

Rick Clark

Steward

Change is Good!



- **Purdue graduate Ag Econ**
- **5th generation farmer**
- **35 yrs practicing**
- **Wife: Carol for 30 yrs**
- **Daughters: Jessica and Rachel**

- **Clark Farm**
- **Father: Richard**
- **Nephew: Aaron**
- **No till soybeans for 15 yrs**
- **No till corn for 10 yrs**
- **Cover crops for 10 yrs**
- **Farming green for 8 yrs**



- **5 crop system**
- **100% transition to organic**
- **100% non GMO all crops**
- **No starter fertilizer**
- **No fungicide**
- **No seed treatment**
- **No insecticide**

Farm Green:

Planting the cash crop of corn and soybeans into a living, growing, green cover crop. Termination may not occur for up to 30 days after planting, but typically it has happened within 3-5 days.





Benefits of farming green:

Maximizing what the cover crop was intended to do.

- Sequestration of nutrients**
- Nitrogen fixing**
- Growing carbon**
- Erosion control**
- Increased pounds of biomass**
- Feed microbes**
- Armor the soil**
- Limit evaporation**
- Suppress weeds**

Nutrient Sequestration

Cereal Rye

	N	P2O5	0-46-0	K2O	0-0-60	Sulfur	Mg	Ca	Biomass
12" rye	82	15	32	76	133	5	4	11	2000
18" rye	120	20	44	128	213	6	6	18	4000
28" rye	134	30	64	169	281	10	12	31	6800
Dead rye	84	29	64	39	65	3	11	29	3500

Note: Dead rye sample was taken 2 months after termination.



What drives our system?

- Building soil health
- Diversification
- Cash crop rotation
- Data collection
- Armor the soil
- Building human health
- Being a good steward
- ROI

Balance

A symbiotic relationship with mother nature.

Change is Good

Change is Necessary

Change is the Answer

WOMD #1



Against weeds

WOMD #2



Against chemicals

Gunslinger

30 lbs Haywire oats

5 lbs Austrian winter peas

5 lbs Balansa Fixation clover

3 lbs Sorghum/Sudan

3 lbs Tillage radish





Nutrient analysis of Gunslinger

June 5th 2019

N	P2O5	0-46-0	K20	0-0-60	Ca	Mg	S
151	44	96	190	317	47	11	8

Note: 5840 lbs DM biomass per acre.

**Planting corn “green”
into Balansa Fixation
clover and Austrian
winter peas.**



Frost Seeding

March 11th 2019

- 30 lbs Haywire Oats**
 - 8 lbs Balansa Fixation clover**
 - 2 lbs tillage radish**
 - 2 lbs Rape**
 - 2 lbs Chicory**
 - 2 lbs Hairy Vetch**
-
- Note: Broadcast with Case IH Air max 70' boom.**
 - Note: This can not be terminated mechanically.**

Nutrient analysis of frost seeding

June 10th 2019

N	P2O5	0-46-0	K2O	0-0-60	Ca	Mg	S
110	55	147	177	295	73	16	23

Note: 5538 lbs DM biomass per acre



The most efficient way to build soil health. High impact paddock grazing.

April 28th

**Planting beans at boot stage
has allowed us to move up
our planting date by 30-40
days.**



June 1st

**Roll crimp
cereal rye
and
soybeans at
v2.**



July 19th



July 19th

This field is in transition to organic. The concept of going organic while utilizing cover crops and no till excites me. This is a system we will need to continue perfecting.

June 2nd 2019

**Rolling cereal
rye ahead of the
soybean planter.
We did this
because the rye
was over 72" tall
and it lodged.
Again,
constantly
being flexible to
change plans.**





July 22nd 2019

**Transition soybeans to
organic.**



Aug 10th 2019

**Weed
suppression
has been
pretty good.**

Input Reductions

Input	2011	2019	% change
Diesel fuel	30,011 gal	15,151 gal	49.5
Horsepower	3350	1200	64.2
Synthetic N	220 lbs/A	110 lbs/A	50.0
MAP	330 tons	0	WOW!
Potash	400 tons	0	WOW!
Lime	2100 tons	0	WOW!
Chemistry	\$40/A	\$8/A	80.0

Money in your pocket!

Diesel fuel	\$ 35,000
Synthetic N	\$ 110,000
MAP	\$ 138,000
Potash	\$142,000
Lime	\$ 53,000
Chemistry	\$ 192,000

Total \$ 670,000

Note: The total dollar amount is repeated every year.

If you are not uncomfortable with what you are doing, then you are not trying hard enough to change.

I challenge everyone here today to get a little uncomfortable. I think you will like how it feels.

I am proud to be a farmer.

But, I am more proud of the way I farm.

Regenerative Stewardship

Thank you.

Thoughts

Rick Clark

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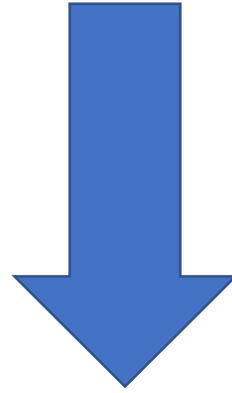
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Rick Clark

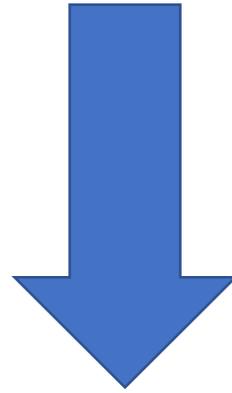
Steward

Change is Good!

Good Data



Good Decisions

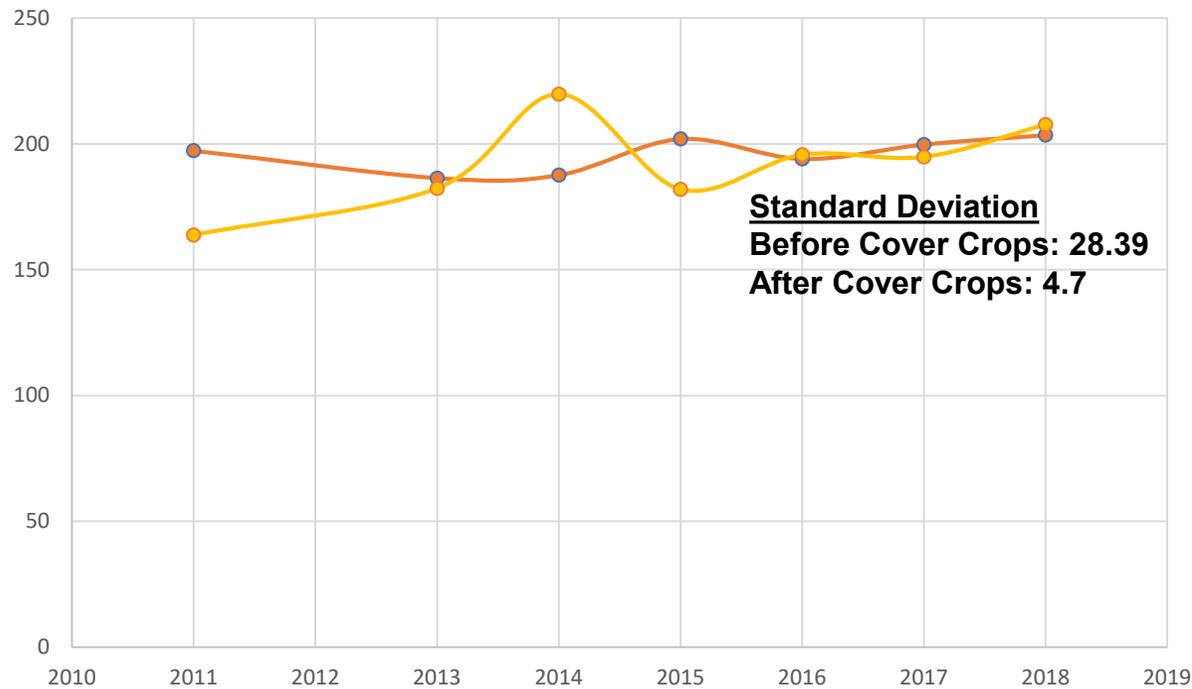


Position of Strength

Stability

Corn

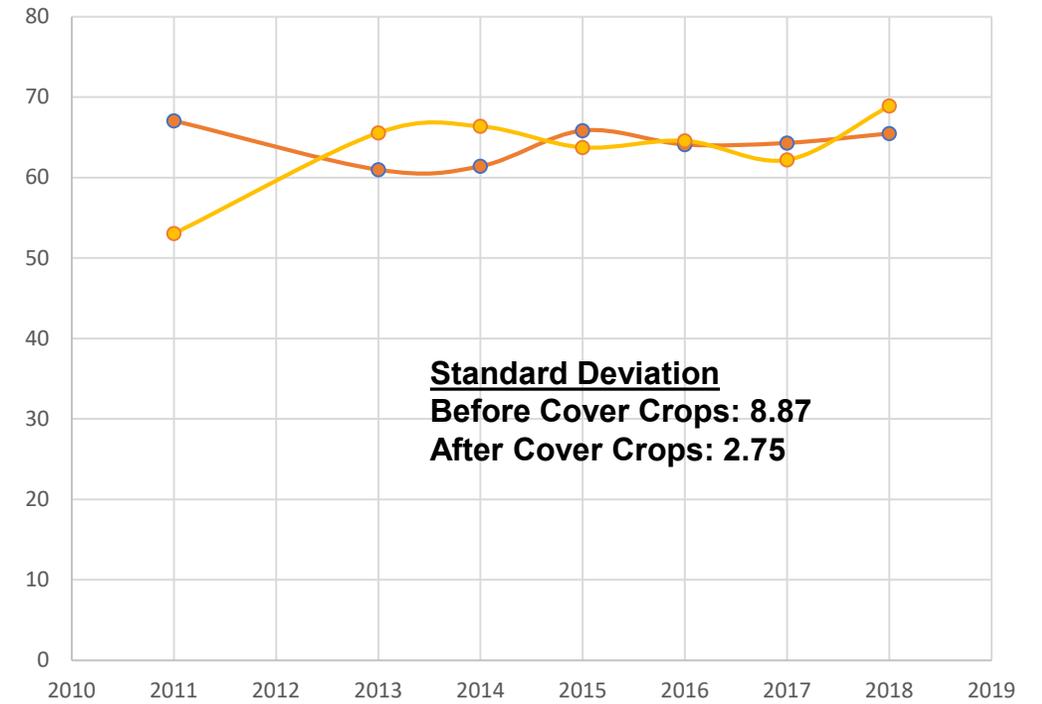
Corn Yield Comparison



Expected Yield Yield Achieved

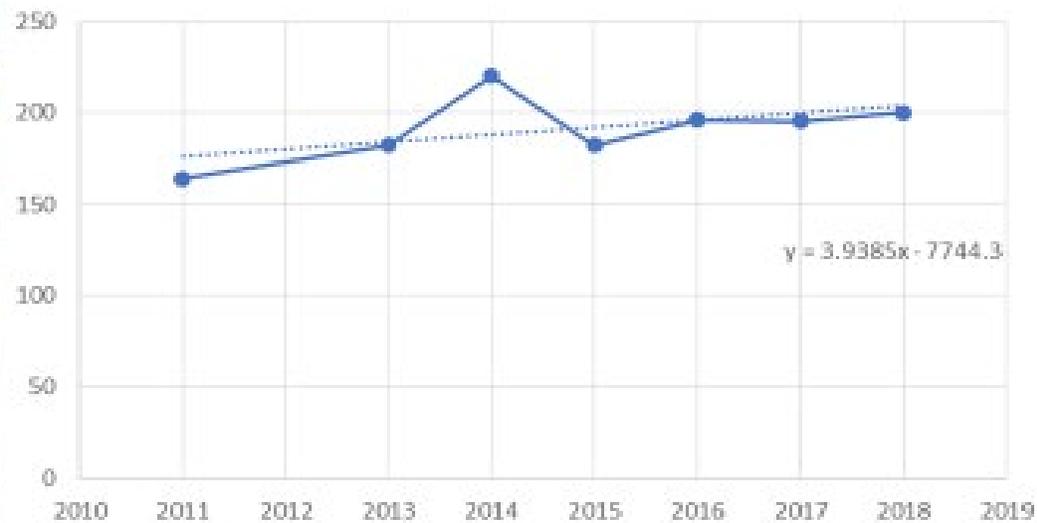
Soybeans

Soybean Yield Comparison

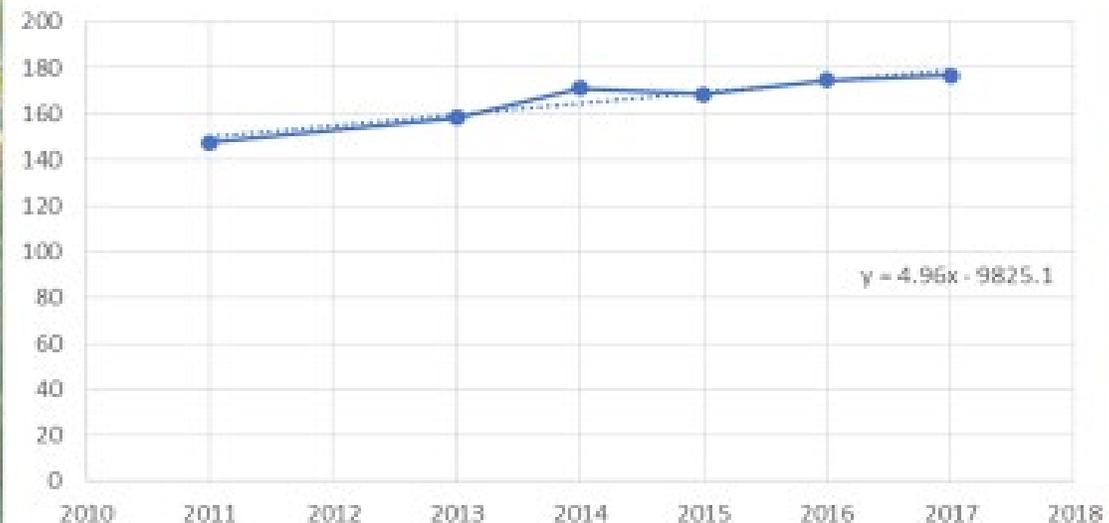


Expected Yield Yield Achieved

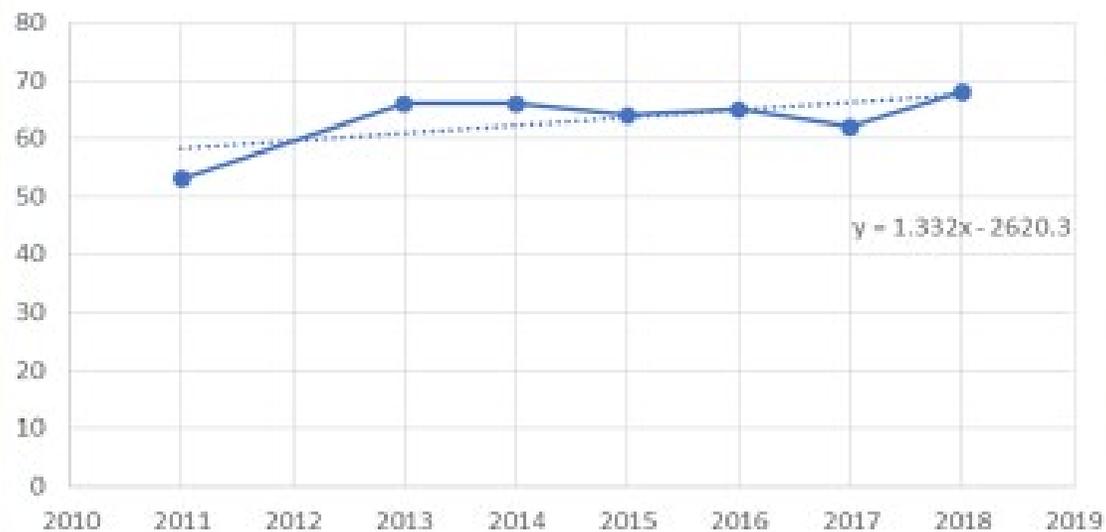
Our Corn Yield Achieved



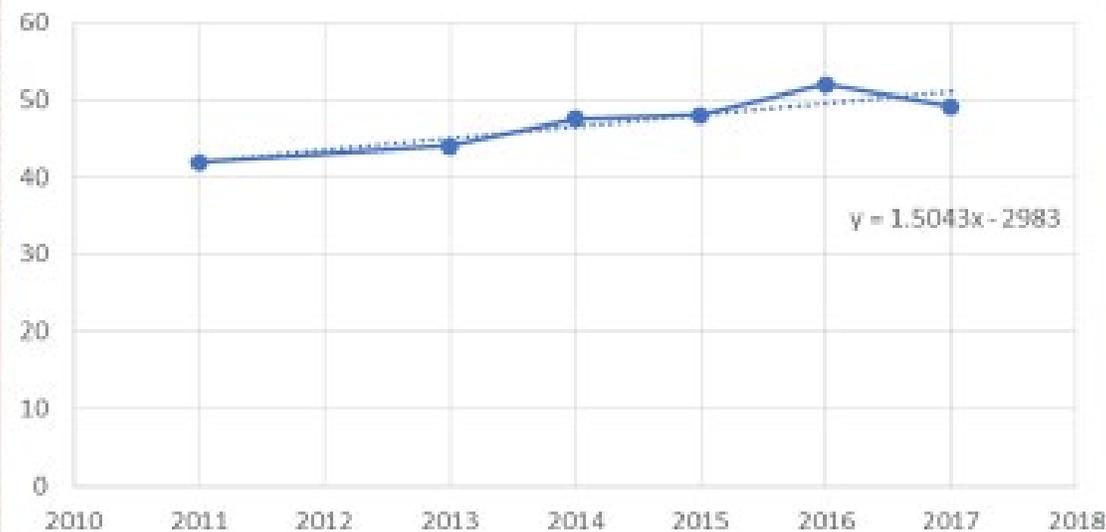
National Yield Achieved



Our Soybean Yield Achieved



National Yield Achieved



Clark Land & Castle

Low cost input producer

	NGMO corn	NGMO soybeans
Seed	\$75/A	\$26/A
Cover crop	\$30/A	\$36/A
Chemistry	\$14/A	\$0/A
Synthetic N	\$60/A	\$0/A
Synthetic P,K	\$0/A	\$0/A
Fungicide	\$0/A	\$0/A
Insecticide	\$0/A	\$0/A
Roller crimper	\$11/A	\$11/A
total	\$190/A	\$73/A
B/E yield	43 bu/A	8 bu/A

Income Statement Comparison

	Purdue Producer Expectations	Our Numbers	% Change
Yield per Acre	206	200	
Estimated Sales Price	\$3.75	\$3.75	
Gross Income	\$772.50	\$731.25	
Variable Costs			
Fertilizer	\$111.00	\$84.00	-24%
Seed	\$111.00	\$72.00	-35%
Cover Crop Seed	\$0.00	\$20.00	
Pesticides	\$60.00	\$18.00	-70%
Dryer Fuel	\$37.00	\$25.00	-32%
Machinery Fuel	\$18.00	\$10.00	-44%
Machinery Repairs	\$22.00	\$25.00	14%
Hauling	\$21.00	\$18.00	-14%
Insurance	\$40.00	\$20.00	-50%
TOTAL	\$420.00	\$292.00	-30%
Contribution Margin	\$352.50	\$439.25	25%
Estimated Total Fixed Costs	\$383.00	\$323.00	
Total Cost	\$803.00	\$615.00	-20%
Accounting Breakeven per Bushel BE	224 \$3.90	147 \$3.30	

Thoughts to be aware of

- **Start easy. Don't get in over your head**
- **Do not plant wheat following beans in rolled rye**
- **Know your date for winter kill species**
- **Be aware of hard seed**
- **It is ok to shorten relative maturity of cash crop**
- **Do not underestimate the power of networking**
- **Scout fields. Stay on top of problems**
- **Keep plants attached**
- **Do not panic and ask for help**
- **Do not plant vns cereal rye**

More thoughts...

- Collecting good data is critical to success**
- Educate your landlords. Most will be supportive**
- You need to view cover crop as important as cash crop**
- Viewed as an outlier**
- Continue to soil test**
- Do whatever you can to have a cover on every acre**
- Do not get hung up on yield**
- Be patient, the soil starts to change at year 3**
- Establish a baseline to monitor change**

More thoughts...

- **Delta Force**
- **Test on your own farm to see what works or does not work**
- **Remember, the people who are being talked about are the ones creating change. Change is good!**
- **Stop looking at single year ROI, take the average**
- **Be aware of residual chemicals used**
- **Evernote**
- **Do not jeopardize the livelihood of the farm**
- **Buy cover crop seed from reputable source**
- **Terminate cover crop close to time of planting**

You can't do that...Oh yes I can!

- Sacrifice yield to maintain soil health**
- Eliminate crop insurance**
- Plant green into living cover crops**
- Plant beans into 72" tall rye**
- Plant corn into cereal rye**
- It's ok to have 12 plans**
- Slow down and look for validations**
- Park your planter no matter the date**
- Don't plant corn in April again**
- Plant around moth flights**

Cocktails for first timers

- **Corn: oats, sorghum/sudan, radish**
- **Beans: cereal rye**
- **Add diversity when you are ready**
- **Don't give up**

Possible rotations for northern states

2020	2021	2022	2023	2024	2025
corn	wheat	alfalfa	corn	beans	regen
corn	wheat	graze	corn	beans	spclty
beans	regen	corn	wheat	alfalfa	corn
beans	regen	graze	corn	wheat	spclty

Thoughts

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Grazing livestock



Nutrient analysis of Lambs Quarter

June 5th 2019

N	P2O5	0-46-0	K2O	0-0-60	Ca	Mg	S
51	10	21	71	118	19	10	3

Note: 1000 lbs DM biomass per acre



June 29th 2019
Row mow.

**Mowing cover
crop and
weeds in
between the
cash crop.
This excites
me for no till
organic.**

June 21st 2019

First run of the row mow. It is not a silver bullet, but it is a nice addition to the toolbox.



Aug 6th 2019

**These nodules
validate soil
health.**





Pollinator strips

We must do all we can to provide habitat for the bees and the butterflies, the song birds and all other beneficial pollinators. They are essential if we want to achieve balance.

1 out of 3 bites of food is attributed to pollinators.

Pollinator Paluza

3 Buckwheat

1 Chick pea

1 Common vetch

1 Flax

1 Crimson clover

1 Phacelia

2 Rape

2 Sunflower

2 Berseem frosty clover

1 Lentil

2 Yellow mustard

2 Yellow sweet clover

1 Radish

2 Sunn hemp

1 4010 peas

5 Haywire Oats

2 Balansa Fixation clover

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