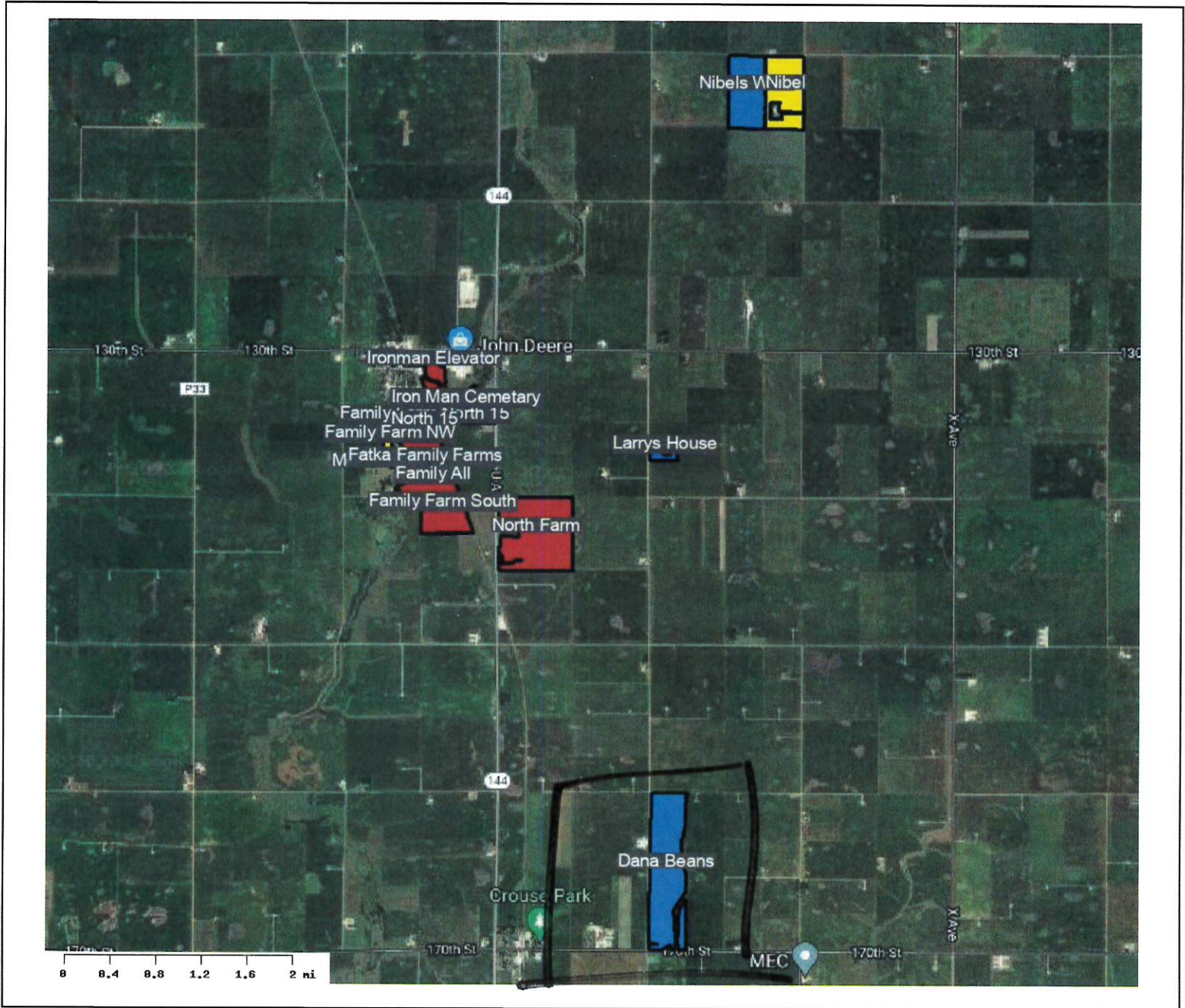


Grower: FATKA, LARRY  
Farm: Fatka Larry  
Area: 1020.36 acres

Sampling  
Overview



2021

2018

2017

2014

Location	Grower	Farm	Field	Area	Centroid
Paton	FATKA, LARRY	Fatka Larry	Dana Farm	150.96 acres	42.11514, -94.220758



	Min	Max	Avg
P	3.0	115.0	36.9
K	97.0	432.0	183.5
Mg	150.0	522.0	302.2
Ca	1279	6000	3257
S	8.0	21.0	12.2
Zn	0.7	8.2	2.1
pH	5.1	7.9	6.5
bpH	6.00	7.10	6.78
OM	1.9	9.8	4.1
CEC	11.7	33.2	21.2
%K	1.0	7.2	2.3
%Mg	4.9	19.5	12.3
%Ca	46.7	92.2	74.2
%H	6.2	38.0	18.9

Sample Date	Soil Lab
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2017-08-01 Midwest Labs

ID	P ppm	K ppm	Mg ppm	Ca ppm	S ppm	Zn ppm	pH	bpH	OM %	CEC	%K %	%Mg %	%Ca %	%H %
1	115.0	432.0	166.0	1790	17.0	2.3	5.5	6.60	3.3	15.4	7.2	9.0	58.1	25.7
2	43.0	179.0	156.0	1646	21.0	1.6	5.4	6.60	2.6	14.0	3.3	9.3	58.8	28.6
3	10.0	133.0	288.0	2493	15.0	1.0	7.5	7.10	2.8	15.2	2.2	15.8	82.0	---
4	80.0	312.0	450.0	5510	12.0	3.4	7.2	7.10	6.4	32.1	2.5	11.7	85.8	---
5	59.0	252.0	405.0	3669	10.0	2.3	6.0	6.60	5.0	26.3	2.5	12.8	69.8	14.9
6	33.0	203.0	419.0	3317	11.0	1.6	6.1	6.60	4.1	24.0	2.2	14.5	69.1	14.2
7	56.0	191.0	409.0	3178	11.0	1.9	5.9	6.60	4.2	23.9	2.0	14.3	66.5	17.2
8	34.0	141.0	275.0	2419	11.0	1.8	6.1	6.70	2.8	17.1	2.1	13.4	70.7	13.8
9	29.0	143.0	214.0	1823	11.0	1.2	5.8	6.70	2.4	13.9	2.6	12.8	65.6	19.0
10	16.0	116.0	318.0	1997	14.0	0.7	6.2	6.70	2.4	14.7	2.0	18.0	67.9	12.1
11	25.0	103.0	244.0	1781	10.0	1.0	5.8	6.70	2.5	13.8	1.9	14.7	64.5	18.9

ID	P ppm	K ppm	Mg ppm	Ca ppm	S ppm	Zn ppm	pH	bpH	OM %	CEC	%K %	%Mg %	%Ca %	%H %
12	14.0	97.0	262.0	4282	10.0	1.0	7.8	7.10	4.0	23.8	1.0	9.2	89.8	---
13	25.0	143.0	321.0	2919	12.0	0.7	7.4	7.10	2.9	17.6	2.1	15.2	82.7	---
14	23.0	109.0	380.0	3062	17.0	1.9	7.0	7.10	3.2	18.8	1.5	16.8	81.7	---
15	61.0	261.0	388.0	4149	15.0	5.3	6.4	6.60	8.8	27.0	2.5	12.0	76.8	8.7
16	13.0	133.0	365.0	3936	20.0	4.7	7.2	7.10	9.8	23.1	1.5	13.2	85.3	---
17	20.0	219.0	352.0	3514	14.0	5.3	6.8	7.10	8.5	21.1	2.7	13.9	83.4	---
18	24.0	259.0	238.0	5024	15.0	3.2	7.6	7.10	9.1	27.8	2.4	7.1	90.5	---
19	16.0	317.0	156.0	4847	16.0	4.9	7.8	7.10	7.0	26.3	3.1	4.9	92.0	---
20	11.0	246.0	159.0	4575	13.0	1.9	7.9	7.10	5.0	24.8	2.5	5.3	92.2	---
21	68.0	329.0	302.0	4087	10.0	3.4	6.4	6.70	6.1	26.2	3.2	9.6	78.0	9.2
22	93.0	262.0	227.0	2278	12.0	1.1	6.1	6.70	3.0	16.3	4.1	11.6	69.9	14.4
23	36.0	194.0	231.0	2311	11.0	0.9	6.5	6.80	3.2	15.1	3.3	12.7	76.5	7.5
24	59.0	163.0	250.0	2193	10.0	1.1	7.8	7.10	1.9	13.5	3.1	15.4	81.5	---
25	38.0	136.0	227.0	1976	10.0	1.5	6.1	6.70	2.7	14.1	2.5	13.4	70.1	14.0
26	18.0	126.0	275.0	2261	12.0	1.0	6.5	6.80	2.3	15.0	2.2	15.3	75.4	7.1
27	16.0	115.0	235.0	2108	13.0	0.8	6.1	6.70	2.4	14.9	2.0	13.1	70.7	14.2
28	21.0	194.0	274.0	5511	13.0	2.2	7.7	7.10	5.4	30.3	1.6	7.5	90.9	---
29	5.0	149.0	277.0	5647	8.0	2.1	7.8	7.10	4.4	30.9	1.2	7.5	91.3	---
30	40.0	136.0	324.0	2400	8.0	1.9	5.5	6.50	3.8	20.3	1.7	13.3	59.1	25.9
31	43.0	121.0	185.0	1279	11.0	1.9	5.1	6.00	2.7	13.3	2.3	11.6	48.1	38.0
32	18.0	123.0	276.0	3274	8.0	0.8	7.6	7.10	2.8	19.0	1.7	12.1	86.2	---
33	38.0	127.0	298.0	2013	12.0	1.6	5.3	6.00	3.6	18.7	1.7	13.3	53.8	31.2
34	31.0	155.0	384.0	2997	10.0	1.6	5.8	6.50	4.0	23.0	1.7	13.9	65.2	19.2
35	31.0	140.0	297.0	2141	10.0	1.5	5.5	6.50	3.1	18.3	2.0	13.5	58.5	26.0
36	36.0	121.0	235.0	2143	11.0	1.3	5.7	6.60	2.9	16.5	1.9	11.9	64.9	21.3
37	21.0	192.0	271.0	4957	13.0	2.0	7.7	7.10	3.9	27.5	1.8	8.2	90.0	---
38	9.0	153.0	276.0	5032	9.0	1.2	7.8	7.10	4.5	27.9	1.4	8.2	90.4	---
39	51.0	318.0	330.0	5653	10.0	2.2	7.4	7.10	5.7	31.8	2.6	8.6	88.8	---
40	80.0	373.0	345.0	5769	9.0	2.9	7.5	7.10	6.5	32.7	2.9	8.8	88.3	---
41	58.0	166.0	254.0	2260	16.0	2.3	5.5	6.50	3.2	18.7	2.3	11.3	60.4	26.0
42	15.0	113.0	234.0	1499	15.0	1.3	5.9	6.70	1.9	11.7	2.5	16.7	64.1	16.7
43	31.0	132.0	150.0	1435	10.0	1.8	5.4	6.60	2.4	12.3	2.8	10.2	58.3	28.7
44	33.0	168.0	247.0	2055	10.0	3.3	5.8	6.60	3.1	15.8	2.7	13.0	65.0	19.3
45	30.0	165.0	294.0	2800	10.0	2.0	6.6	6.80	4.0	18.0	2.4	13.6	77.8	6.2
46	25.0	126.0	303.0	2276	11.0	1.3	6.7	7.10	2.1	14.2	2.3	17.8	79.9	---
47	35.0	146.0	199.0	1443	11.0	1.0	5.3	6.10	2.5	13.4	2.8	12.4	53.8	31.0
48	61.0	160.0	271.0	1855	13.0	2.5	5.3	6.00	3.3	17.3	2.4	13.1	53.6	30.9
49	29.0	200.0	401.0	5687	14.0	2.8	7.5	7.10	5.6	32.3	1.6	10.3	88.1	---
50	66.0	351.0	392.0	5735	15.0	3.3	7.7	7.10	5.5	32.8	2.7	10.0	87.3	---
51	3.0	182.0	323.0	6000	16.0	8.2	7.9	7.10	5.8	33.2	1.4	8.1	90.5	---
52	63.0	159.0	434.0	3653	11.0	3.0	6.3	6.70	4.6	24.9	1.6	14.5	73.4	10.5
53	13.0	174.0	302.0	5235	9.0	1.9	7.9	7.10	4.0	29.1	1.5	8.6	89.9	---
54	48.0	180.0	402.0	4381	13.0	2.0	6.8	7.10	4.4	25.7	1.8	13.0	85.2	---
55	60.0	259.0	398.0	3630	11.0	2.0	6.5	6.70	4.3	23.9	2.8	13.9	75.9	7.4
56	39.0	155.0	348.0	2604	11.0	1.1	5.9	6.60	2.7	19.6	2.0	14.8	66.4	16.8

ID	P ppm	K ppm	Mg ppm	Ca ppm	S ppm	Zn ppm	pH	bpH	OM %	CEC	%K %	%Mg %	%Ca %	%H %
57	30.0	151.0	266.0	1783	11.0	0.8	5.5	6.60	2.6	15.5	2.5	14.3	57.5	25.7
58	33.0	121.0	253.0	1457	14.0	1.1	5.1	6.10	2.4	15.6	2.0	13.5	46.7	37.8
59	30.0	137.0	522.0	3529	19.0	2.0	7.2	7.10	3.5	22.3	1.6	19.5	78.9	---
60	49.0	164.0	452.0	3471	10.0	2.7	6.2	6.60	5.1	24.4	1.7	15.4	71.1	11.8
61	41.0	166.0	507.0	3952	10.0	2.5	6.2	6.60	5.2	27.7	1.5	15.3	71.3	11.9

**Grower:**  
FATKA, LARRY

**Farm:**  
Fatka Larry

**Field:**  
Dana Farm



**Area:** 150.96 acres  
**FSA Number:** n/a

**Centroid:** -94.2208, 42.1151  
**County:** Greene, IA

Grower: FATKA, LARRY  
 Farm: Fatka Larry  
 Field: Dana Farm  
 Area: 150.96 ac  
 Interpolation Method: Kriging

Lab: Midwest Labs  
 Date: 2017-08-01  
 Layer ID: 3410712

Phosphorous (P) ppm



Min: 3.0 Max: 115.0 Avg: 36.9

Phosphorous (P) ppm	Soil Levels	Area (ac)	Percent Acres
0-8	VL	0.04	0.03
8-15	L	3.53	2.34
15-20	M	12.98	8.6
20-30	H	36.98	24.5
30-40	VH	97.43	64.54

Phosphorus (P) One of three primary nutrients, phosphorus is essential for plant growth, and a plant must access it to complete its normal production cycle. Plants absorb P from the soil as primary and secondary ortho-phosphates (H<sub>2</sub>PO<sub>4</sub><sup>-</sup> and HPO<sub>4</sub><sup>2-</sup>).

Grower: FATKA, LARRY  
 Farm: Fatka Larry  
 Field: Dana Farm  
 Area: 150.96 ac  
 Interpolation Method: Kriging

Lab: Midwest Labs  
 Date: 2017-08-01  
 Layer ID: 3410712

Potassium (K) ppm



Min: 97.0 Max: 432.0 Avg: 183.5

Potassium (K) ppm	Soil Levels	Area (ac)	Percent Acres
0-80	VL	0.0	0.0
80-130	L	23.16	15.34
130-175	M	60.96	40.38
175-220	H	28.11	18.62
220-250	VH	38.74	25.66

Potassium (K) is one of the essential nutrients and is taken up in significant amounts by crops. Potassium is vital to photosynthesis, protein synthesis and many other functions in plants. It is classified as a macro-nutrient, as are nitrogen (N) and phosphorus (P). Plants take up K in its ionic form (K<sup>+</sup>).

Grower: FATKA, LARRY  
 Farm: Fatka Larry  
 Field: Dana Farm  
 Area: 150.96 ac  
 Interpolation Method: Kriging

Lab: Midwest Labs  
 Date: 2017-08-01  
 Layer ID: 3410712

Magnesium (Mg) ppm



Min: 150.0 Max: 522.0 Avg: 302.2

Magnesium (Mg) ppm	Soil Levels	Area (ac)	Percent Acres
0-96	VL	0.0	0.0
96-156	L	0.57	0.38
156-216	M	12.96	8.52
216-264	H	34.01	22.53
264-280	VH	103.51	68.57

Magnesium (Mg) Within each chlorophyll molecule is an atom of magnesium (Mg), making the nutrient actively involved in photosynthesis. Magnesium also aids in phosphate metabolism, plant respiration and the activation of many enzyme systems.



Grower: FATKA, LARRY  
 Farm: Fatka Larry  
 Field: Dana Farm  
 Area: 150.96 ac  
 Interpolation Method: Kriging

Lab: Midwest Labs  
 Date: 2017-08-01  
 Layer ID: 3410712

Calcium (Ca) ppm



Min: 1279 Max: 6000 Avg: 3257

Calcium (Ca) ppm	Soil Levels	Area (ac)	Percent Acres
0-1200	VL	0.0	0.0
1200-1950	L	18.99	12.58
1950-2700	M	44.39	29.41
2700-3300	H	23.85	15.8
3300-4000	VH	63.74	42.22

Calcium (Ca) is found all around us, and the very existence of plants and animals depends on it. Plants take up Ca as the Ca<sup>2+</sup> cation. Once inside the plant, Ca functions in several essential ways.

Grower: FATKA, LARRY  
 Farm: Fatka Larry  
 Field: Dana Farm  
 Area: 150.96 ac  
 Interpolation Method: Kriging

Lab: Midwest Labs  
 Date: 2017-08-01  
 Layer ID: 3410712

Sulfur (S) ppm



Min: 8.0 Max: 21.0 Avg: 12.2

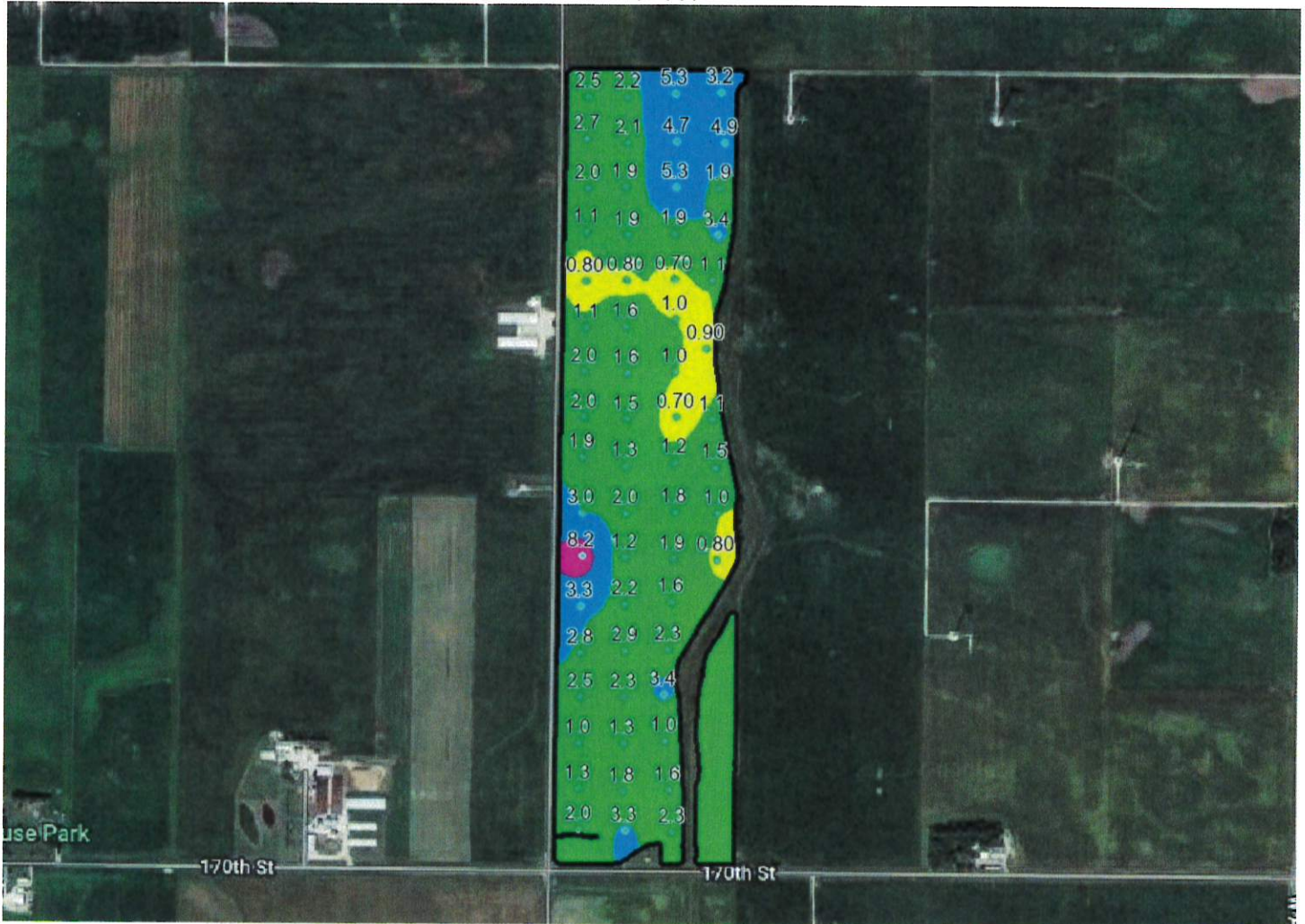
Sulfur (S) ppm	Soil Levels	Area (ac)	Percent Acres
0-6	VL	0.0	0.0
6-12	L	83.85	55.55
12-18	M	63.73	42.22
18-24	H	3.37	2.23
24-30	VH	0.0	0.0

Sulfur (S) is a part of every living cell and is important to the formation of proteins. Unlike the other secondary nutrients like calcium and magnesium (which plants take up as cations), S is absorbed primarily as the  $SO_4^{2-}$  anion. It can also enter plant leaves from the air as dioxide ( $SO_2$ ) gas.

Grower: FATKA, LARRY  
 Farm: Fatka Larry  
 Field: Dana Farm  
 Area: 150.96 ac  
 Interpolation Method: Kriging

Lab: Midwest Labs  
 Date: 2017-08-01  
 Layer ID: 3410712

Zinc (Zn) ppm



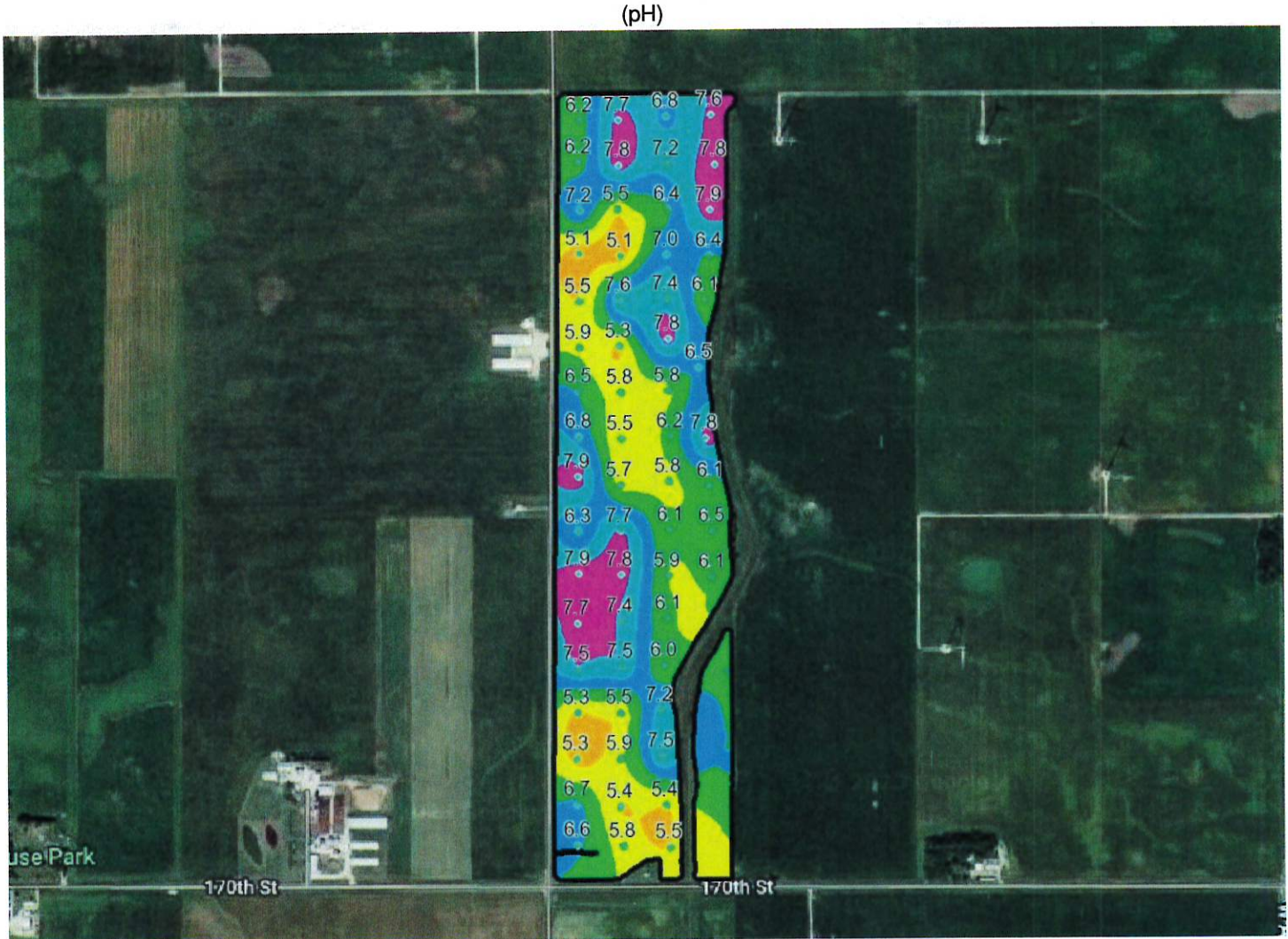
Min: 0.7 Max: 8.2 Avg: 2.1

Zinc (Zn) ppm	Soil Levels	Area (ac)	Percent Acres
0-5	VL	0.0	0.0
.5-1	L	13.92	9.22
1-3	M	113.49	75.18
3-6	H	22.24	14.73
6-10	VH	1.31	0.87

Zinc (Zn) is taken up by plants as the divalent  $Zn^{2+}$  cation. It was one of the first micro-nutrients recognized as essential for plants and the one most commonly limiting yields. Although Zn is required in small amounts, high yields are impossible without it.

Grower: FATKA, LARRY  
 Farm: Fatka Larry  
 Field: Dana Farm  
 Area: 150.96 ac  
 Interpolation Method: Kriging

Lab: Midwest Labs  
 Date: 2017-08-01  
 Layer ID: 3410712



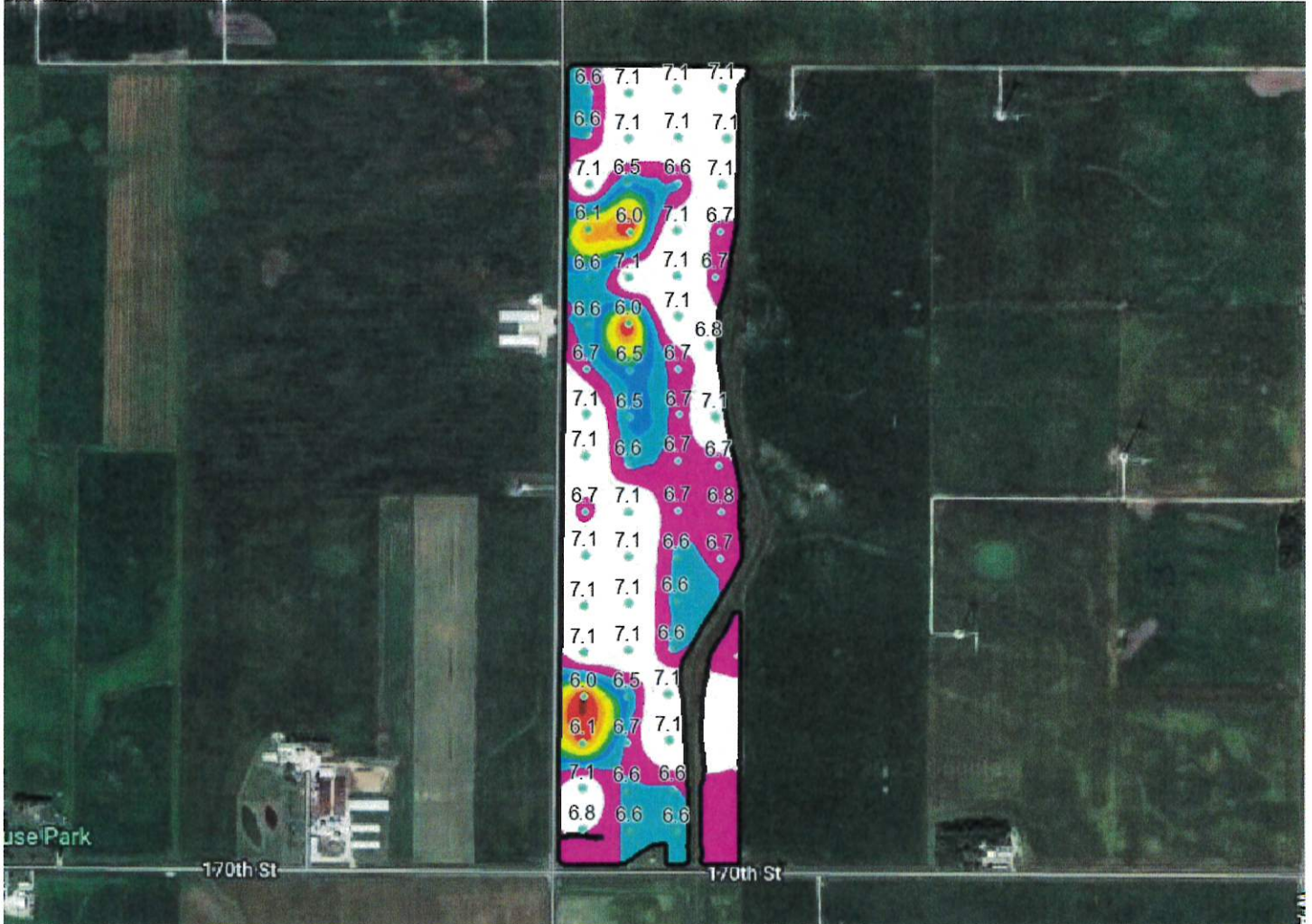
Min: 5.1 Max: 7.9 Avg: 6.5

(pH)	Soil Levels	Area (ac)	Percent Acres
0-4.5	< 4.5	0.0	0.0
4.5-5	4.5 - 5.0	0.0	0.0
5-5.5	5.0 - 5.5	7.3	4.84
5.5-6	5.5 - 6.0	32.95	21.83
6-6.5	6.0 - 6.5	38.8	25.7
6.5-7	6.5 - 7.0	31.56	20.91
7-7.5	7.0 - 7.5	25.1	16.63
7.5-10	>7.5	15.24	10.1

Grower: FATKA, LARRY  
 Farm: Fatka Larry  
 Field: Dana Farm  
 Area: 150.96 ac  
 Interpolation Method: Kriging

Lab: Midwest Labs  
 Date: 2017-08-01  
 Layer ID: 3410712

Buffer pH (bpH)



Min: 6.00 Max: 7.10 Avg: 6.78

Buffer pH (bpH)	Soil Levels	Area (ac)	Percent Acres
0-6.05	< 6.05	0.17	0.11
6.05-6.15	6.05 - 6.15	1.63	1.08
6.15-6.25	6.15 - 6.25	2.83	1.87
6.25-6.38	6.25 - 6.38	4.27	2.83
6.38-6.45	6.38 - 6.45	2.91	1.93
6.45-6.55	6.45 - 6.55	6.52	4.32
6.55-6.65	6.55 - 6.65	22.26	14.75
6.65-6.80	6.65 - 6.80	40.31	26.7
6.80-10	> 6.80	70.07	46.42

Grower: FATKA, LARRY  
 Farm: Fatka Larry  
 Field: Dana Farm  
 Area: 150.96 ac  
 Interpolation Method: Kriging

Lab: Midwest Labs  
 Date: 2017-08-01  
 Layer ID: 3410712

Organic Matter (OM) %



Min: 1.9 Max: 9.8 Avg: 4.1

Organic Matter (OM) %	Soil Levels	Area (ac)	Percent Acres
0-1.5	VL	0.0	0.0
1.5-2.5	L	15.2	10.07
2.5-3.5	M	50.23	33.27
3.5-4.5	H	40.04	26.52
4.5-5	VH	45.49	30.13

Grower: FATKA, LARRY  
 Farm: Fatka Larry  
 Field: Dana Farm  
 Area: 150.96 ac  
 Interpolation Method: Kriging

Lab: Midwest Labs  
 Date: 2017-08-01  
 Layer ID: 3410712

Cation Exchange Capacity (CEC) none



Min: 11.7 Max: 33.2 Avg: 21.2

Cation Exchange Capacity (CEC) none	Soil Levels	Area (ac)	Percent Acres
0-8	Sand	0.0	0.0
8-12	Loamy Sand	0.47	0.31
12-20	Silty Sandy Loam	71.72	47.51
20-28	Loam	58.82	38.96
28-40	Clay Loam	19.94	13.21
40-60	Clay	0.0	0.0

**Grower:** FATKA, LARRY

**Farm:** Fatka Larry

**Field:** Dana Farm

**Soil Type Map (SSURGO)**



Soil Type	Soil Name	Area (ac)
508	Calcousta silty clay loam, 0 to 1 percent slopes	1.38
135	Coland clay loam, 0 to 2 percent slopes, occasionally flooded	4.19
48	Knoke mucky silty clay loam, 0 to 1 percent slopes	7.39
55	Nicollet clay loam, 1 to 3 percent slopes	13.61
138B2	Clarion loam, 2 to 6 percent slopes, moderately eroded	9.01
62D2	Storden loam, 10 to 16 percent slopes, moderately eroded	1.41
138B	Clarion loam, 2 to 6 percent slopes	9.04
638C2	Clarion-Storden complex, 6 to 10 percent slopes, moderately eroded	0.71
4	Knoke silty clay loam, 0 to 1 percent slopes	0.80
138C2	Clarion loam, 6 to 10 percent slopes, moderately eroded	28.99



Soil Type	Soil Name	Area (ac)
6	Okoboji silty clay loam, 0 to 1 percent slopes	6.52
507	Canisteo clay loam, 0 to 2 percent slopes	26.48
585B	Coland-Spillville complex, 1 to 5 percent slopes	11.93
639D2	Salida-Storden complex, 9 to 14 percent slopes, moderately eroded	2.50
95	Harps clay loam, 0 to 2 percent slopes	2.53
107	Webster clay loam, 0 to 2 percent slopes	22.60
90	Okoboji mucky silt loam, 0 to 1 percent slopes	2.03

