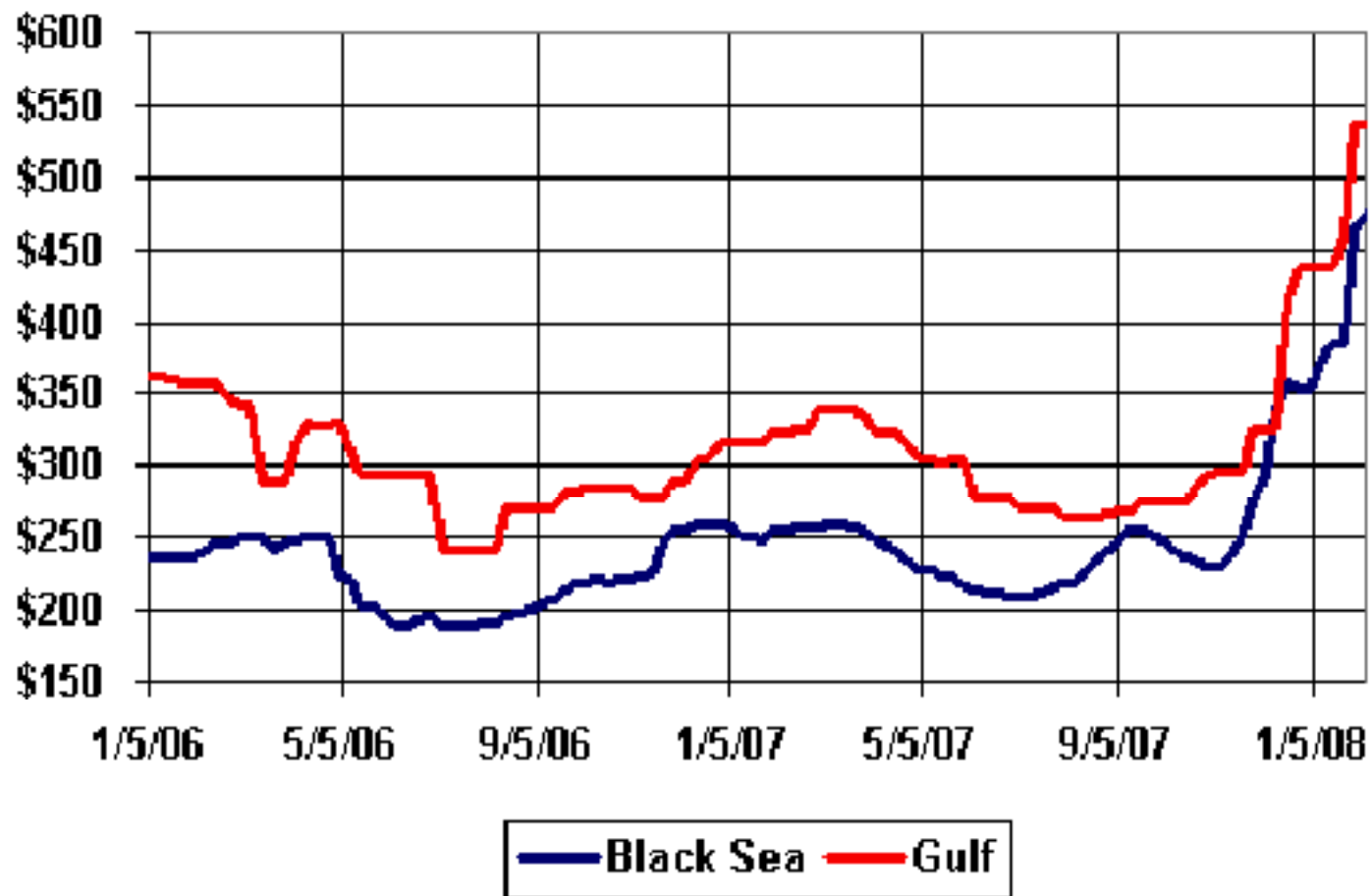
08Mar settle: 03/14 [Click to see Corn Product Calendar Dates](#) 

**Quotes** Settlement Daily Vol Time & Sales Volatility Historical Data Spreads

Open Auction **Electronic** Combinations Real-Time Quotes



### Anhydrous ammonia, per ton





## Ag Decision Maker -- Iowa State University Extension

Adjusted for Southern Minnesota costs

For more information, visit [Evaluating Rotations](#).

For information on long-term average yields, visit [Iowa Corn and Soybean County Yields](#).

Place the cursor over cells with red triangles to read comments.

Enter your input values in shaded cells.

### Corn-Soybeans (CS)

Corn Yield Goal	180	bushels/acre
Soybean Yield Goal	50	bushels/acre
Expected Corn Price	\$4.50	\$/bushel
Expected Soybean Price	\$10.00	\$/bushel
Typical N Application	120	lbs/acre

### Corn-Corn-Soybeans (CCS)

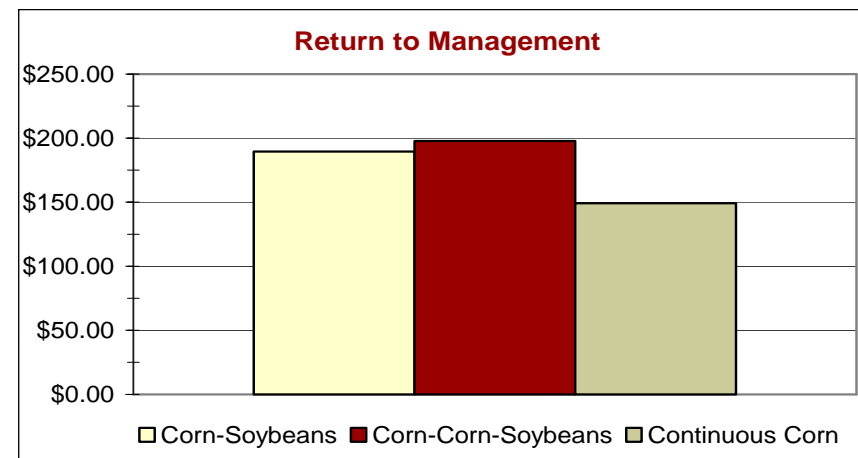
1st Corn Yield Goal	180	bushels/acre
2nd Corn Yield Goal	165	bushels/acre
Soybean Yield Goal	55	bushels/acre
Expected Corn Price	\$4.50	\$/bushel
Expected Soybean Price	\$10.00	\$/bushel
N Application to 1st Corn	120	lbs/acre
N Application to 2nd Corn	160	lbs/acre

### Corn-Corn (CC)

Corn Yield Goal	160	bushels/acre
Expected Corn Price	\$4.50	\$/bushel
Typical N Application	160	lbs/acre

### Additional Inputs

Nitrogen Price Paid	\$0.45	per pound	Wage rate	\$15.00	per hour
P <sub>2</sub> O <sub>5</sub> Price Paid	\$0.42	per pound	LP Price	\$1.60	per gallon
K <sub>2</sub> O Price Paid	\$0.38	per pound	Diesel fuel price	\$2.50	per gallon
Land Charge	\$185	per acre	1st year Corn seed	\$2.25	per 1000 seeds
Soybean Seed	\$35.00	per 50 Lbs.	1st Year Corn Insecticide	\$15.00	per acre
Soybean Insecticide/Fungicide	\$6.00	per acre	1st Year Corn Herbicide	\$24.00	per acre
Soybean Herbicide	\$15.00	per acre	Corn on corn seed	\$2.30	per 1000 seeds
			Corn on Corn Insecticide	\$17.00	per acre
			Corn on Corn Herbicide	\$24.00	per acre



	CS	CCS	CC
Return to Management	\$189.41	\$197.81	\$149.21
<b>Break-even corn price compared to CS</b>		<b>\$4.16</b>	<b>\$5.05</b>

IOWA STATE UNIVERSITY  
University Extension

Version 1.1

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# Economics Summary

- Farm financial condition is good
- Farmers feel good
- All inputs tied to petroleum = stress
- Impact of rising costs yet to come
- Impact of measures to deal with financial calamity ??????
- This is an election year!

# Risk Management

- Risk vs Uncertainty
- Incidence and Impact
- Attitudes
- Risk Categories

# Incidence

- Memory
- Data
- Forecast

# Impact

- What will it do to you?
- or
- What are the consequences?



# Impact

- Suppose:  $200 \text{ bu} \times \$3.50 = \$700$

Walter Welfed

If cost = 400  
Margin = \$300  
 $150 \text{ bu} \times \$3.50 = \$525$   
Margin - \$175

Harry Hapless

$150 \text{ bu} \times \$3.50 = \$525$   
If cost = 600  
Margin = (\$75)

# Long Term Impact

- Examples

Biotech refuges

Environmental effects

# Risk Attitudes

- The Cautious
- The Networkers
- The Students
- The Dare Devils

# Cautious

- They “follow the rules”
- They are organized and accurate
- They like strategies
- They want to avoid risk

# Networkers

- They are social, volunteer, become board members
- They act on a hunch
- They like to know what others are thinking and doing



# Students

- They search for data and information
- They are analytical
- They are independent decision makers

# Thrill Seekers

- They like thrills
- They are creative
- They are quick thinkers
- They are flexible
- They see life as a game to be played

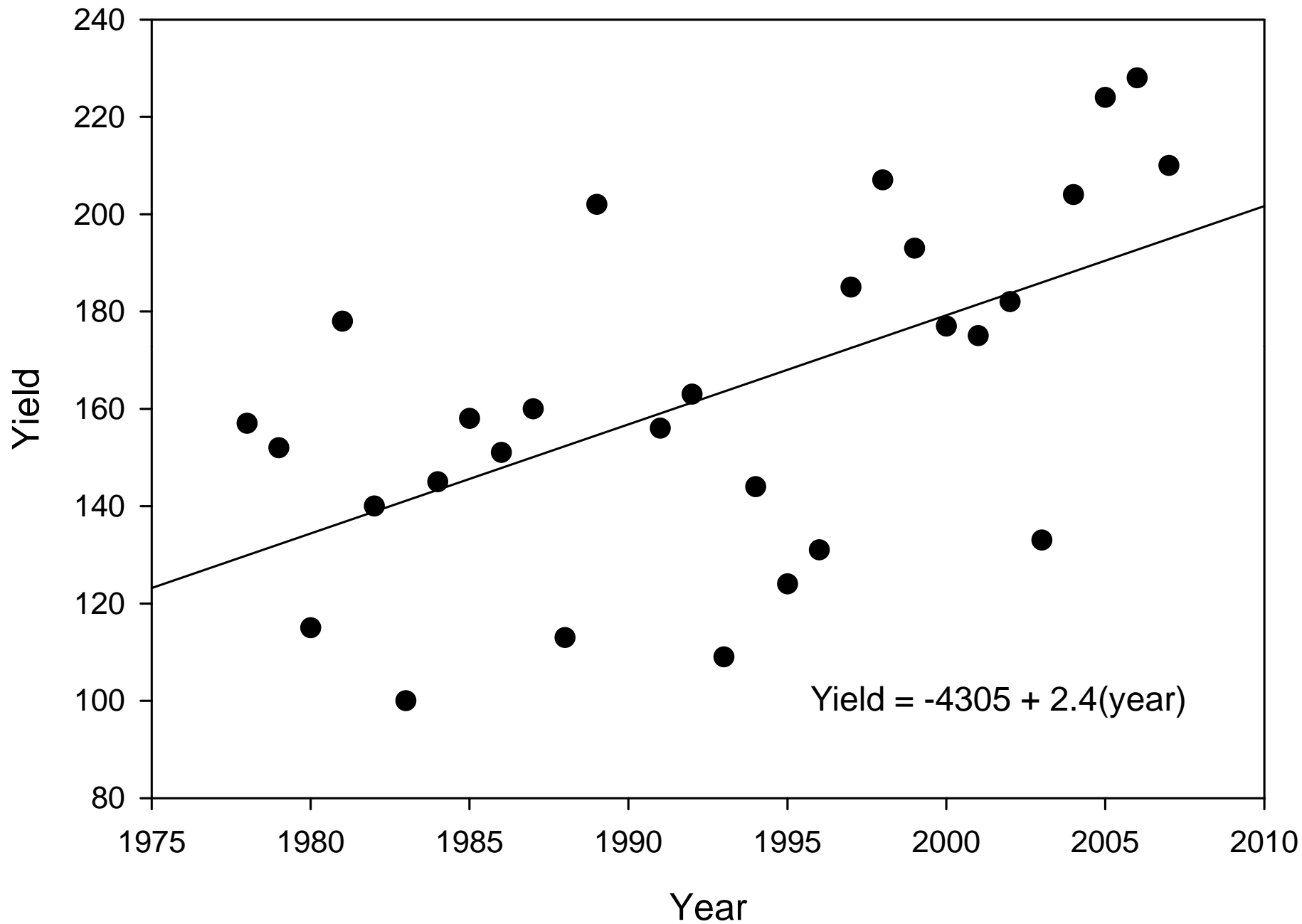
# Risk Categories

- Yield
- Inputs
- Markets

# Yield Risk

- History
- Climate

MN Corn Performance Test Yields Waseca





## Yield model

$$\text{Yield} = (2.4 \times \text{Year}) + (1.17 \times \text{Soil moisture}) + (0.006 \times \text{GDU}) - (2.55 \times \text{GS precip}) + (0.00126 \times \text{Solar}) - 4685$$

# Actual 2007 Yield

- 210 bu/A
  - 90% Confidence interval
    - 117 to 219
- Soil moisture low but timely rain fell

# Input Risk

- Fertility
- Variety selection

**Preliminary Grain Yield Summaries from Site-Specific experiments—2006**

**Richard Wurtzberger Field**

Gary L. Malzer  
University of Minnesota

Table 1. Impacts of N and P fertilization on corn grain yield.

<u>P<sub>2</sub>O<sub>5</sub></u>	<u>N</u>	<u>Average</u>	<u>Min.</u>	<u>Max.</u>	<u>StdDev.</u>
---lbs./a---		-----bu/a-----			
0	0	151.6	106.9	198.2	22.1
0	45	164.2	116.5	187.4	15.7
0	90	174.5	121.3	194.7	16.3
0	135	182.5	124.2	206.8	18.2
0	180	188.1	123.9	217.5	20.8
115	45	124.7	79.6	159.2	17.6
115	90	163.7	129.8	187.1	14.6
115	135	184.8	150.2	208.0	14.2
115	180	187.9	152.8	216.4	15.0

NOTES:

--This is the fifth year of research at this site which is in a corn soybean rotation.

--Fertilizer treatments have been reapplied to the same treatment areas prior to each corn production year.

--For 2006 P was applied in the fall as 18-46-0 and anhydrous ammonia was applied as a late fall application.

--Site specific crop response functions for N were calculated for 69 sub-field portions within the P and no P areas. The response functions were used to generate the above table.

--The economic optimum N rate needed to maximize profitability within the P treated areas was approximately 155 lbs of N and in the no P areas was 180 lbs. N/a., if constant N rates were to be applied (no extrapolation of data). Economic optimum N rates within the field ranged from 0-180 lbs N/a in the no P areas and 120-180 in the areas where P was applied. Substantial areas within the field did not respond to N when no P had been applied. Essentially the same economic yields as the overall field yield could have been obtained, in these no P areas, with a total of 125 lbs of N/a if it was applied in a site-specific manner. Average field yields would have increased to 194 bu/a if variable rate N applications were made on the areas where P was applied, while very little yield advantage was obtained in areas where no P was applied.

--Economics were calculated with corn at \$3.20/bu, N at \$0.25/lb. and P205 at \$0.26/lb (one-half)

--The whole field analysis would suggest that a general application of P across the entire field would not be economically justifiable in 2006. There appears to be an N x P interaction at the low rates of N. The yields

## Trait Analysis MN Corn Performance Test

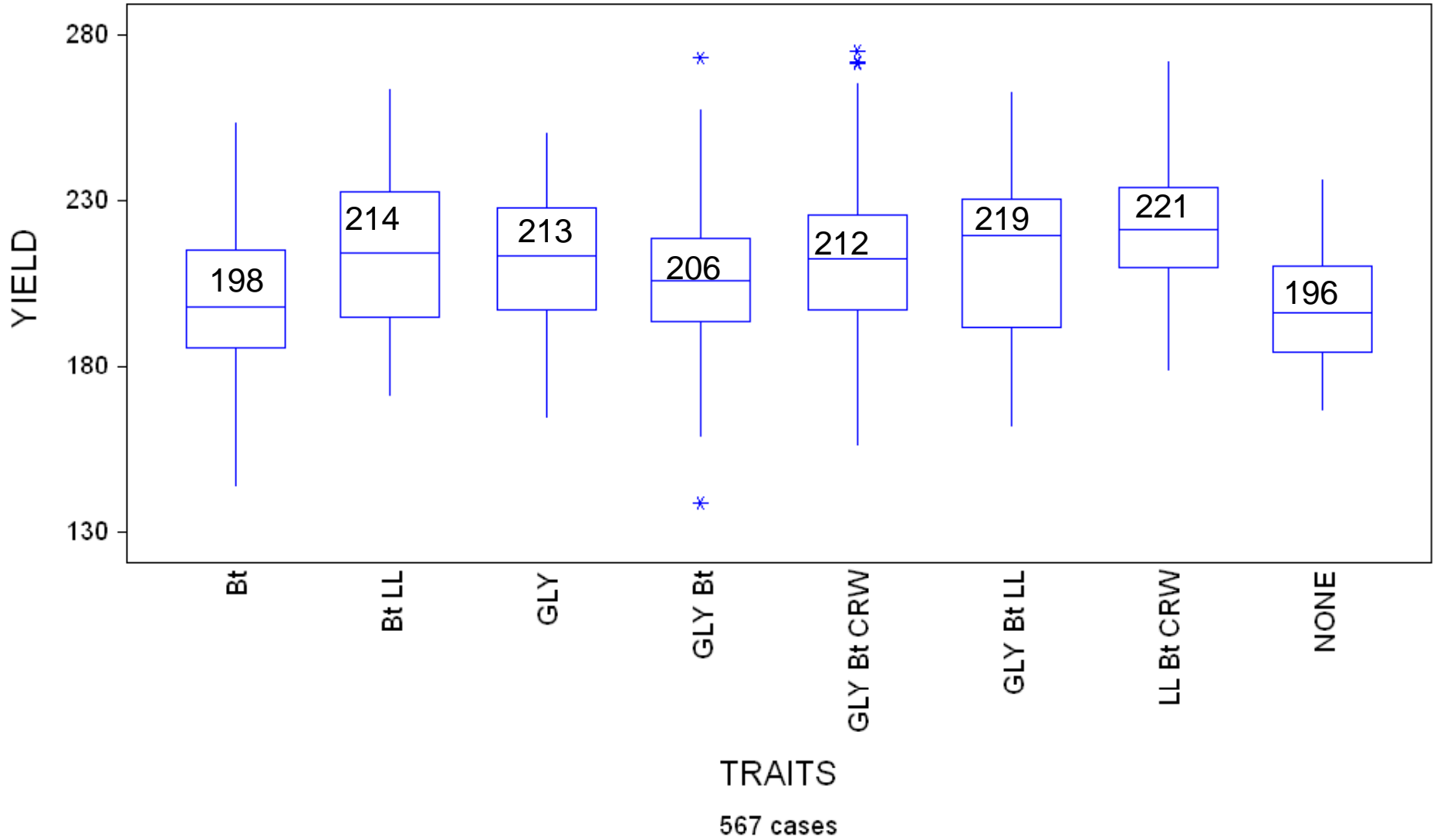
Trait	N	Cost			total	Bu/A needed	
		Herb	Seed	Insect		@ 3.00/bu to cover cost	bu/A Advantage
Bt	10	33	56	17	105	4	1
Bt LL	15	34	56	17	107	4	15
GLY	16	24	62	17	103	3	14
GLY Bt	41	24	68	17	109	5	7
GLY Bt CRW	85	24	84	0	108	5	14
GLY Bt LL	7	24	68	17	109	5	14
LL Bt CRW	9	34	78	0	112	6	24
NONE	6	33	43	17	93	0	0

Herbicide cost from U of M Trails

Seed and insecticide cost from Dekalb trait comparison

# MN Corn Performance Test - Waseca

## Box and Whisker Plot



# Market Risk

- Access
- Price

# Market Access

- Speciality commodities
- Vegetables
- Bulk commodities



# Market Price

- Seasonality
- Recent history
- Risk reduction tools

# Summary

- The agricultural economy is good, overall
- Managing risk is a major part of good farm management
- Some risks are on-farm and can be managed
- Some risks are off-farm, but require awareness

# The end

- Farm economics
- Risk management
- Sundry topics
- Have a good day