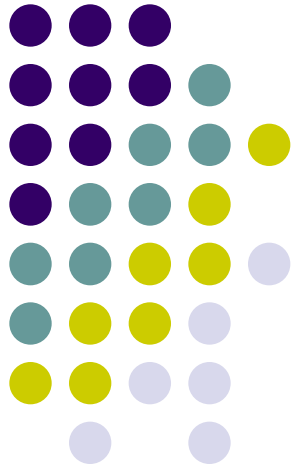
NUTRIENT EFFICIENCY AND MANAGEMENT CONFERENCE

JIM FASCHING
FIELD REPRESENTATIVE
MIDWEST LABORATORIES

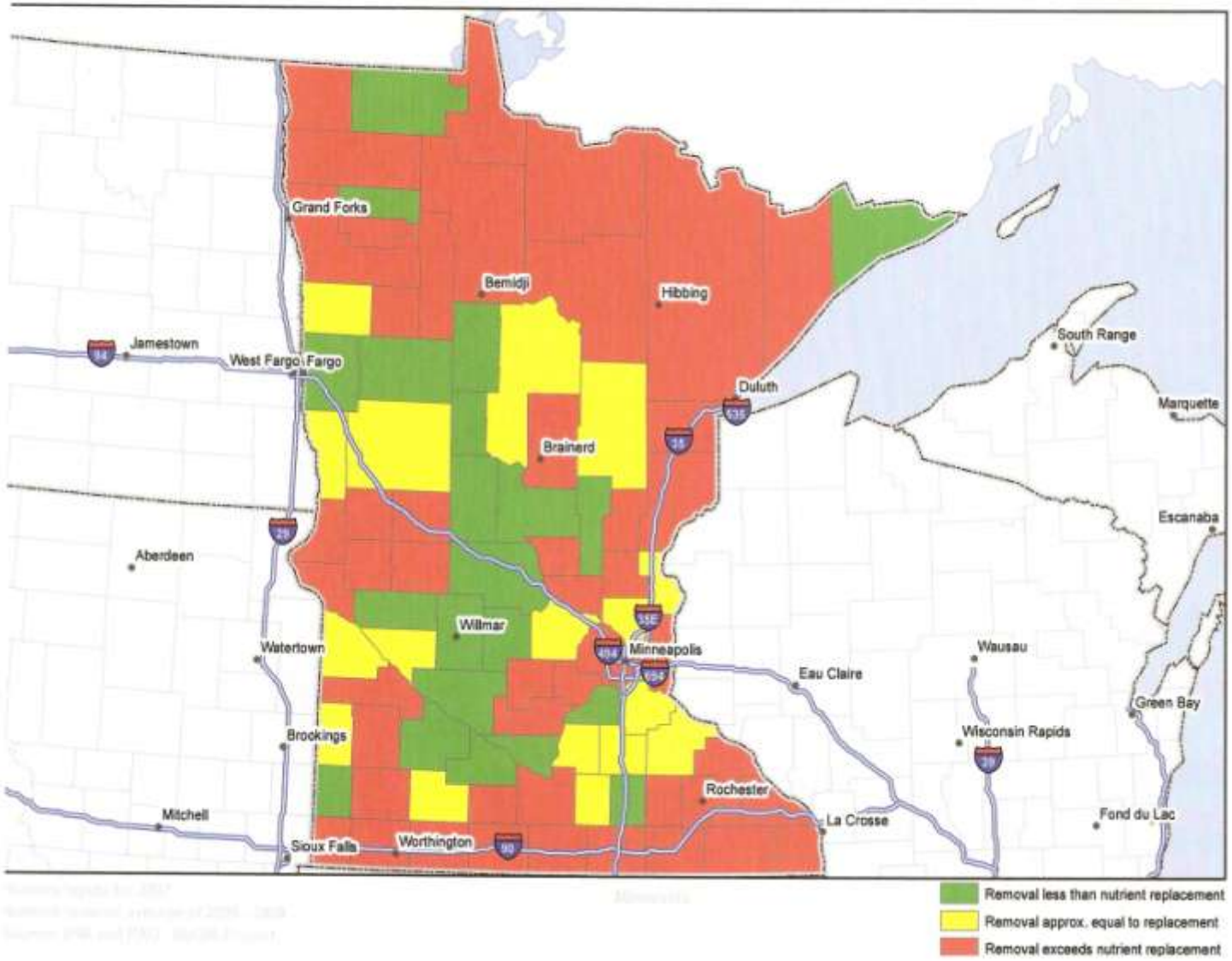


MIDWEST LABORATORIES
OMAHA, NE

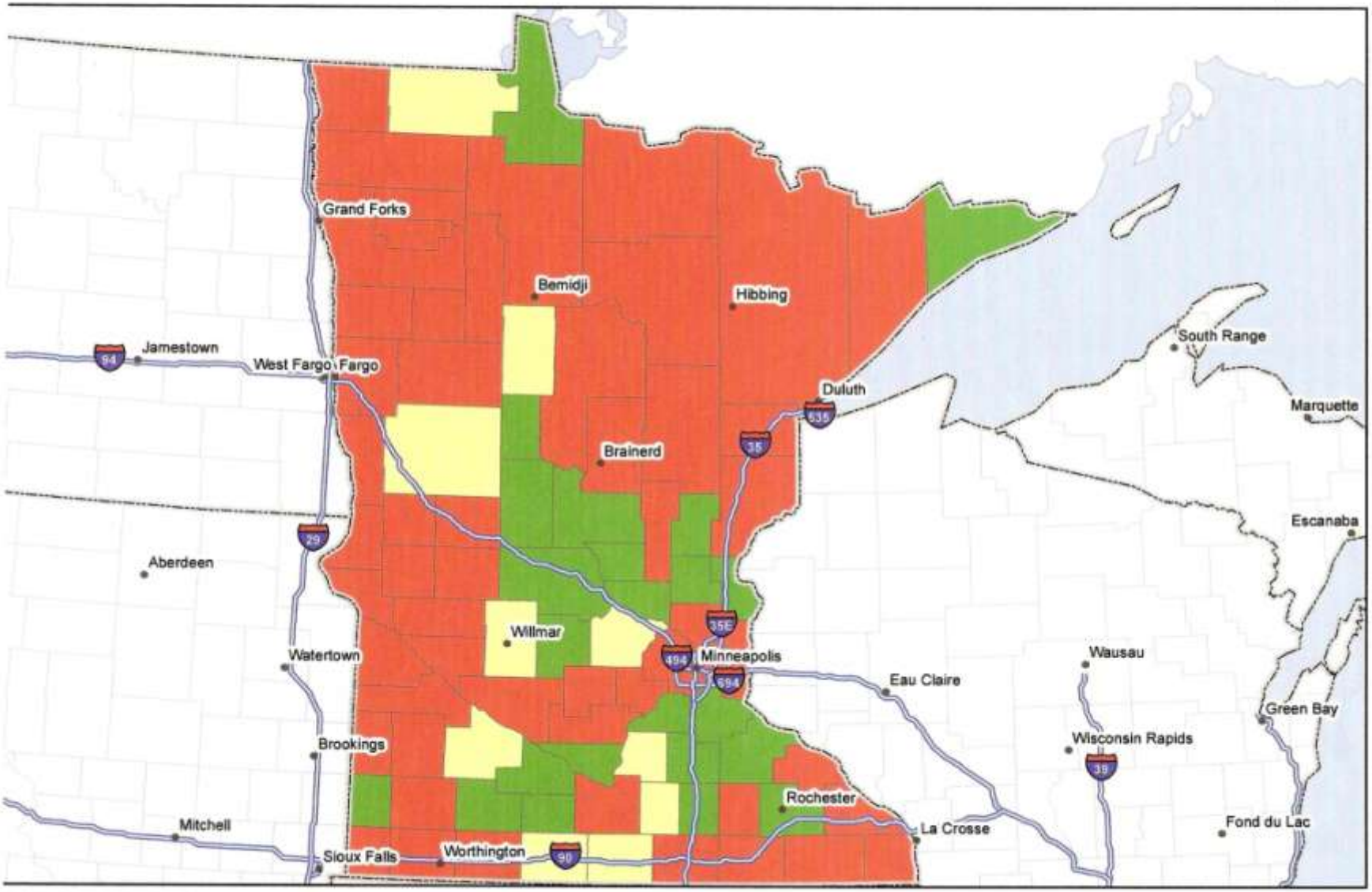
TOPICS

- SOIL TEST VALUES: Gaining, maintaining or losing ground.
- MANURE MANAGEMENT: Fertility effects, changes in manure composition.
- PLANT TISSUE TESTING: What are we seeing.

P Nutrient Balance Map

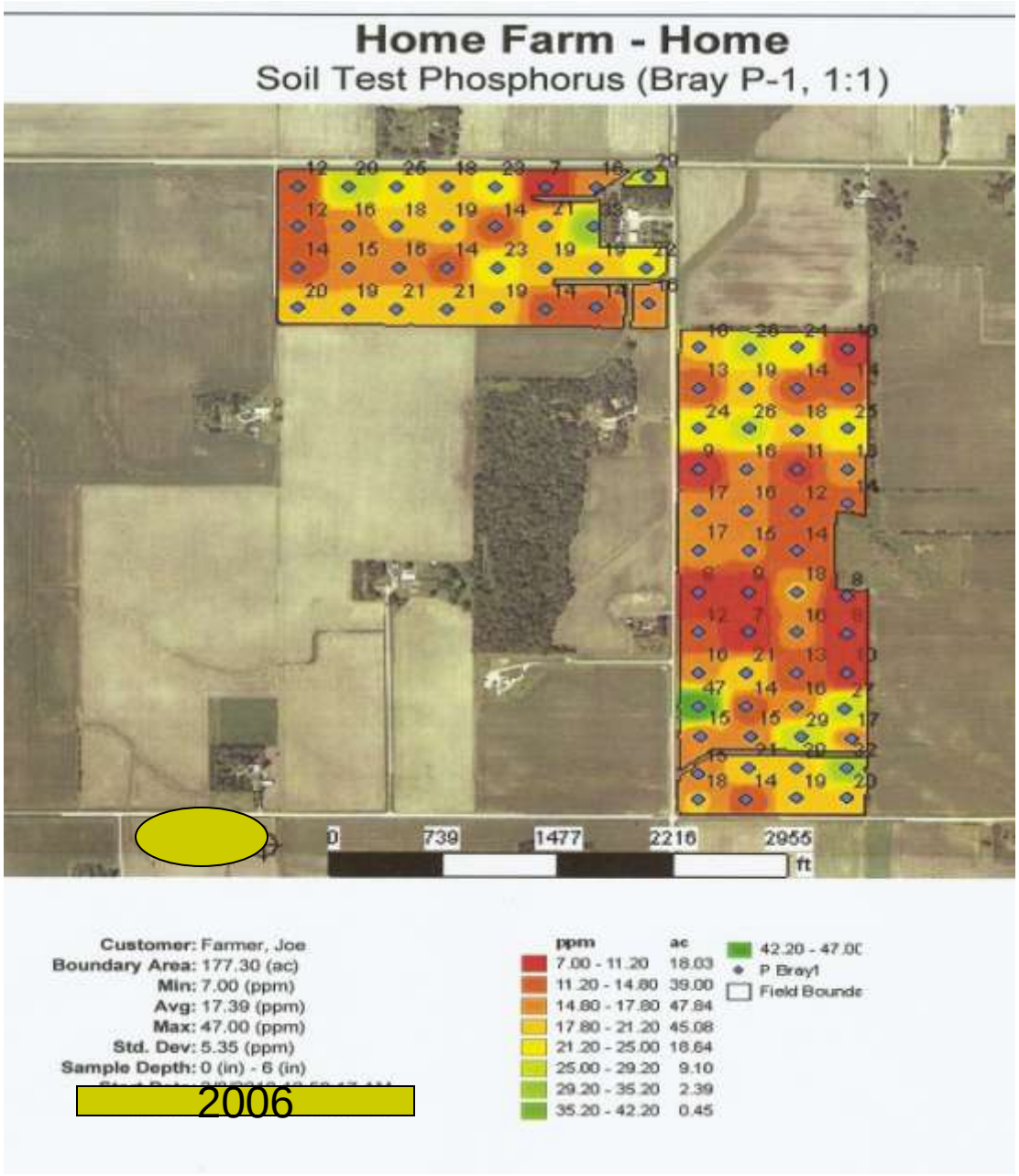


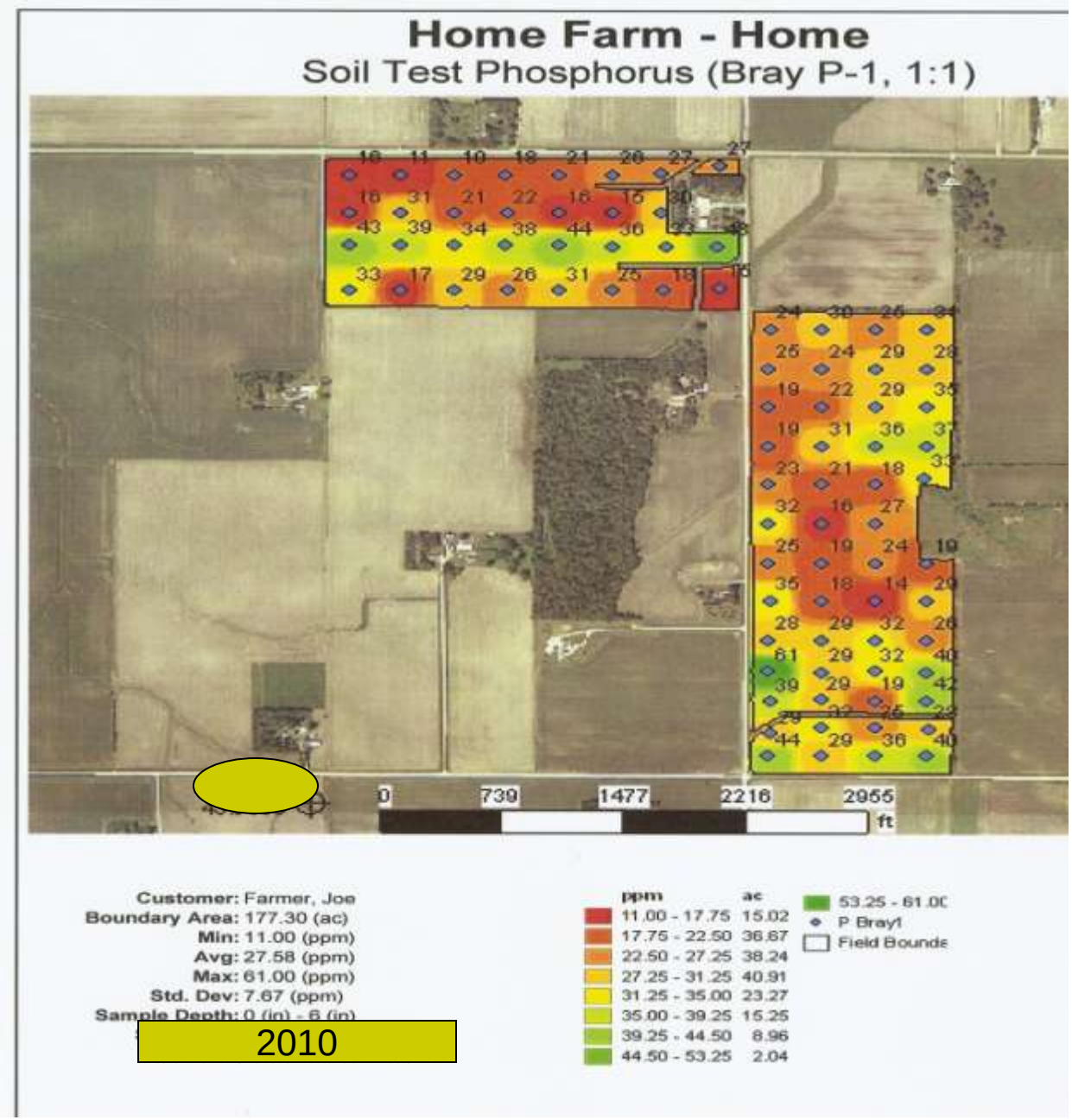
K Nutrient Balance Map

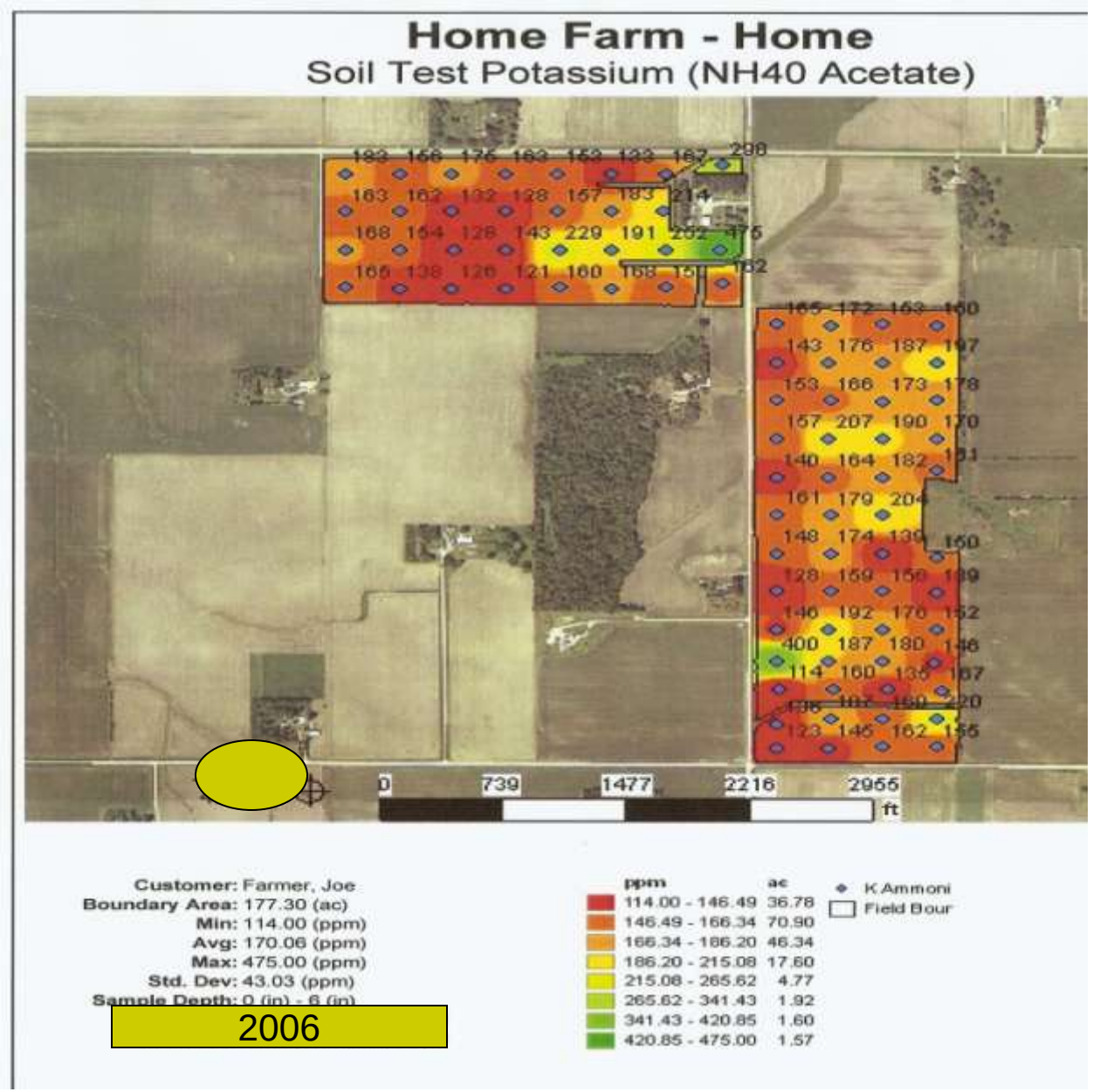


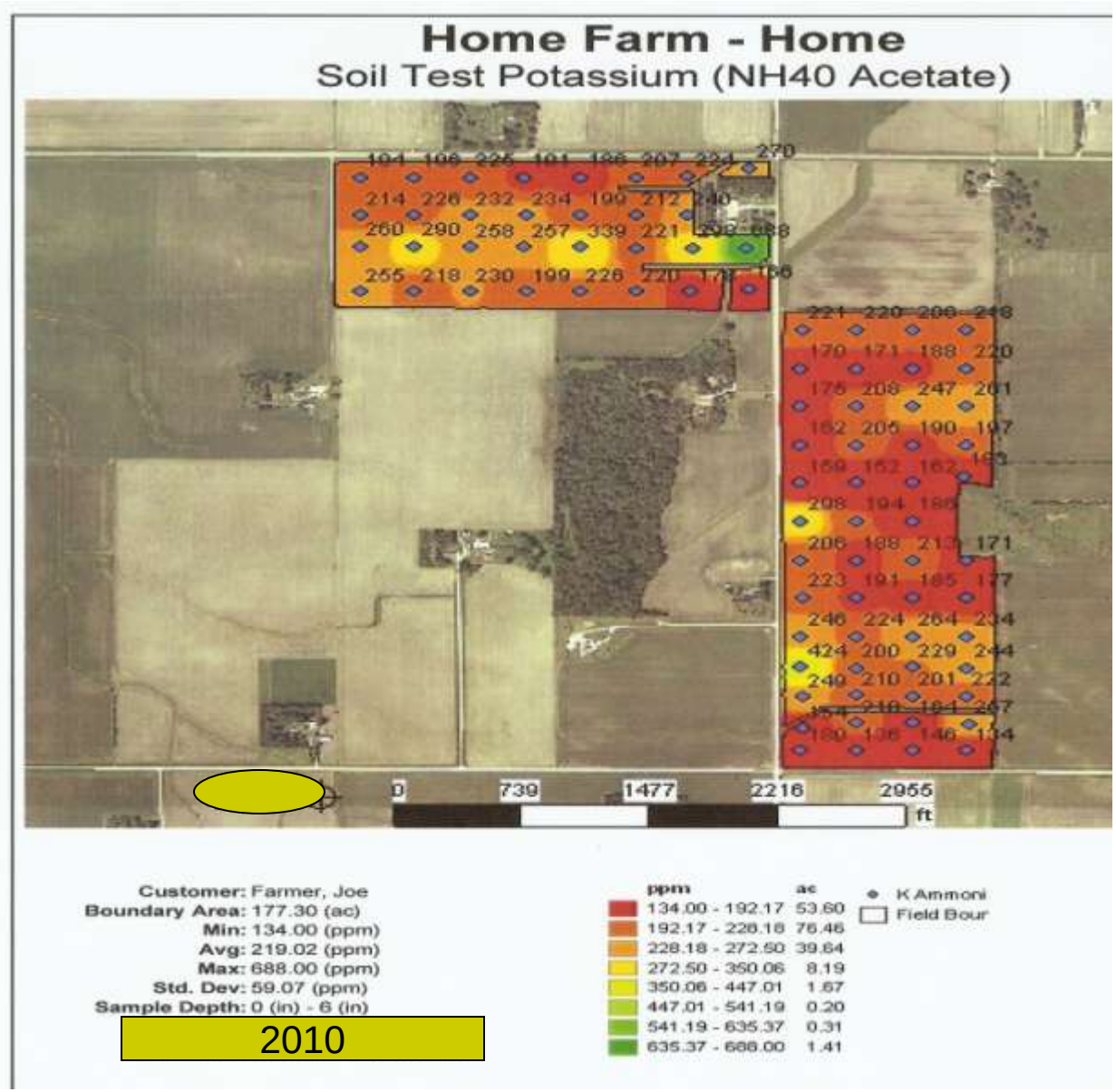
P & K VALUES FROM SE MN 2005 & 2010

YEAR	# OF SAMPLES	P1 VALUE (ppm)	K VALUE (ppm)
2005	52,871	30	162
2010	103,000	27	160


Home Farm - Home
Soil Test Phosphorus (Bray P-1, 1:1)
0
739
1477
2216
2955
ft
Customer: Farmer, Joe
Boundary Area: 177.30 (ac)
Min: 7.00 (ppm)
Avg: 17.39 (ppm)
Max: 47.00 (ppm)
Std. Dev: 5.35 (ppm)
Sample Depth: 0 (in) - 6 (in)
2006
ppm
ac
7.00 - 11.20 18.03
11.20 - 14.80 39.00
14.80 - 17.80 47.84
17.80 - 21.20 45.08
21.20 - 25.00 16.64
25.00 - 29.20 9.10
29.20 - 35.20 2.39
35.20 - 42.20 0.45
42.20 - 47.00
P Bray1
Field Bounds


Home Farm - Home
Soil Test Phosphorus (Bray P-1, 1:1)
0
739
1477
2216
2955
ft
Customer: Farmer, Joe
Boundary Area: 177.30 (ac)
Min: 11.00 (ppm)
Avg: 27.58 (ppm)
Max: 61.00 (ppm)
Std. Dev: 7.67 (ppm)
Sample Depth: 0 (in) - 6 (in)
ppm
ac
11.00 - 17.75 15.02
17.75 - 22.50 36.67
22.50 - 27.25 38.24
27.25 - 31.25 40.91
31.25 - 35.00 23.27
35.00 - 39.25 15.25
39.25 - 44.50 8.96
44.50 - 53.25 2.04
53.25 - 61.00
P Bray1
Field Bounds
2010


Home Farm - Home
Soil Test Potassium (NH40 Acetate)
0
739
1477
2216
2955
ft
Customer: Farmer, Joe
Boundary Area: 177.30 (ac)
Min: 114.00 (ppm)
Avg: 170.06 (ppm)
Max: 475.00 (ppm)
Std. Dev: 43.03 (ppm)
Sample Depth: 0 (in) - 6 (in)
ppm
ac
114.00 - 146.49 36.78
146.49 - 166.34 70.90
166.34 - 186.20 46.34
186.20 - 215.08 17.60
215.08 - 265.62 4.77
265.62 - 341.43 1.92
341.43 - 420.85 1.60
420.85 - 475.00 1.57
K Ammoni
Field Bour
2006


Home Farm - Home
Soil Test Potassium (NH40 Acetate)
0
739
1477
2216
2955
ft
Customer: Farmer, Joe
Boundary Area: 177.30 (ac)
Min: 134.00 (ppm)
Avg: 219.02 (ppm)
Max: 688.00 (ppm)
Std. Dev: 59.07 (ppm)
Sample Depth: 0 (in) - 6 (in)
2010
ppm
ac
134.00 - 192.17 53.60
192.17 - 228.18 76.46
228.18 - 272.50 39.64
272.50 - 350.06 8.19
350.06 - 447.01 1.67
447.01 - 541.19 0.20
541.19 - 635.37 0.31
635.37 - 688.00 1.41
K Ammoni
Field Bour

YIELD AVERAGES

2006	2010
CORN: 185-190 BU/A	CORN: 215 BU/A
SOYBEANS: 50 BU/A	SOYBEANS: 60 BU/A

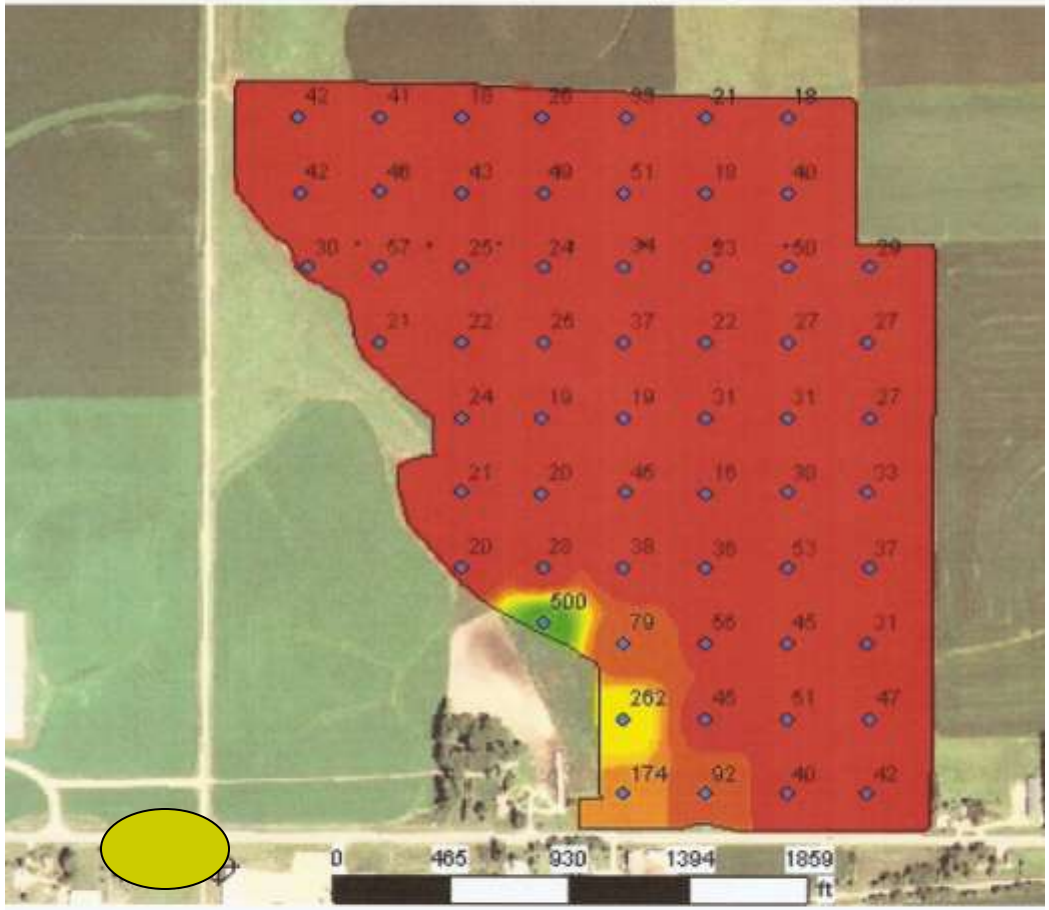
MANURE EFFECTS

MANURE VALUES:

- Hard to measure variability due to feed inputs, moisture levels in samples. Can see year to year variability.
- Phytase enzymes in feeding systems improves P utilization in rations and reduces P values in final manure product.
- Biological additives can also reduce N, P and K values in the final applied manure product.

East Farm - East 150

Soil Test Phosphorus (Bray P-1, 1:1)

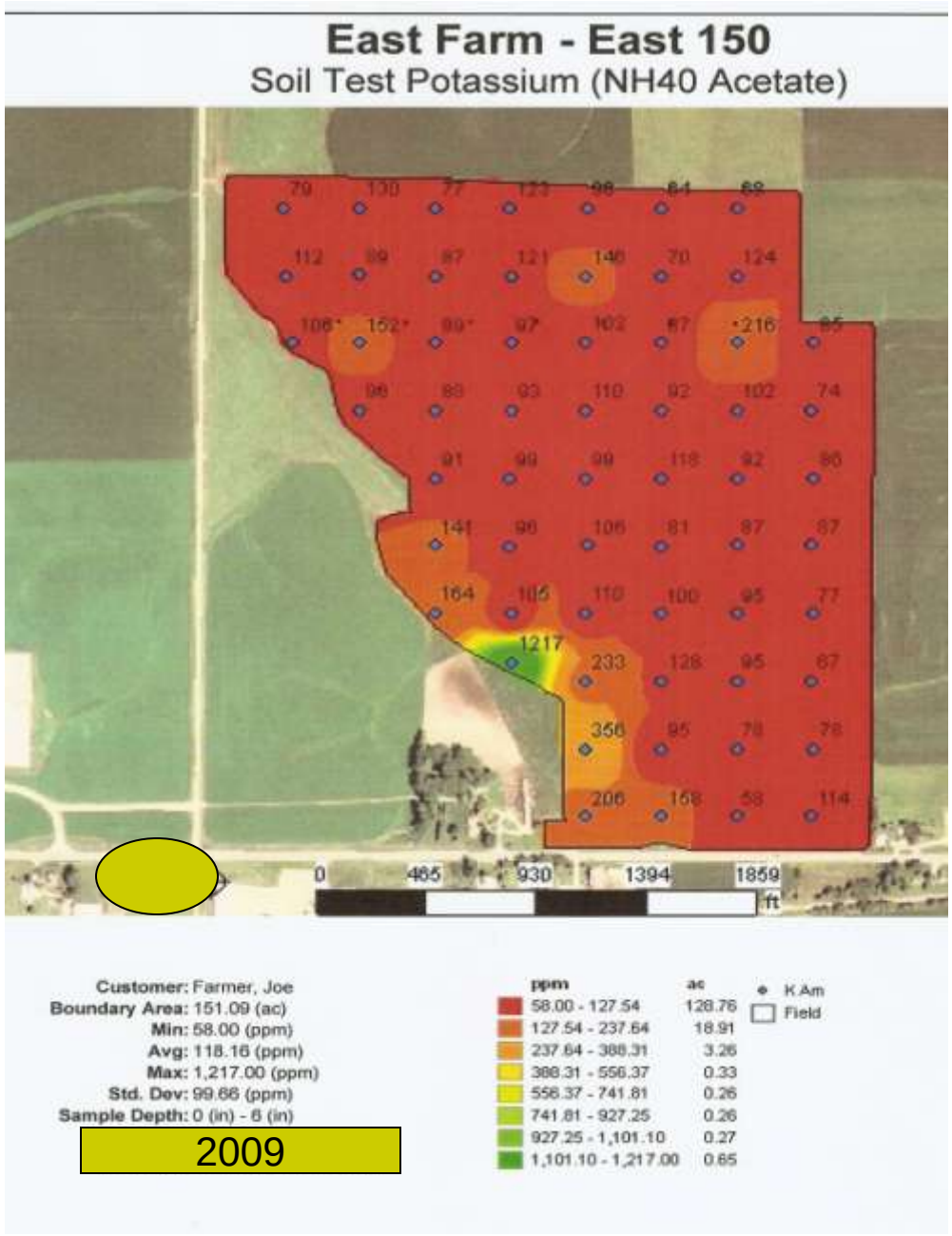


Customer: Farmer, Joe
Boundary Area: 151.09 (ac)
Min: 16.00 (ppm)
Avg: 44.75 (ppm)
Max: 500.00 (ppm)
Std. Dev: 49.01 (ppm)
Sample Depth: 0 (in) - 6 (in)

ppm	ac
16.00 - 57.14	139.90
57.14 - 122.48	6.13
122.48 - 182.98	3.09
182.98 - 228.96	0.83
228.96 - 282.20	1.54
282.20 - 342.70	0.20
342.70 - 405.62	0.19
405.62 - 463.70	0.26
463.70 - !	

P Brayl
Field Box

2009


East Farm - East 150
Soil Test Potassium (NH40 Acetate)
0
465
930
1394
1859
ft
Customer: Farmer, Joe
Boundary Area: 151.09 (ac)
Min: 58.00 (ppm)
Avg: 118.16 (ppm)
Max: 1,217.00 (ppm)
Std. Dev: 99.66 (ppm)
Sample Depth: 0 (in) - 6 (in)
2009
ppm
ac
58.00 - 127.54 128.76
127.54 - 237.64 18.91
237.64 - 388.31 3.26
388.31 - 556.37 0.33
556.37 - 741.81 0.26
741.81 - 927.25 0.26
927.25 - 1,101.10 0.27
1,101.10 - 1,217.00 0.65
K Am
Field

Project PO :

Bio-Solids Analysis Report

VIEW YOUR SUBMITTAL FORM

Parameters	Analysis as Received	Nutrients lbs/ton	Est. First Year Availability lbs/ton
Ammonium Nitrogen (N)	0.15 %	3.0	1
Organic Nitrogen (N)	0.15 %	3.1	1
Total Nitrogen (N)	0.30 %	6.1	3
Phosphorus (P_2O_5)	0.15 %	3.1	2
Potassium (K_2O)	0.14 %	2.7	2
Sulfur (S)	0.03 %	0.6	0
Calcium (Ca)	0.26 %	5.2	4
Magnesium (Mg)	0.06 %	1.3	1
Sodium (Na)	0.05 %	0.9	1
Copper (Cu)	5 ppm	0.01	0.01
Iron (Fe)	338 ppm	0.68	0.47
Manganese (Mn)	27 ppm	0.05	0.04
Zinc (Zn)	11 ppm	0.02	0.02
Moisture	45.1 %		
Total Solids	54.9 %	1098.0	
Total Salts		13.1	
pH	8.6		

n.d. Non Detect

First year availability of nitrogen is calculated based on pre-plant application with incorporation. Nitrogen available from previous year's application not considered.
Total manure salts should not exceed 500 lbs/acre. Less than 500 lbs/acre if annual rainfall is less than 25 inches and/or the soil CEC is less than 12 meq/100g. Salt contributions from commercial fertilizer applications must also be considered.
Soil test yearly to monitor phosphorus levels, organic matter, pH, and micronutrients. Spring soil test for residual nitrate - make accurate sidedress recommendations!
Nitrogen availabilty will vary with methods of application and field conditions. The nitrogen availability values used on a manure management plan must comply with state regulations. These regulations vary from state to state.

Project PO :

Bio-Solids Analysis Report

VIEW YOUR SUBMITTAL FORM

	Analysis	Nutrients	Est. First Year Availability
Parameters	as Received	lbs/1000gals	lbs/1000gals
Ammonium Nitrogen (N)	0.17 %	14.4	14
Organic Nitrogen (N)	0.13 %	11.0	4
Total Nitrogen (N)	0.30 %	25.4	18
Phosphorus (P_2O_5)	0.17 %	14.1	10
Potassium (K_2O)	0.31 %	26.3	24
Sulfur (S)	0.05 %	3.8	2
Calcium (Ca)	0.24 %	20.1	14
Magnesium (Mg)	0.09 %	7.2	5
Sodium (Na)	0.11 %	8.9	6
Copper (Cu)	45 ppm	0.38	0.27
Iron (Fe)	196 ppm	1.66	1.16
Manganese (Mn)	25 ppm	0.21	0.15
Zinc (Zn)	38 ppm	0.32	0.22
Moisture	94.1 %		
Total Solids	5.9 %	498.6	
Total Salts		76.9	
pH	8.0		

n.d. Non Detect

First year availability of nitrogen is calculated based on pre-plant application with incorporation. Nitrogen available from previous year's application not considered.
Total manure salts should not exceed 500 lbs/acre. Less than 500 lbs/acre if annual rainfall is less than 25 inches and/or the soil CEC is less than 12 meq/100g. Salt contributions from commercial fertilizer applications must also be considered.
Soil test yearly to monitor phosphorus levels, organic matter, pH, and micronutrients. Spring soil test for residual nitrate - make accurate sidedress recommendations!
Nitrogen availabilty will vary with methods of application and field conditions. The nitrogen availability values used on a manure management plan must comply with state regulations. These regulations vary from state to state.

PLANT TISSUE TESTING

Plants

Midwest Laboratories

Midwest Laboratories, Inc. · 13611 'B' Street · Omaha, NE 68144
(402) 334-7770

ACCOUNT 6647
YOUR COMPANY NAME
JOHN DOE
111 1ST ST, YOUR TOWN
68144

GROWER:
JOHN DOE

DATE OF REPORT:
December 30, 2010

PLANT ANALYSIS REPORT

D or Deficient L or Low S or Sufficient H or High E or Excessive

VIEW YOUR SUBMITTAL FORM

			REPORT OF ANALYSIS - PERCENT							PARTS PER MILLION					
SAMPLE ID / LAB NUM	DATE ANALYZED	CROP / STAGE	N NITROGEN	P PHOS-PHORUS	K POTAS-SIUM	Mg MAG-NESIUM	Ca CALCIUM	S SULFUR	Na SODIUM	Fe IRON	Mn MANGA-NESE	B BORON	Cu COPPER	Zn ZINC	NO_3-N NITRATE NITROGEN
CORN 1	May 17, 2010	CORN 1	4.30	0.55	1.55	0.52	0.45	0.22	0.001	141	95	10	10	50	
3125608			S-L	S-H	D	E	L	L	S	L-D	L	L	S	S-H	
NORMS			4.700	0.480	3.700	0.300	0.650	0.300	0.010	190.00	114.00	13.00	11.00	40.00	
CORN 2	May 17, 2010	CORN 1	3.40	0.32	1.02	0.51	0.92	0.19	0.001	142	11	8	8	32	
3125609			D	L-D	D	H-E	H	L-D	S	L-D	D	D	L	S-L	
NORMS			4.700	0.480	3.700	0.300	0.650	0.300	0.010	190.00	114.00	13.00	11.00	40.00	
CORN 3	May 17, 2010	CORN 1	1.90	0.45	2.90	0.53	0.45	0.13	0.001	88	32	10	11	25	
3125610			D	S	L-D	E	L	D	S	D	D	L	S	D	
NORMS			4.700	0.480	3.700	0.300	0.650	0.300	0.010	190.00	114.00	13.00	11.00	40.00	
ALF	May 17, 2010	ALFALFA 1	4.85	0.42	2.62	0.48	1.51	0.38	0.004	72	51	43	11	51	
3125611			S	S	S	S	S-L	S	S	D	S-L	S-L	S	H-E	
NORMS			4.800	0.400	2.700	0.500	2.000	0.400	0.050	110.00	60.00	50.00	11.00	36.00	
SOYBEAN 1	May 17, 2010	BEANS 1	3.80	0.40	2.01	0.50	1.21	0.38	0.001	101	25	32	13	41	
3125612			D	S	S-L	S	S	S	S	S	D	L	S	S	
NORMS			5.200	0.380	2.200	0.500	1.200	0.360	0.020	95.00	58.00	41.00	13.00	39.00	
SOYBEAN 2	May 17, 2010	BEANS 1	4.89	0.41	1.49	0.51	0.89	0.28	0.001	121	21	25	10	34	
3125613			S-L	S	D	S	S-L	S-L	S	S-H	D	D	L	S-L	
NORMS			5.200	0.380	2.200	0.500	1.200	0.360	0.020	95.00	58.00	41.00	13.00	39.00	

PLANT TISSUE SAMPLES FROM 2005 AND 2010

- TOTAL: 2005 – 57 samples.
- TOTAL: 2010 – 2039 samples.

THANK YOU FOR YOUR TIME!

JIM FASCHING
MIDWEST LABORATORIES
www.midwestlabs.com
jfasching@midwestlabs.com