

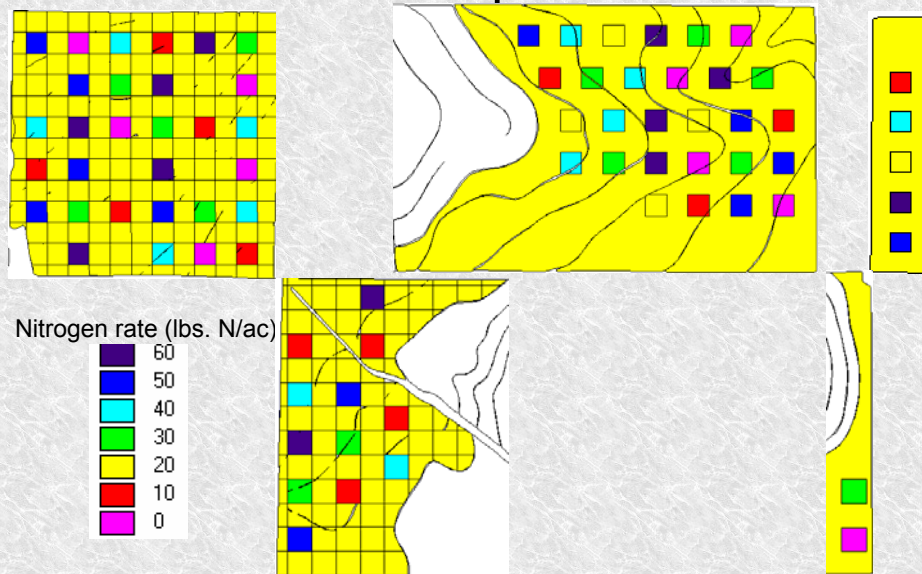
## Objective and History

- To determine the economic optimal nitrogen topdress rate for our farm.
- We do not have a history of fertilizing on our farm.
  - No significant yield advantage to N application in past trials.
  - One landlord does request nitrogen topdress application.

## Methods

- 4 fields were used for the tests
- Wheat was planted on Sept. 23<sup>rd</sup>, 28<sup>th</sup>, and Oct. 1<sup>st</sup> 2007
- Topdress application was made Mar. 6<sup>th</sup>, 10<sup>th</sup>, and 11<sup>th</sup> 2008
  - One acre grid was laid out in each field
  - 0, 10, 20, 30, 40, 50, 60 lbs. N/ac. was applied in random grid cells
- Wheat was harvested and yield was mapped using JD GS1 on June 23<sup>rd</sup>, 27<sup>th</sup>, 28<sup>th</sup>, and July 1<sup>st</sup> 2008
  - Data was corrected using Yield Editor

## Prescriptions

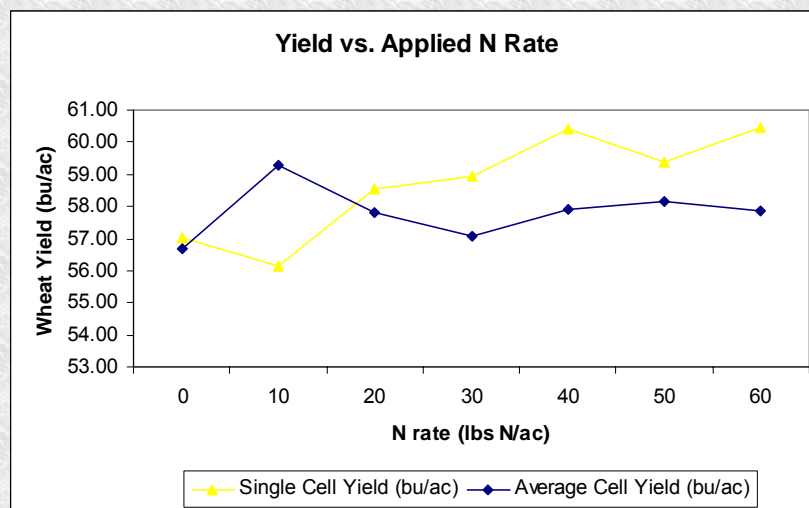


# Analysis

Actual			Average		
N (lbs/ac)	Average N	Single Cell Yield (bu/ac)	Average N	Average Cell Yield	Average Cell Yield
0	0.00	57.01	19.87		56.68
10	12.57	56.12	12.25		59.27
20	19.99	58.54	19.90		57.81
30	29.35	58.96	29.35		57.05
40	38.83	60.42	38.83		57.91
50	41.61	59.36	41.61		58.16
60	54.97	60.47	54.97		57.86
	Rate				
t test	10	0.87			0.62
	20	0.74			0.75
	30	0.72			0.94
	40	0.53			0.80
	50	0.65			0.76
	60	0.53			0.80

No topdress rate was not statistically significant

# Analysis Continued



# Production function

B. Yield = Rate + Rate^2 + Elev + Elev^2 + Field 1 + Field 2 + Field 3 + Field 4 + Field 5

Single cell model

Multiple R	0.764272
R Square	0.584112
Adjusted R Square	0.545122
Standard Error	7.350558
Observations	106

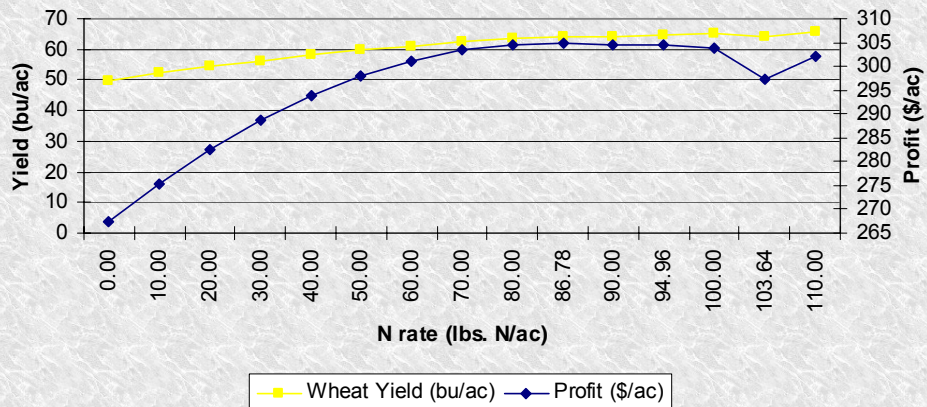
	Coefficients	Standard Error	t Stat	P-value
Intercept	12476.63	11877.39	1.05	0.30
RATE	0.03	0.14	0.23	0.82
Rate^2	0.00	0.00	0.24	0.81
Elevation	-10.24	9.81	-1.04	0.30
Elev^2	0.00	0.00	1.04	0.30
VH	3.72	2.04	1.83	0.07
VM	7.34	3.68	1.99	0.05
T	-45.98	18.90	-2.43	0.02
VHMS07	-3.33	3.58	-0.93	0.35
VHS07	-7.17	3.76	-1.91	0.06

Average cells model

Multiple R	0.835108
R Square	0.697406
Adjusted R Square	0.669038
Standard Error	5.438107
Observations	106

	Coefficients	Standard Error	t Stat	P-value
Intercept	11288.19	8677.45	1.30	0.20
Rate	0.24	0.26	0.95	0.34
Rate^2	0.00	0.00	-0.92	0.36
Elevation	-9.27	7.17	-1.29	0.20
Elev^2	0.00	0.00	1.29	0.20
VH	7.40	1.51	4.91	0.00
VM	11.05	2.73	4.05	0.00
T	-37.76	13.97	-2.70	0.01
VHMS07	-0.40	2.59	-0.16	0.88
VHS07	-4.34	2.71	-1.60	0.11

Yield and Profit vs. N rate



## Conclusions

- Second year of experience helps
  - Upgraded equipment and software
  - Higher prices → more fertilizing → more confidence
- Data shows a need to increase N rates
- Hope to continue study next year
  - Hope to do some soil testing
  - Try to employ Greenseeker®
- Thanks to KARA, Dietrich, Terry, and Kevin

