



**CAN HOW MUCH DO COVER CROPS PAY?**

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 ASA WEBINAR  
 2/18/2016  
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KEEP COVER CROPS IN PERSPECTIVE-  
 A SMALL PART OF **SUSTAINABLE\*\***

1. BE A LOW COST PRODUCER -NT+CC
2. INCREASE SOIL CARBON CONTENT -NT+CC
3. MANAGE SOIL BASE SATURATIONS -NT+CC
4. MANAGE WATER - INFILTRATION+TILE-NT+CC
5. BUY INPUTS LOW: SELL CROPS HIGH

**\*\*SUSTAINABLE = REQUIRE SOIL CARBON CONTENT TO INCREASE OVER TIME O.M. MUST BE INCREASING**

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2

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**SOIL OXIDATION IS NOT SUSTAINABLE**

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3

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YEAR	HAMILTON COUNTY BEANS				HAMILTON COUNTY CORN			
	R.E. YLD	CTY YLD	AYP FLOOR 90.0%	R.E. % of Cty 2014	R.E. YLD	CTY YLD	AYP FLOOR 90.0%	R.E. % of Cty 2014
<b>5 YR AVG</b>	<b>59.3</b>	<b>52.3</b>	<b>47.2</b>	<b>113%</b>	<b>174.7</b>	<b>145.4</b>	<b>128.7</b>	<b>120%</b>
2014	64.6	57.3	47.2	113%	194.4	180.0	142.3	108%
2013	51.4	44.2	48.1	116%	177.6	148.0	148.9	119%
2012	52.8	53.6	48.9	117%	159.7	120.5	149.2	133%
2011	58.4	51.8	48.1	113%	172.6	124.1	147.3	139%
2010	59.5	54.8	47.3	109%	169.0	153.2	144.1	110%
2009	58.8	52.9	46.3	111%	189.1	170.6	139.9	111%
2008	59.9	53.5	45.8	112%	199.2	161.7	135.8	123%
2007	56.5	51.5	44.5	110%	181.1	150.3	132.5	120%
2006	59.8	54.3	44.2	110%	165.2	166.8	132.0	100%
2005	48.2	48.6	43.6	99%	168.8	145.6	131.7	116%
2004	56.9	53.5	42.1	106%	180.4	165.5	127.8	109%
2003	45.6	42.2	41.4	108%	148.6	137.6	125.8	108%
2002	59.0	50.1	41.3	118%	133.6	125.3	124.1	107%
2001	59.9	51.5	41.1	116%	189.9	156.9	123.8	122%
2000	54.6	50.4	40.7	108%	164.4	140.1	123.2	117%
1999	46.1	41.1	40.1	112%	152.8	129.7	121.4	118%
1998	53.7	42.7	39.9	126%	149.8	139.0	120.3	108%
1997	56.3	46.2	39.7	122%	148.8	127.9	119.1	116%
1996	43.9	37.7	39.1	116%	143.1	116.7	117.9	123%
1995	42.1	39.9	38.4	106%	118.1	103.4	116.6	114%
1994	58.5	50.4	38.4	116%	172.1	150.3	115.5	115%
1993	55.5	51.2	38.1	108%	149.6	140.2	114.3	107%
1992	49.8	43.1	37.9	116%	167.9	148.8	113.1	113%
<b>92-96 Avg</b>	<b>50.0</b>	<b>44.5</b>	<b>38.4</b>	<b>112%</b>	<b>150.2</b>	<b>131.9</b>	<b>115.5</b>	<b>114%</b>

MUST TILL FOR YIELD? NO

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**WHAT DO COVER CROPS COST?**

Cover Crop Acres and Costs Fall 2014			
SEED COSTS	Cost/Acre	Acres	Seed Cost
Oats (32#) + Radish (2.5#)	\$16.38	240	\$3,931.20
Oats (24#) + Radish (2.5#) + Clover (6#)	\$18.40	1005	\$18,492.00
Annual Rye Grass (18#)	\$14.04	200	\$2,808.00
Cereal Rye Grass - Plant (35#)	\$12.05	607	\$7,314.35
Cereal Rye Grass - Aerial (40#)	\$12.05	1,475	\$17,773.75
	3,527		<b>Seed Cost = \$50,319.30</b>
			<b>Seed Cost/Acre = \$14.27</b>
Planting Costs for Season	Quantity	Rate	Total Cost
Aerial Seeding Cost	1,475	\$13.93	\$20,546.75
Tractor Hours	140	\$35.00	\$4,900.00
Labor	210	\$15.00	\$3,150.00
Fuel	720	\$3.50	\$2,520.00
Planter Repairs/wear	2,052	\$5.00	\$10,260.00
<b>Total Other Costs</b>	<b>Acres = 3,527</b>		<b>\$41,376.75</b>
			<b>Planting Cost/Acre = \$11.73</b>
<b>2015 COST = \$24.37/Acre</b> <b>on 4,860 ACRES</b>			<b>Total Cover Crop Cost = \$91,696.05</b>
			<b>Total Cost/Acre Planted = \$26.00</b>

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10

**WHAT ARE THE ECONOMIC BENEFITS OF COVER CROPS?**

COVER CROP BENEFITS 2015				
BENEFITS ANALYSIS				
		Per acre	Acres	Total Benefit
Fertilizer Saved-P & K	(Soil Test+Tile Discharge Data)	\$16.23	3527	\$57,243
Fertilizer Savings - N	(40#/A invested in OM From legumes+Biomass)	\$0.00	3667	\$0
Corn Yield Increase	(3yr 9 Tests 108 reps: CC Plot 7.1bu@\$4.50)	\$31.95	2052	\$65,561
Soybean Yield Increase	(Multiple Test Minimum 2bu@\$10.60)	\$21.20	1475	\$31,270
Drought/Stress Tolerance	(2004-2014 Actual 16% every 40=6.9bu@\$4.50)	\$31.05	3527	\$109,513
Biology Improvement	(Cycling+Resilience)	\$2.00	3527	\$7,054
Soil Quality	(OM Increase 2x No Cover or 10x Tillage)	\$4.00	3527	\$14,108
Erosion Reduction	(Land Value 2 Ton/Acre @ \$4/Ton)	\$8.00	3527	\$28,216
CSP Program	(Conservation Program Dollars)	\$10.91	3667	\$39,989
			<b>Total Cover Crop Benefit =</b>	<b>\$352,955</b>
			<b>Minus Total Costs =</b>	<b>\$91,696</b>
			<b>Net Economic Benefit =</b>	<b>\$261,259</b>
<b>ROI = 284.9%</b>			<b>Net Benefit / Acre Planted =</b>	<b>\$74.07</b>

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11



Purdue – NRCS Cover Crop  
N-Rate Soil Quality Plots  
Corn into Cereal Rye May 4<sup>th</sup>, 2013

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12



**2013 Results**  
 Final Stand Corn/Rye = 28,500  
 Final Stand Corn/No Cover = 32,475  
 Final Yield Corn/Rye = 187.6  
 Final Yield Corn/No Cover = 183.4  
 Final Yield Corn/Oats+Radish = 190.5  
**Cover Crop Yield + 7.1 bu/ac**

**2015 Results**  
 Final Stand Corn/Rye = 31,850  
 Final Stand Corn/No Cover = 32,150  
 Final Yield Corn/Rye = 176.8  
 Final Yield Corn/No Cover = 164.3  
 Final Yield Corn/Oats+Radish = 177.2  
**Cover Crop Yield + 12.8 bu/ac**

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13

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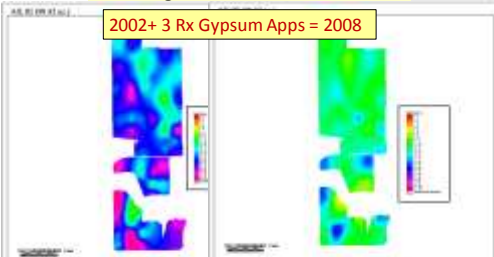
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**Magnesium Base Saturation**

2002+ 3 Rx Gypsum Apps = 2008



Purple is above 25%      Target is green < 13%

**Mg CANNOT BE FIXED USING FLAT RATE APPLICATION  
 ONCE FIXED, IT STAYS FIXED FOR YEARS  
 BALANCING Mg INCREASES PLANT AVAILABLE NUTRIENTS**

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14

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**2 Inch Events**

IT HAS RAINED HARD FOREVER  
 - 15% OF WATERSHED LOSES 50% OF YIELD EVERY YEAR  
 - 275 BU \* .5 \* .15 \* \$5 Corn =  
 = **\$103/Acre Lost Revenue per Acre per Year**  
**PATTERN TILE w/ .5" Coefficients not .375" = + 33%**



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15

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Comparing the Systems		The "Real" Economics of No-Till	
Activity or Input	Unit	Conventional	No-till
Soil Test	\$/Acre	3.75	3.75
Chisel Plow	\$/Acre	25.00	0.00
Spray Fall Weed Control	\$/Acre	0.00	2.00
Fall Weed Chem Cost	\$/Acre	0.00	3.00
Cover Crop Seed - AVG	\$/Acre	0.00	19.50
Apply Dry Fertilizer	\$/Acre	6.00	5.00
0-11-45 @ \$440	Lbs/Acre	165	36.30
15-50-0 @ \$433	Lbs/Acre		47
0-0-60 @ \$330	Lbs/Acre		85
Apply Anhydrous	\$/Acre	15.00	17.50
82-0-0 @ \$520	Lbs/Acre	211	54.96
	act lbs	173.02	135
Apply Preplant Chemicals	\$/Acre	5.00	5.00
Preplant Chem Cost	\$/Acre	7.40	10.86
Cultivate or Vert. Till 1.3x	\$/Acre	18.78	0.00
Plant Corn	\$/Acre	14.50	16.50
Corn Seed - V73	\$/Acre	93.50	93.50
28-8-0 @ \$220	Lbs/Acre	100	115.00
	act lbs	28	40
Insecticide/Fungicide	\$/Acre	15.00	5.00
Apply Post Chemicals	\$/Acre	5.00	5.00
Post Chem Cost	\$/Acre	9.37	9.37
Harvest Corn	\$/Acre	37.00	38.42
Hauling Corn	\$/Acre	14.80	15.37
Drying Corn	\$/Acre	23.15	24.01
Storing Corn	\$/Acre	27.75	28.82
Overhead, etc.	\$/Acre	125.00	105.00
Net Land Rent Cost	\$/Acre	200.00	235.00
<b>TOTAL COST</b>		<b>785.00</b>	<b>722.62</b>
		Difference = 72.44	
<b>AVERAGE YIELD</b>		<b>185</b>	<b>192.1</b>
<b>AVERAGE COST PER BUSHEL</b>		<b>\$ 4.30</b>	<b>\$ 3.76</b>

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