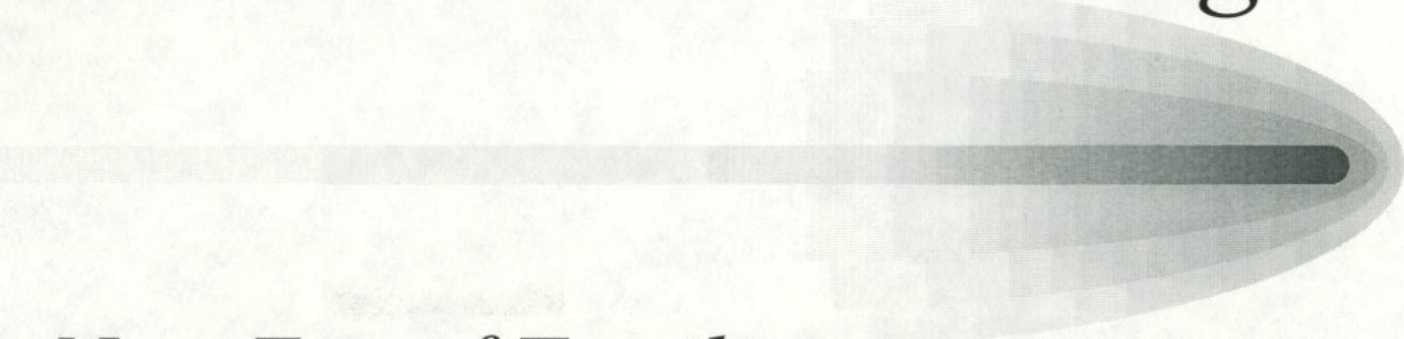


Section 3

Outreach Material

Precision Farming



New Era of Fertilization

Conventional Method

- Several Core Samples Are Pulled In One Field
- Core Samples Are Mixed Into One Sample
- One Sample Represents The Whole Field
- Field Is Spread From Recommendation Of *One* Analyzed Soil Sample

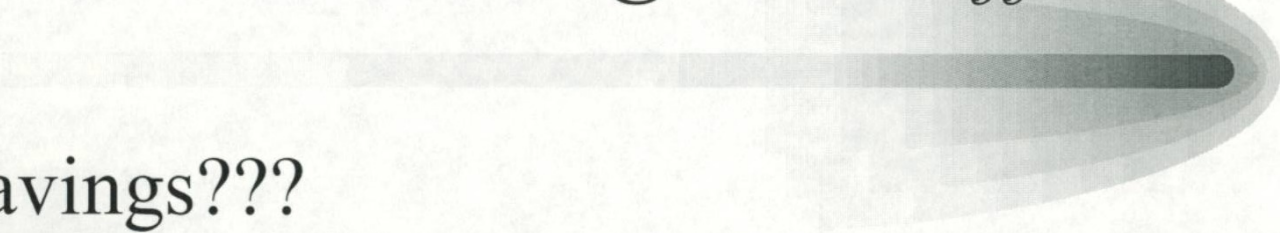
Precision Method

- Acreage Is Determined Using GPS
- Points Are Marked In The Field Using GPS
- Soil Samples Are Pulled At Each Point
- Each Sample Is Analyzed Separately, Representing Each Point In The Field
- Each Point Is Spread To The Exact Nutrient Need

Positive Effects

- Increased Fertility
- Increased Production
- Decreased Nutrient Runoff
- Increased Knowledge of Certain Areas Within a Field
- Pretty Maps
- Cost Savings???

Negative Effects



- Cost Savings???

Conventional Method Cost Analysis Comparison & Nutrient Requirements

- Pasture 1 & 2

41.77 Acres

0 lbs. of Lime

83 lbs./Ac. P205

143 lbs./Ac. K20

- Pasture 3 & 4

33.69 Acres

0 lbs. of Lime

93 lbs./Ac. P205

90 lbs./Ac. K20

Expenses Pasture 1 & 2

Conventional Method

- 0 tons lime @ \$25.00 / ton \$ 0.00
- Spreading Fee \$5.50 / ton (41.77 acres)
\$ 229.74
- 3.76 ton 18-46-0 @ \$305.00 / ton \$1,146.80
- 5.01 ton 18-0-60 @ \$220.00 / ton \$1,102.80
- Sampling Fee @ \$3.00/ Acre on 41.77 acres
\$ 125.31
- Total Spreading, Sampling & Nutrient Application
on Pasture 1 & 2 \$ 2,604.65

Expenses Pastures 3 & 4 Conventional Method

- 0 tons lime @ \$25.00 / ton \$ 0.00
- Spreading Fee \$5.50 / ton (33.69 acres)
\$ 185.30
- 3.42 ton 0-46-0 @ \$305.00 / ton \$1,043.10
- 2.5 ton 0-0-60 @ \$220.00 / ton \$ 550.00
- Sampling Fee @ \$3.00/ Acre on 33.69 acres
\$ 101.07
- Total Spreading, Sampling & Nutrient
Application on Pasture 3 & 4 \$ 1,879.47

Conventional Method Total Expenses on Pastures 1 - 4

• Pasture 1 & 2 Expenses	\$ 2,604.65
• Pasture 3 & 4 Expenses	<u>\$ 1,879.47</u>
Total	\$ 4,484.12

Precision Method

- 47 sample points were analyzed
- Points were chosen on topography, not grid sampling
- Each sample point had 5 core samples (N, S, E, W and Center of point.
- The core samples are then mixed to represent that particular sample point.

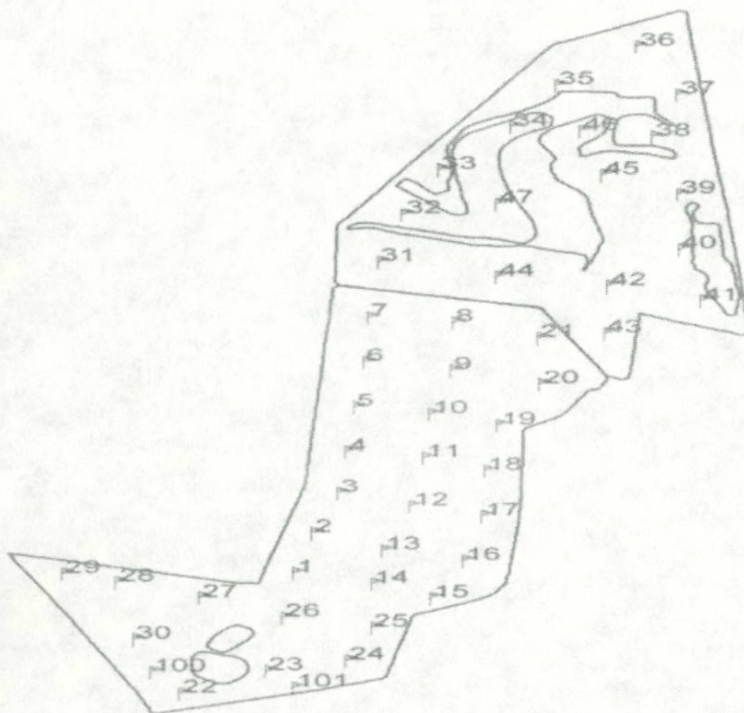
Projection : Universal Transverse Mercator
Datum : WGS Datum (1984)
Zone Number : 17
Hemisphere : North

Scale 1 : 8337

1000 ft



KeeHill
Campbell Place
Field 1
Year 2004



04/14/05

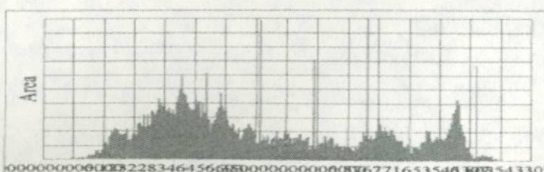
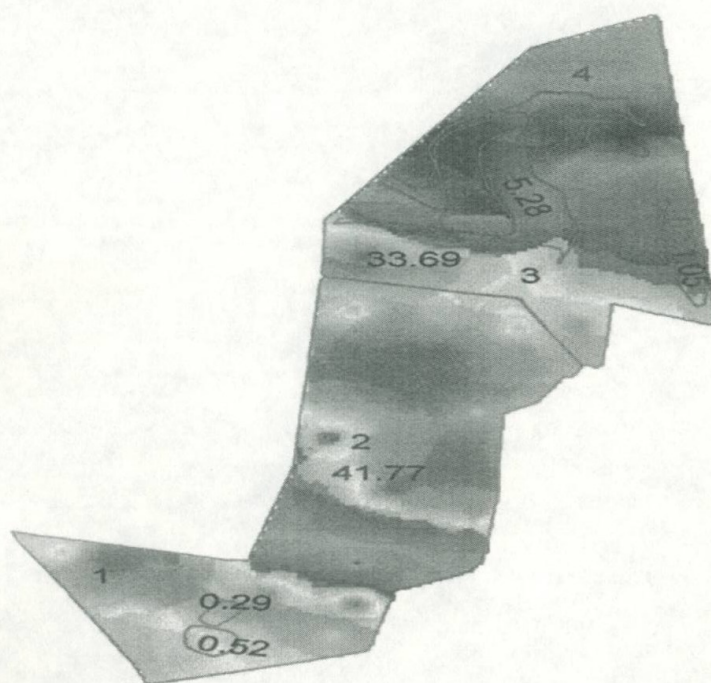


Pasture Precision Method Cost Analysis

- 0 Tons of Lime Spread Due to Small Amount Needed \$ 00.00
- 7.31 ton 18-46-0 @ \$305.00 / ton \$ 2,226.50
- 4.81 ton 0-0-60 @ \$220.00 / ton \$ 1,058.20
- Sampling Fee 68.32 acres @ \$8.00 /Ac. \$ 546.56
- Fertilizer Spreading 68.32 Ac. @ \$9.00 /ac \$612.00
- Total Cost of Precision Method \$4,443.26

Scale 1 : 7482
1000 ft

Theme : PH
Total Area : 75.46 ac



Total Area :	75.46 ac
Mean:	6.319058357318514
Std. Dev.:	0.202330020465094



11/07/05



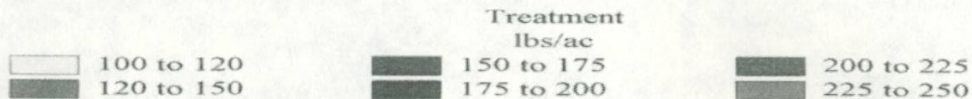
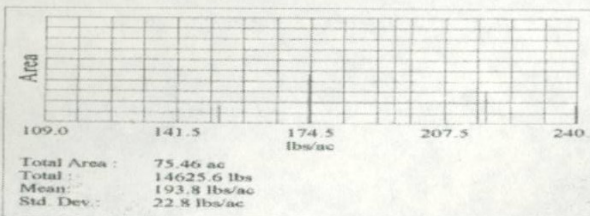
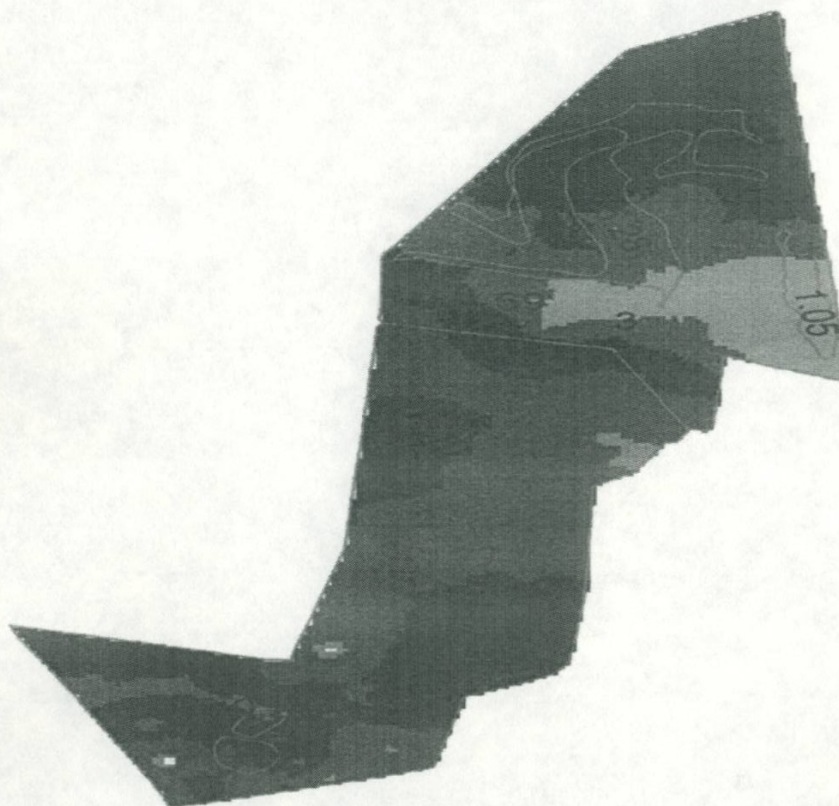
Projection : Universal Transverse Mercator
 Datum : WGS Datum (1984)
 Zone Number : 17
 Hemisphere : North

Scale 1 : 6859
 1000 ft

KeeHill
 Campbell Place
 Field 1
 Year2004
 0-46-0rx

Theme : 0-46-0rx

Total : 14625.6 lbs
 Total Area : 75.46 ac
 Average : 193.8 lbs/ac



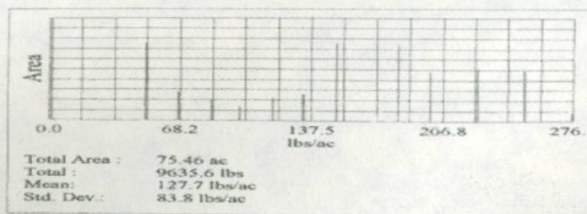
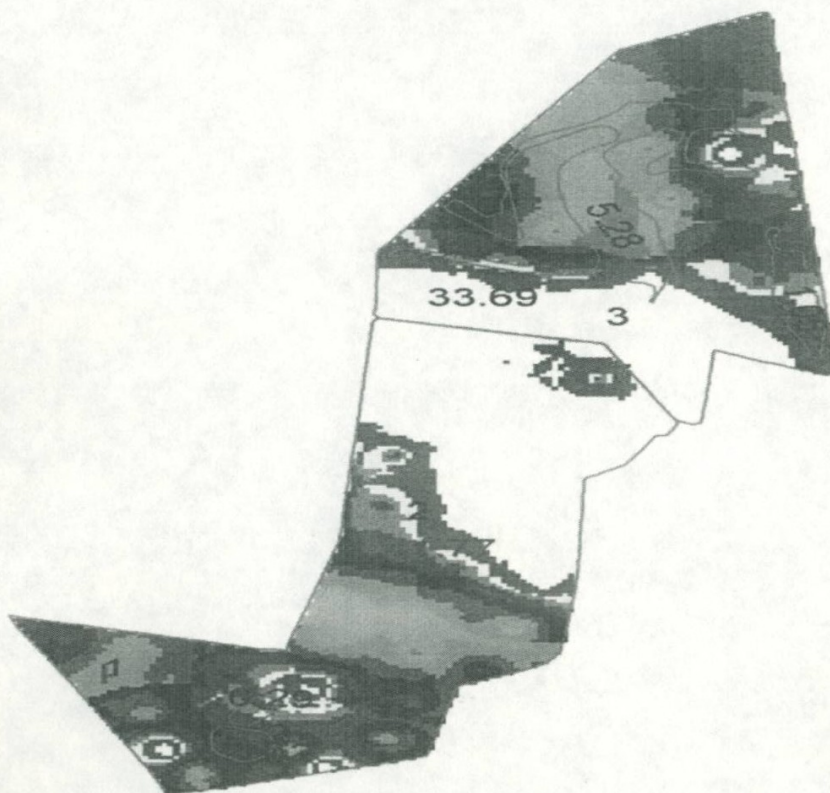
11/07/05

Projection : Universal Transverse Mercator
 Datum : WGS Datum (1984)
 Zone Number : 17
 Hemisphere : North

Scale 1 : 6859
 1000 ft

KeeHill
 Campbell Place
 Field 1
 Year 2004
 0-0-60rx

Theme : 0-0-60rx
 Total : 9635.6 lbs
 Total Area : 75.46 ac
 Average : 127.7 lbs/ac



Min. to 50
 50 to 65
 65 to 100

100 to 120
 120 to 150
 150 to 175

Treatment
 lbs/ac
 175 to 200
 200 to 225
 225 to 250

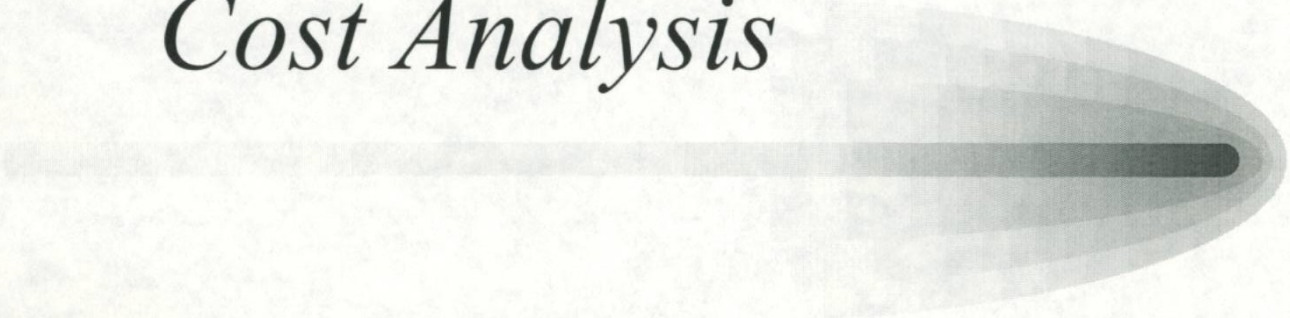
250 to 275
 275 to 300



11/07/05



Conventional VS. Precision Cost Analysis

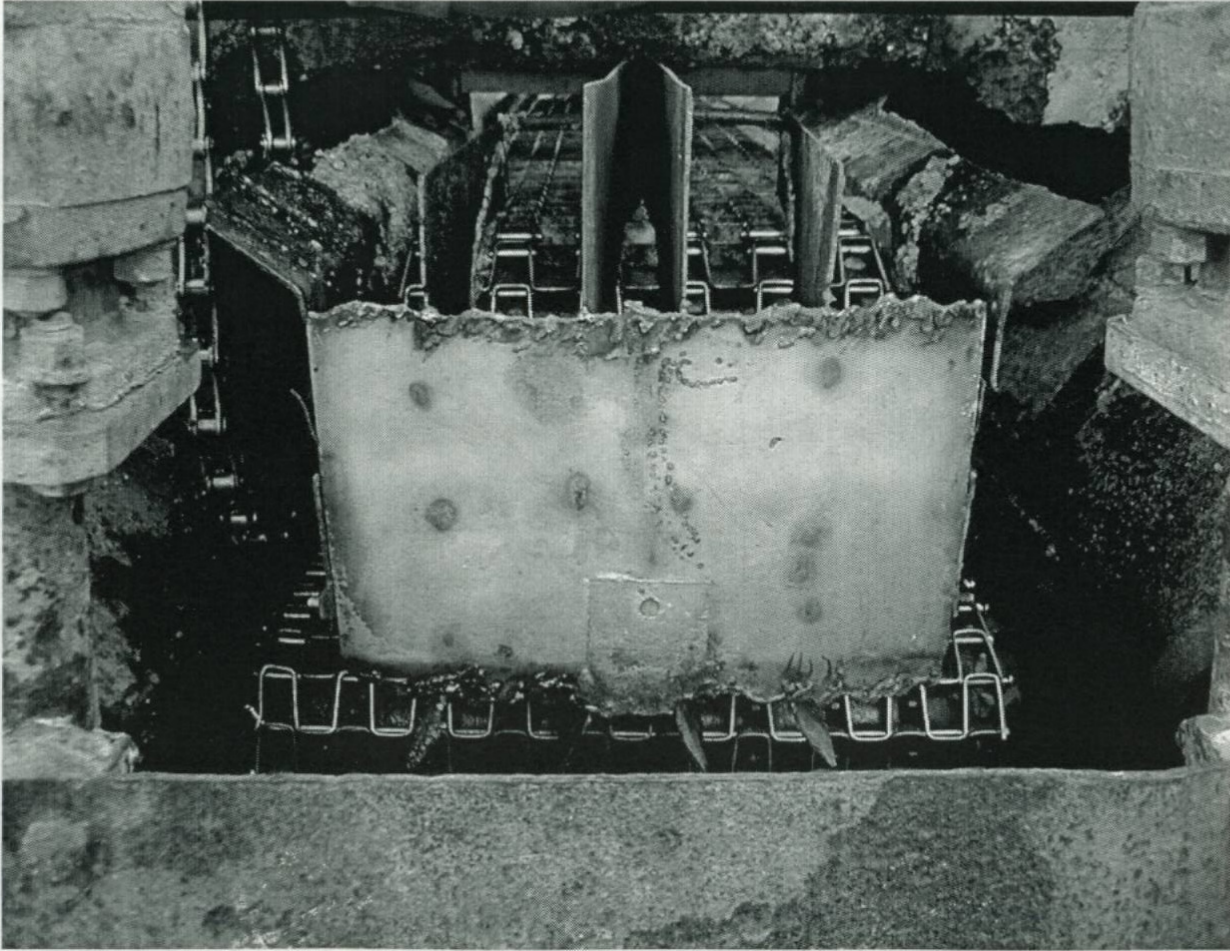


- Conventional Method Total Cost \$ 4,484.12
- Precision Method Total Cost \$ 4,443.26
- Precision Method Saved Producer \$ 40.86

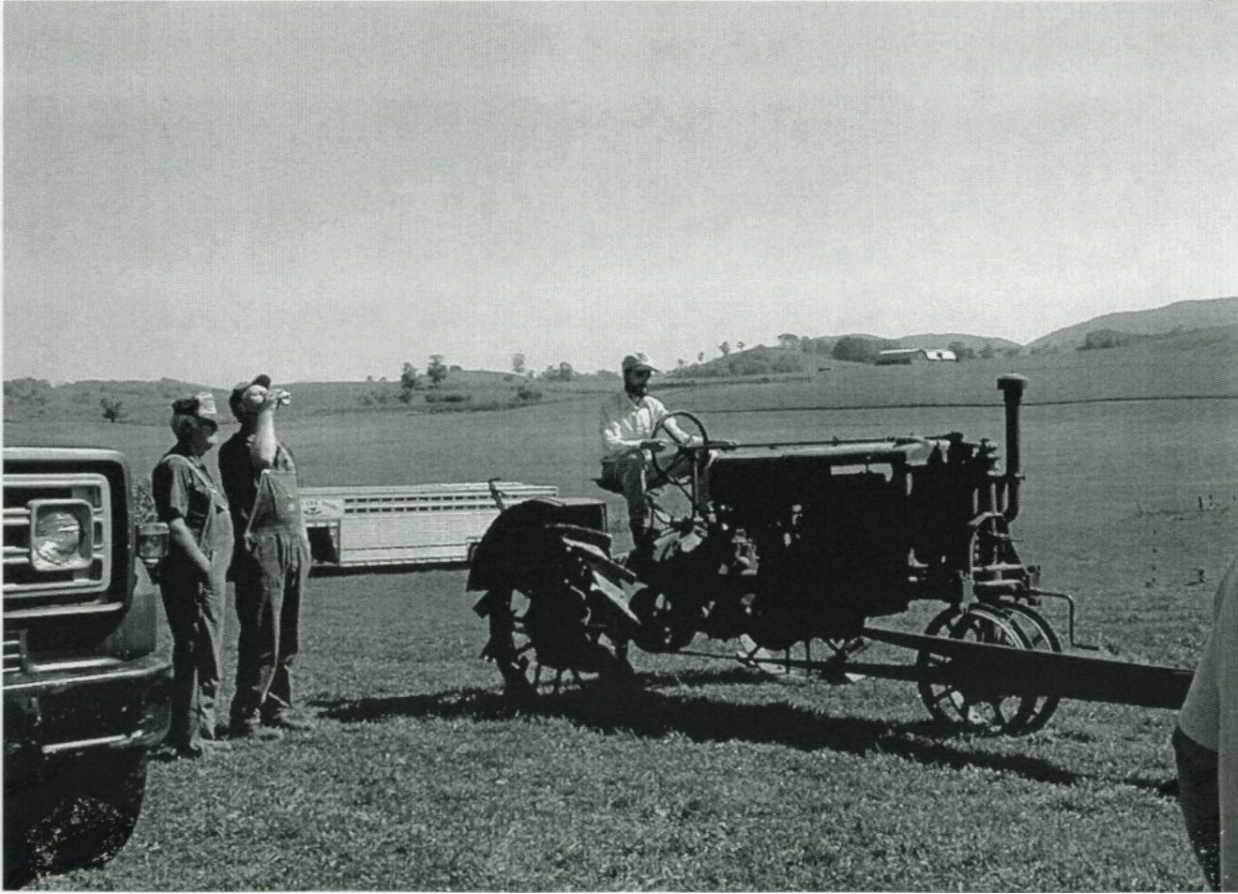
Precision Ag Equipment



Precision Ag Equipment



Not Precision Ag Equipment



Precision Ag Equipment



Not Precision Ag Equipment

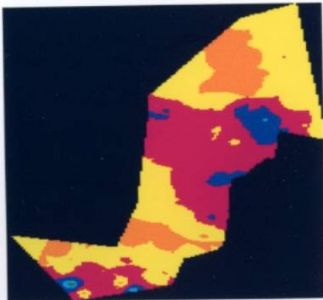


Precision Ag Equipment



Precision Agriculture

Precision agriculture has been widely used in the Midwest on large crop fields. In West Virginia our crop fields are much smaller and have less fertility variation than crop fields of the Midwest. West Virginia's pastures however show a promising future for the use of precision agriculture technology, due to our rolling hills and steep slopes, increased variations in soil fertility are common.



0-0-60 Application Map



Variable Rate Spreader Truck

Kee Hill Farms

Brian Wickline
HC 76 Box 70B
Union, WV 24983
Phone: 304-772-3003
Cell: 304-646-2424
E-mail: Brian.Wickline@mail.wvu.edu



Kee Hill Farms

A New Era in Fertilization

Precision Agriculture Technology Usage on Pasture Land in Monroe County, WV



Tel: 304-772-3361



Precision Agriculture: A New Era in Fertilization

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