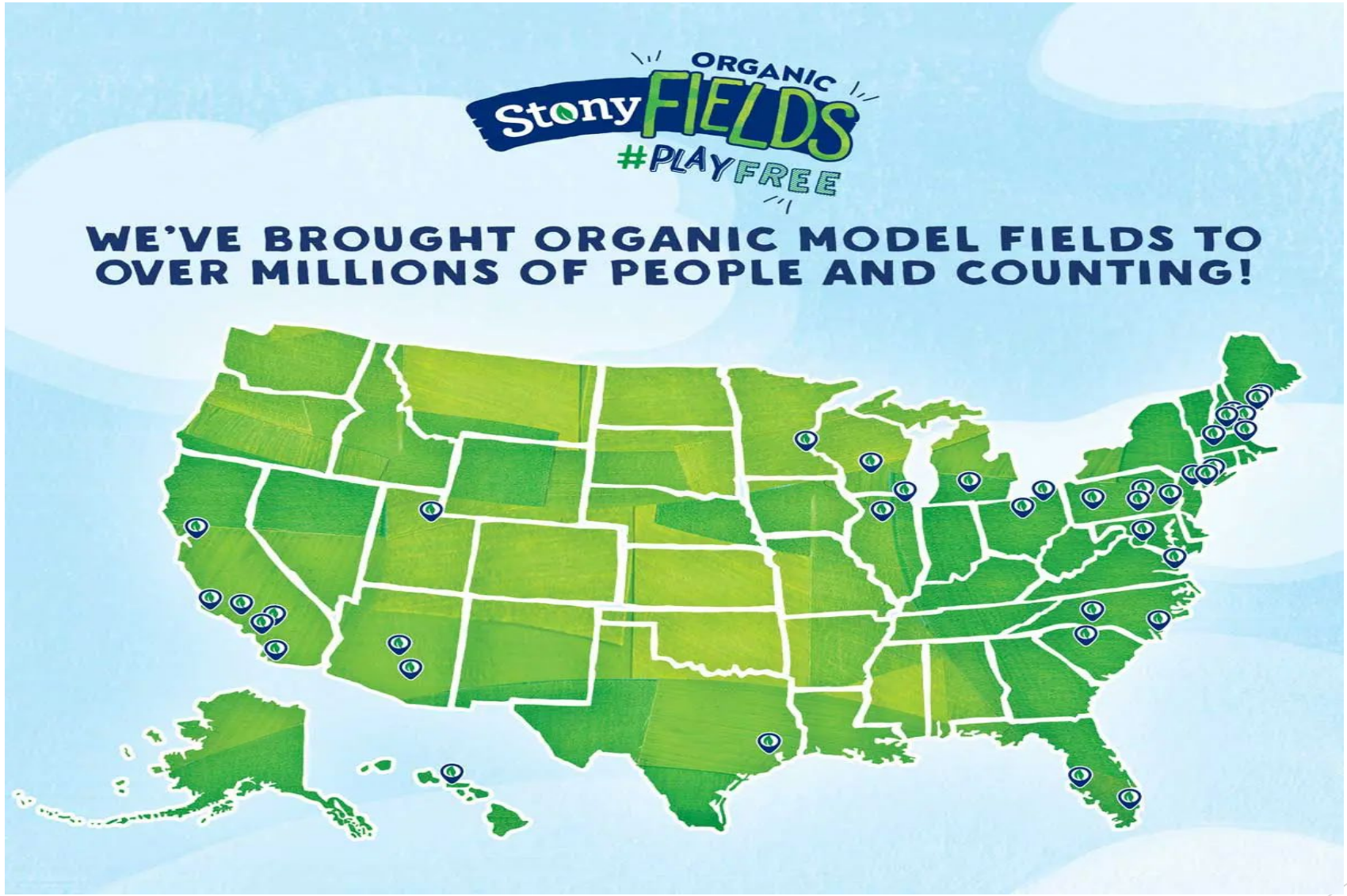
City of Madison Parks Organic Transition Pilot Project

Presented by James Van Sickle – Parks Athletic Leadworker

How this trial came to be

- Grant opportunity sponsored by Stoney Fields Organic
- Brought to us by Eric Knepp and Lisa Laschinger
- Application process in 2019 and Awarded in 2020 with a $5000 grant for 2 year trial program
  - Grant money goes towards testing and OMRI-certified materials to transition up to 4 acres to organic maintenance practices
  - Also allows for in-kind community support and technical services from Osborne Organics and Beyond Pesticides valued at $10,000-$20,000


ORGANIC
Stony FIELDS
#PLAYFREE
WE'VE BROUGHT ORGANIC MODEL FIELDS TO
OVER MILLIONS OF PEOPLE AND COUNTING!

Parks Interest in Organic Maintenance

- Reduce fertilizer inputs and use of Pesticides on reservable athletic playing surfaces
- Improving soil structure and microbial activity so the turf is able to utilize the nutrients in the soil for a healthy turf stand and safe playing surface
- Looking toward the future by leaving the soil in a healthier state then we began
- Sets an example for surrounding communities that organic maintenance can be sustainable

Sites Chosen

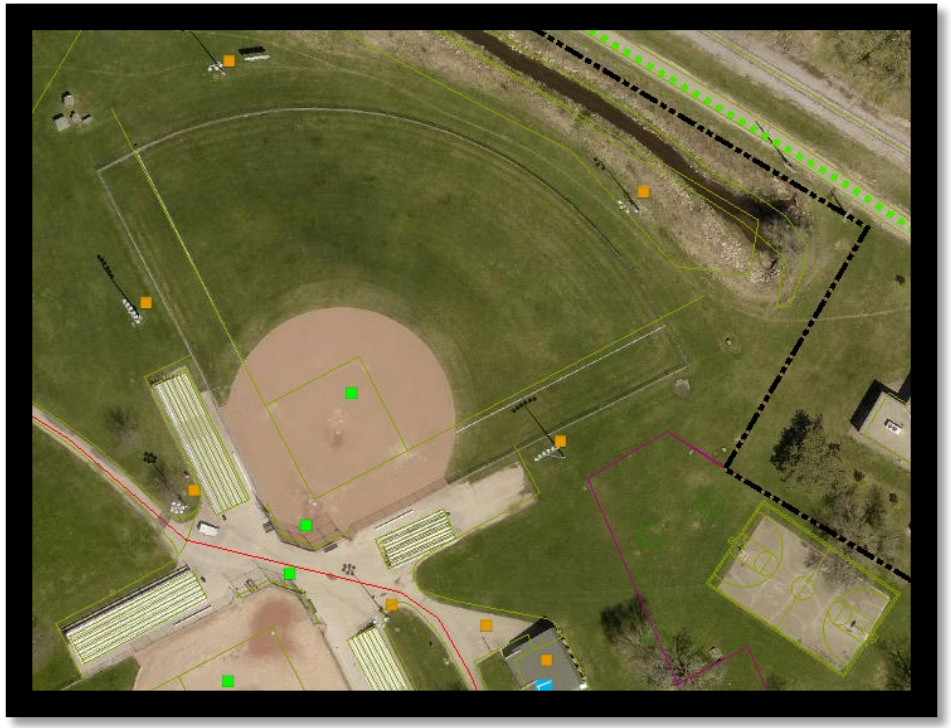
Olbrich Softball Field #2

- High School softball played here
- 3 other softball fields maintained under our regular turf program for easy comparison
- Fenced in so we have a known amount of play

Flagstone Park athletic area

- Growing area of town
- Variety of sports and age groups can utilize the area
- Newer construction with younger soil profile

Satellite View of Sites



Standard Soil Test

University Extension
University of Missouri
Columbia

Soil Test Report
For Lawns and Gardens

----------MU Laboratories----------

23 Mumford Hall
Columbia, MO 65211
(573) 882-0623

or

P.O. Box 160
Portageville, MO
(573) 379-5431

Serial No.	County	Region
H46109H-1	Boone	
Submitted	**Processed**	
3/27/2018	3/29/2018	

http://www.soiltest.psu.missouri.edu/

Sample ID: Home garden 1

Lab No: CO185997

This report is for:
Lawn Garden
1000 Univ. Ave
Columbia, MO 65201

Last Limed: unknown

SOIL TEST RESULTS			RATING					
			Very low	Low	Medium	High	Very high	Excess
pHs	5.5		**********					
Phosphorus (P)	7	lbs/a	***					
Potassium (K)	191	lbs/a	**********					
Calcium (Ca)	5253	lbs/a	**********					
Magnesium (Mg)	495	lbs/a	**********					
Organic Matter:	2.6 %		**Neutr. Acidity:** 2.0 meq/100 g				**CEC:** 16.0 meq/100g	

Fertilizer & Limestone Recommendations (lbs/1000 sq ft)

Crop	Nitrogen(N)	Phosphorus(P_2O_5)	Potash (K_2O)	Zinc(Zn)	Sulfur(S)	LIME
1 vegetables	0.5	4.0	0.5			100
2 blueberries	1.0	4.0	1.0		50	0

Soil Testing and Analysis - Olbrich

Project: **Stonyfield**
City of Madison, WI Parks Division
Property: **Olbrich Softball Field 2** **0.89 acre** **38,768 ft.²**

Red = out of range

Particle size analysis
30% sand, 44% silt, 26% clay USDA Textural Classification: Loam

Soil Analysis

Organic Matter	5.3%	High
pH	7.0	
Cation Exchange Capacity (C.E.C.)	17.6 meq/100g	
Phosphorus (P)	18 ppm	Medium
Potassium (K)	189 ppm	High
Magnesium (Mg)	542 ppm	Very High
Calcium (Ca)	2,503 ppm	High
Sodium (Na)	15 ppm	
Nitrate-N (FIA)	7 ppm	Low
Sulfur (S)	10 ppm	Low
Zinc (Zn)	41.5 ppm	Very High
Manganese (Mn)	7 ppm	Low
Iron (Fe)	50 ppm	Very High
Copper (Cu)	3.6 ppm	Very High
Boron (B)	0.5 ppm	Low
Excess Lime Rating	Low	
Soluble Salts	0.3 mmhos/cm	Low

Cation Saturation Percentage:

Potassium (K)	2.8%
Magnesium (Mg)	25.7%
Calcium (Ca)	71.1%
Sodium (Na)	0.4%
Hydrogen (H)	0%

Soil Biology Analysis

Active Fungi	12.60 ug/g	>30.00
Total Fungi	258.25 ug/g	>300.00
Active Bacteria	26.55 ug/g	>30.00
Total Bacteria	689.41 ug/g	>300.00
TF:TB	0.37	1.00 to 2.00
Flagellates	636.39 #/g	>10,000.00
Amoebae	5,097.74 #/g	>10,000.00
Ciliates	64.19 #/g	<57.00
Nitrogen Cycling Potential	25-50 lbs./acre	
Endomycorrhizal	8%	>10.00

Olbrich - 2020

At time of soil sample

Pockets of heavy weed populations

Soil Testing and Analysis - Flagstone

Project:	**Stonyfield**	**City of Madison, WI Parks Division**	
Property:	**Flagstone Park**	**2.4 acres**	**104,544 ft.²**
	Soccer Field	**1.24 acres**	**54,000 ft.²**

Red = out of range

Particle size analysis

18% sand, 56% silt, 26% clay USDA Textural Classification: Silt Loam

Soil Analysis

Organic Matter		2.6%	Low
pH		6.1	
Cation Exchange Capacity (C.E.C.)		14 meq/100g	
Phosphorus (P)	Weak Bray	13 ppm	Low
Potassium (K)		143 ppm	Medium
Magnesium (Mg)		459 ppm	Very high
Calcium (Ca)		1,556 ppm	Medium
Sodium (Na)		17 ppm	
Nitrate-N (FIA)		2 ppm	Very Low
Sulfur (S)		8 ppm	Low
Zinc (Zn)		3.3 ppm	High
Manganese (Mn)		22 ppm	High
Iron (Fe)		77 ppm	Very High
Copper (Cu)		1.5 ppm	High
Boron (B)		0.3 ppm	High
Excess Lime Rating		Low	
Soluble Salts		0.2 mmhos/cm	Low

Cation Saturation Percentage:

Potassium (K)	2.6%
Magnesium (Mg)	27.3%
Calcium (Ca)	55.6%
Sodium (Na)	0.5%
Hydrogen (H)	14%

Soil Biology Analysis

Active Fungi	11.80 ug/g	>30.00
Total Fungi	145.08 ug/g	>300.00
Active Bacteria	24.76 ug/g	>30.00
Total Bacteria	535.11 ug/g	>300.00
TF:TB	0.27:1	1.00 to 2.00
Flagellates	5,061.05 #/g	>10,000.00
Amoebae	468.09 #/g	>10,000.00
Ciliates	0.00 #/g	<55.00
Nitrogen Cycling Potential	25-50 lbs./acre	
Endomycorrhizal	14%	>10.00

Flagstone - Fall 2020

At time of soil test after a dry summer.

Pockets of heavy weed population.

Year 1 Maintenance Program Recommendations - Olbrich

Olbrich

38,768 ft.²

2 ¾ lbs. N/ 1000 ft.²

Early-May	Granular organic fertilizer Aerate	¾ lb. N / 1000 ft.²
Mid-June	Granular organic fertilizer	¾ lb. N / 1000 ft.²
Mid to late-August	Aerate Granular humate Grass seed 5 lbs. / 1000 ft.² Granular organic fertilizer	 10 lbs. / 1000 ft.² Cool season mixture ¾ lb. N / 1000 ft.²
Late September	Granular organic fertilizer	½ lb. N / 1000 ft.²
Mid to late October	Aerate	

Year 1 Maintenance Program Recommendations - Flagstone

Flagstone

Soccer field	**54,000 ft.²**	
Entire park	**104,544 ft.²**	
3 lbs. N/ 1000 ft.²		
Early-May	Granular organic fertilizer	¾ lb. N / 1000 ft.²
	Aerate	
	Grass seed 5 lbs. / 1000 ft.²	Cool season mixture
Mid-June	Granular organic fertilizer	¾ lb. N / 1000 ft.²
Mid-August	Aerate	
	Granular humate	10 lbs. / 1000 ft.²
	Grass seed 5 lbs. / 1000 ft.²	Cool season mixture
	Granular organic fertilizer	¾ lb. N / 1000 ft.²
Late-September	Granular organic fertilizer	¾ lb. N / 1000 ft.²
Mid to late-October	Aerate	
	Calcitic Lime	40 lbs. / 1000 ft.²


5713
5520
RYAN
RYAN
RYAN


CUSHMAN

Costs Year 1- Olbrich

Olbrich						
		rate	product	cost/bag	bags used	cost of app
Soil Tests						$ 252.70
fert	may	2/3 lbs. of N	Nature Safe 10-2-8	$ 34.80	6	$ 208.80
aerify	may					$ -
fert	mid june	2/3 lbs. of N	Nature Safe 10-2-8	$ 34.80	6	$ 208.80
aerify	mid aug					$ -
seed	mid aug	4#/1000	TTTF	$ 91.00	4	$ 364.00
granular humate	mid aug	50#/A	Magna Plus Humate	$ 110.00	4	$ 440.00
fert	mid aug	2/3 lbs. of N	Nature Safe 10-2-8	$ 36.95	6	$ 221.70
fert	late september	2/3 lbs. of N	Nature Safe 10-2-8	$ 36.95	6	$ 221.70
aerify	october					
						$ 1,917.70

Costs Year 1- Flagstone

Flagstone						
		rate	product	cost/bag	bags used	cost of app
Soil Tests						$ 252.70
fert	may	3/4 lbs. of N	Nature Safe 10-2-8	$ 34.80	16	$ 556.80
aerify	may					$ -
seed	may			$ 91.00	9	$ 819.00
fert	mid june	3/4 lbs. of N	Nature Safe 10-2-8	$ 34.80	16	$ 556.80
aerify	mid aug					$ -
seed	mid aug	4#/1000	TTTF	$ 91.00	9	$ 819.00
granular humate	mid aug	50#/A	Magna Plus Humate	$ 110.00	3	$ 330.00
fert	mid aug	3/4 lbs. of N	Nature Safe 10-2-8	$ 36.95	16	$ 591.20
fert	late september	3/4 lbs. of N	Nature Safe 10-2-8	$ 36.95	16	$ 591.20
aerify	october					$ -
calcitic lime	october	40#/1000		$ 9.00	80	$ 720.00
						$ 5,236.70

Olbrich -2021

Turf health is good. No noticeable difference in turf health from other traditionally maintained softball fields.

Weed population is on the increase throughout, especially areas around the skinned infield making it harder to maintain a clean edge.

Flagstone - 2021

Spring/Summer 2021

Turf health is ok. Weed population is dramatically increasing. No organized play occurred on this field in 2021.

Fall 2021

Program for 2022

Olbrich		38,768 ft.²	1 acre (rounded
Flagstone	Soccer field	54,000 ft.².	2.4 acres total
	Entire park	104,544 ft.²	

early-May	Aerate		
	6-0-1 fertilizer .75 lb. N/ 1000 ft.²		12 bags/acre
	Spot seed as might be needed		
mid-June	Aerate		
in order	6-0-1 fertilizer .4 lb. N/ 1000 ft.²		12 bags/acre
	Granular humate		
	Liquid application	see recipe	150 gal/acre delivery rate
	Compost topdress	½ to ¾ yd.³/1000 ft.²	22 to 30 yd.³/acre
	Overseed		
mid-July	Aerate		
	Liquid application	see recipe	150 gal/acre delivery rate
mid-August	Aerate		
	6-0-1 fertilizer .75 lb. N/ 1000 ft.²		12 bags/acre
	Liquid application	see recipe	150 gal/acre delivery rate
	Additional seed as might be needed		
mid-September	Aerate		
	6-0-1 fertilizer .75 lb. N/ 1000 ft.²		12 bags/acre
late-October	Aerate		

Sprayable compost tea recipe

Liquid recipe: 300-gallon tank with boom sprayer delivered at the rate of 150 gallons/acre final solution. Each 300-gallon tankful covers 2 acres. It will take three tankfuls for each application.

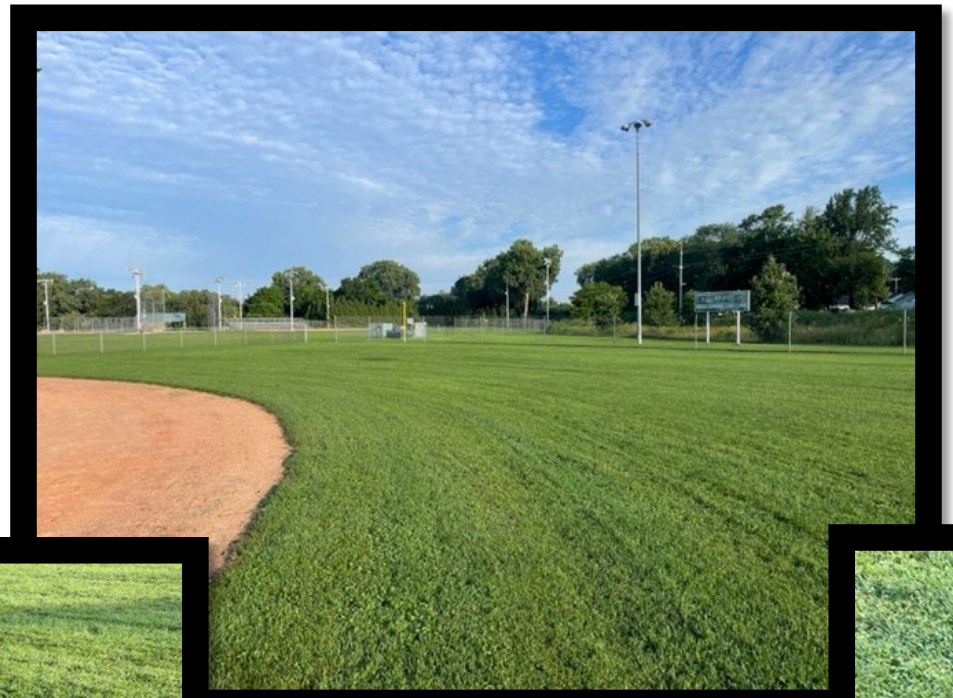
	Rate	1 tankful	2 tankfuls	x 3 apps.
Ferti nitro plus	5 lb./ac	10 lb./2 ac	20 lb./4 ac	60 lb.
Soluble Seaweed Extract	1 lb./ac	2 lb./2 ac	4 lb./4 ac	12 lb.
Soluble Humic Acid	1 lb./ac	2 lb./2 ac	4 lb./4 ac	12 lb.
UltraFine Endo	1.4 lb./ac	2.8 lb./2 ac	5.6 lb./4 ac	16.8 lb.
Molasses	1 qt./ac	2 qt.2 ac	1 gal./4 ac	3 gal.

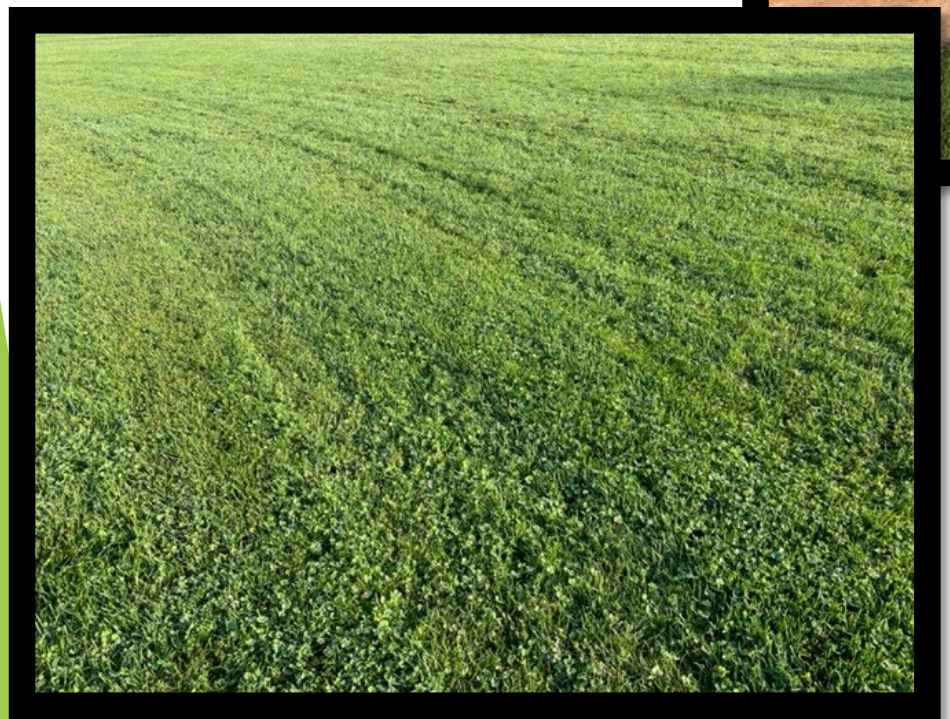
Compostwerks
Peter Schmidt & Greg Twehoos

Ferti-Organic	Ferti-Nitro Plus	13.62-0-0	$278.50/50 lb.	OMRI
Ferti-Organic	Soluble Seaweed	0-0-14	$309.60/50 lb.	OMRI
Ferti-Organic	Soluble Humic Acid		$224.64/50 lb.	OMRI
MycoApply Ultrafine Endo			$279.00/20 lb.	OMRI
Molasses			$ 45.97/4 gal.	

Turf Comparison

Olbrich Today





Flagstone Today

Looking Forward

- Finish they season following consultants program
- New soil analysis to see progress
- Meet with consultants to discuss how we will continue from here