

# Potash Study

By Lenhart Farms Inc.

- Soil testing was done by K-state
- Scott used programs to isolate yields
- Potash price is \$265 per ton
- Soybean price is \$4.89
- Corn price is \$1.98

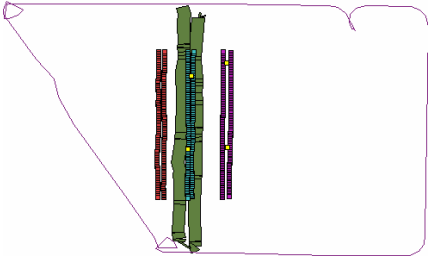
I am trying to see if a potash application improves yield in soils that already test high to very high in K levels.

### The method I used was:

- I applied 100# of 0-0-60 with a dry broadcast spreader in 120 ft strips
- Marked with GPS using EZ-map on my Ipaq
- Yield data information collected with Fieldstar
- The potash was applied on May 5<sup>th</sup>
- The 2 strips in corn were applied just after planting
- The soybean strip was applied preplant

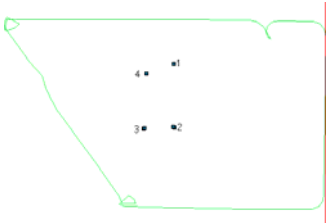
# Soybean Field

- The green is the potash strip.
- The yellow dots are the soil test locations.
- The red , purple, & blue are the yield data locations



# Soil test data

ID	Depth	Lat.	Long.	P H	Posh.	Potash
1 or Pbs1	0"-6"	39.5378979 3	97.212 48667	5.6	39	450
2 or Pbs 2a	0"-3"	39.5366994 1	97.212 47323	6.3	68	156
3 or Pbs 2b	3"-6"	39.5366994 2	97.212 47324	5.3	9	104
4 or Pbs 3a	0"-3"	39.5366738 7	97.213 04563	6	50	279
5 or Pbs 3b	3"-6"	39.5366738 7	97.213 04563	5.4	26	185
6 or Pbs4	0"-6"	39.5377196	-97.212995	5.7	47	194



## Comparison

Treatment Strip	Yield	stdev	Yield bu/a
Ctrl 1	4240	284.44	67.60204
Trt	4355	139.99	69.43559
Ctrl 2	4249	227	67.74554

- The difference of 1.75 Bu.
- 1.75 Bu. at loan = \$8.60
- 100# of 0-0-60 = \$13.25
- It did not pay to apply potash with this yield advantage at loan price.

These are yields from the entire strips.

Yields saved as shape file for each strip

Strip lengths are 921 feet long

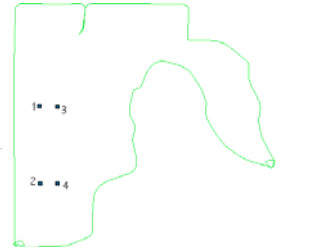
## Field 1 corn

- Light blue is the potash strips
- Yellow are the soil test location
- The light green are yield boxes
- The purple, blue & green strips are yield.



## Soil test data

ID	Depth	Lat.	Long.	P H	Posh.	Potash
PP1	0"-6"	39.54778233	-97.20961833	5.6	12	158
PP2	0"-6"	39.55011143	-97.20965406	5.7	29	197
PP3	0"-6"	39.55007835	-97.20911541	6	34	158
PP4	0"-6"	39.54783137	-97.20912167	5.9	45	282



## Comparison total strips

Strips the Entire Length of the field Yields below

Treatment	Yield	Stdev	Yield (bu/a)
Ctrl	9854	1310	157.111
Trt	8866	1170	141.3584
Goodtrt	9396	635	149.8087
Ctrl	9730	1193	155.1339

- A yield difference is - 8 Bu.
- It is obvious this did not pay

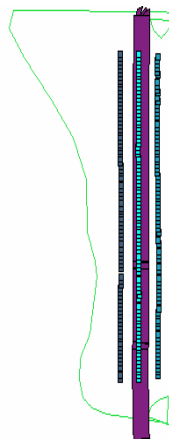
## Comparison in boxes

ID	Treatment	Field	Crop		
1	0	1	9618.326	153.3534	
1	1	1	9771.94	155.8026	
2	0	1	9640.337	153.7044	
1	1	1	9611.038	153.2372	

- The difference was still negative but only by 1 Bu.

## Field 2 corn

- This field was no-tilled into pasture starting in 2001
- Soil test levels
- O.M. 2.4, P2 13 , K 300 , PH 6.4
- Purple is potash strip
- Blue strips are for yield



## Comparison

Treatment Strip	Yield	stdev	Yield bu/a
Ctrl 1	5488	472	87.5
Trt	6371	784	101.5784
Ctrl 2	5316	312	84.75765

These are yields from the entire strips.

Yields saved as shape file for each strip

Strip lengths are 921 feet long

- A difference of 14.8 Bu.
- 14.8 Bu. at loan = \$29.45
- Potash costs = \$13.25
- It paid to apply potash with this yield advantage.

## Overview

- The soybeans yield was more but not enough to pay for the potash application.
- In the hill ground it more than paid .
- On the creek bottom it did not pay.

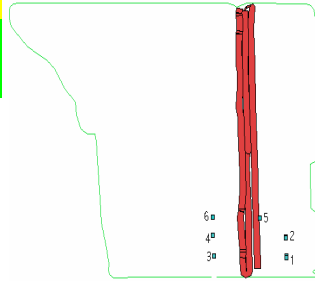
## Question

## Additional fields

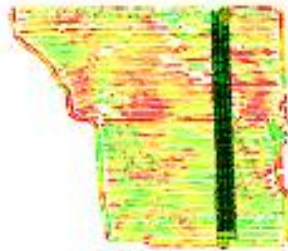
- I used SMS basic to select areas and query yields

# Soybean Field 2

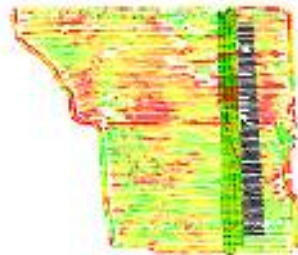
ID	Depth	Lat.	Long.	PH	Posh.	Potash
Pru1a	0"-3"	39.56102934	-97.22067115	6.2	52	446
Pru1b	3"-6"	39.56102935	-97.22067116	5.4	29	333
Pru2a	0"-3"	39.5614454	-97.22068656	6.3	42	495
Pru2b	3"-6"	39.5614455	-97.22068657	5.5	13	367
Pru3	0"-6"	39.56102634	-97.2227926	5.9	48	450
Pru4	0"-6"	39.5614785	-97.22282219	5.8	25	327
Pru5	0"-6"	39.56186187	-97.22144601	6.1	39	412
Pru6	0"-6"	39.56187559	-97.2228201	5.9	65	390



Description	Average	Minimum	Maximum
Estimated Volume (Dry)	49.19 bu/ac	20.95 bu/ac	71.26 bu/ac



Description	Average	Minimum	Maximum
Estimated Volume (Dry)	48.98 bu/ac	22.33 bu/ac	73.10 bu/ac



## Comparison Soybean 2

- No difference
- Doesn't pay

## Irrigated Field

- Yields are 2 years before and from 4 years after potash application



## Comparison

- Not much difference

## Any Questions

What should I have do  
different?

How should I have  
Queried?