

Keys to Profitability: Resilience in 2019 and Beyond

Gary Schnitkey and Laura Gentry
University of Illinois



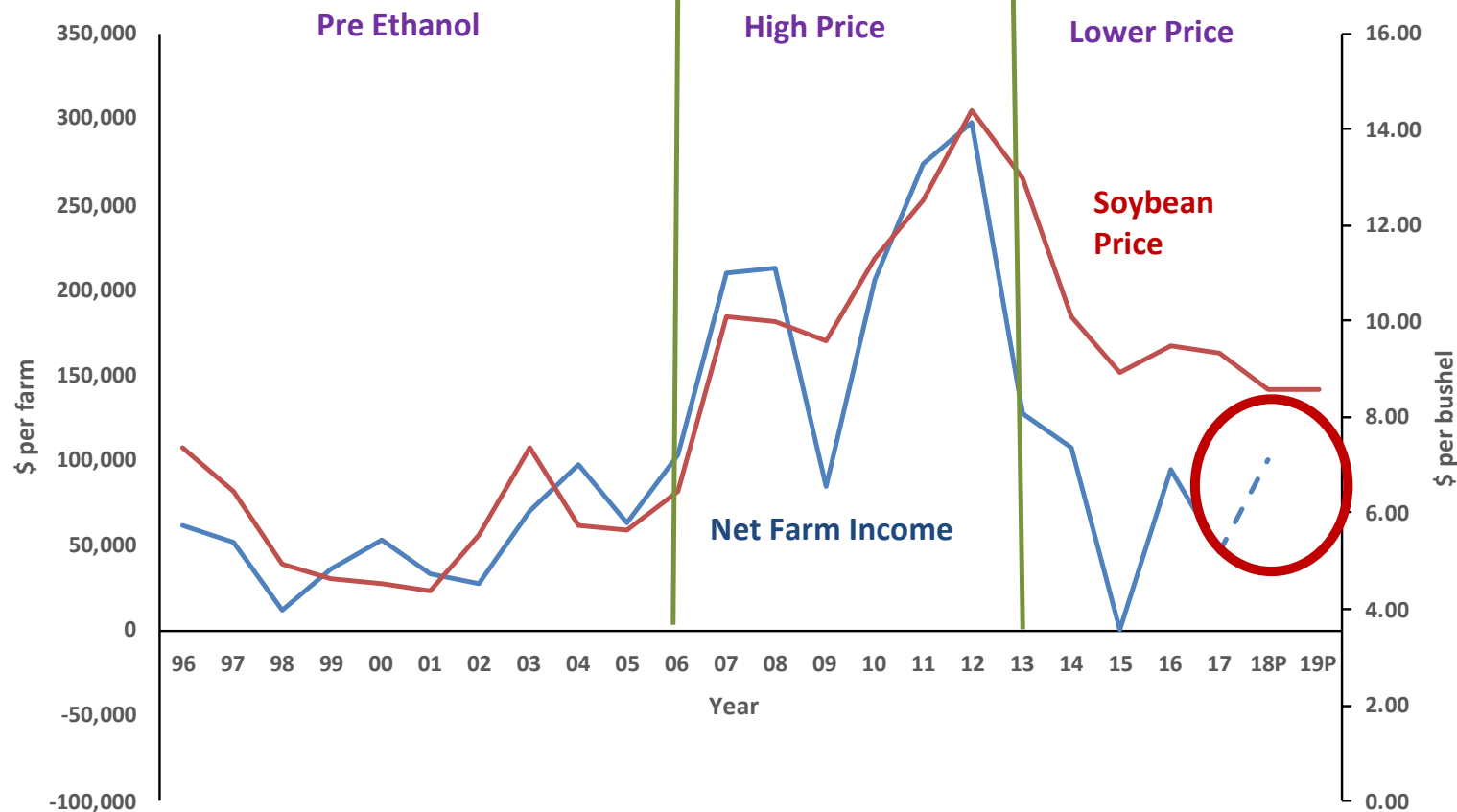
Topics

1. Income Outlook for 2019
2. Economics of Conservation Practices



Grain Farm Income in 2018 Expected Higher than in 2017

Grain Farm Income and Soybean Prices



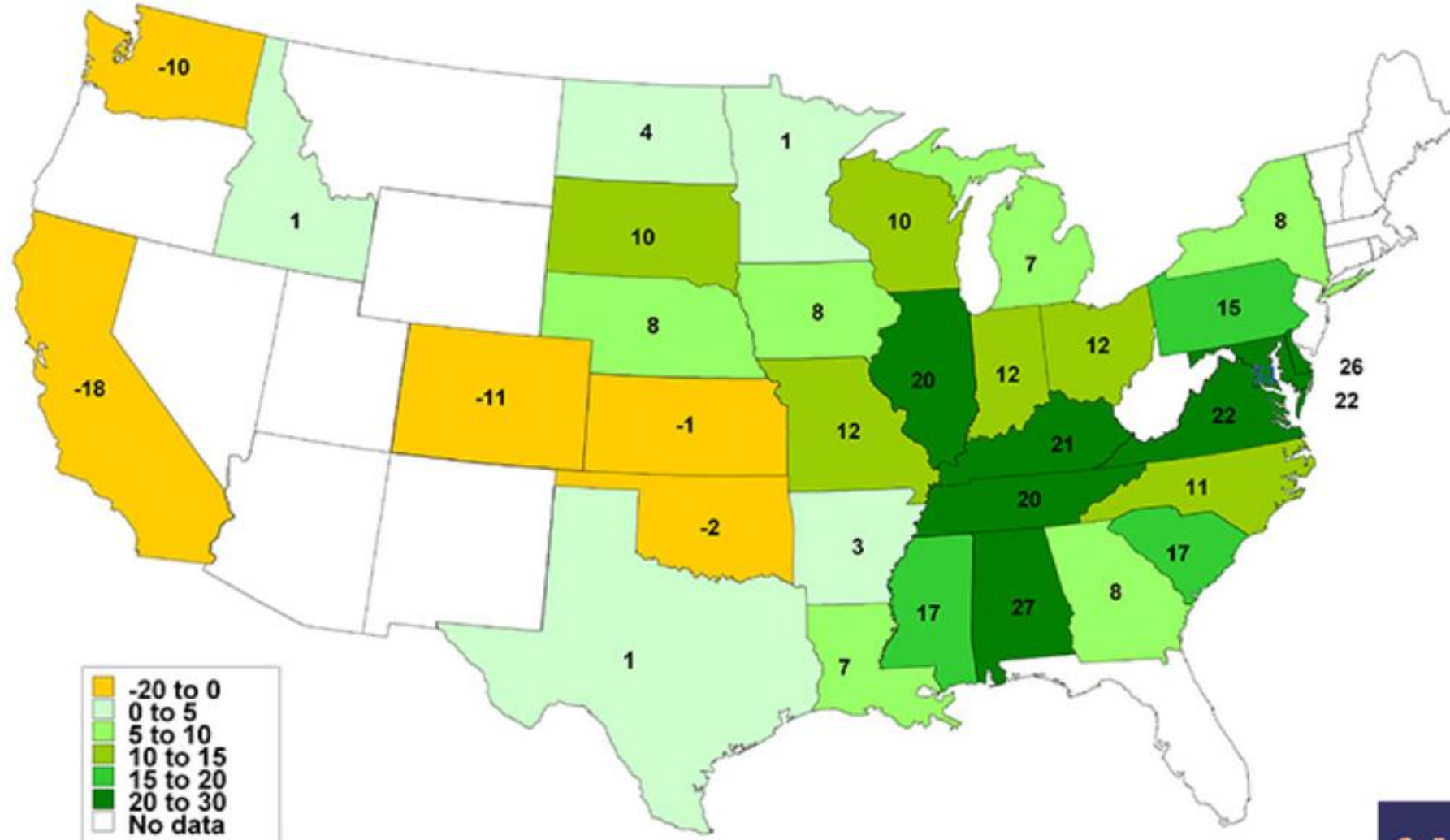
Should see improvement in working capital and debt-to-asset positions on many (not all) farms.

Why?

1. Exceptional yields
2. Chance to price grain at higher prices in spring
3. Market Facilitation Program payments



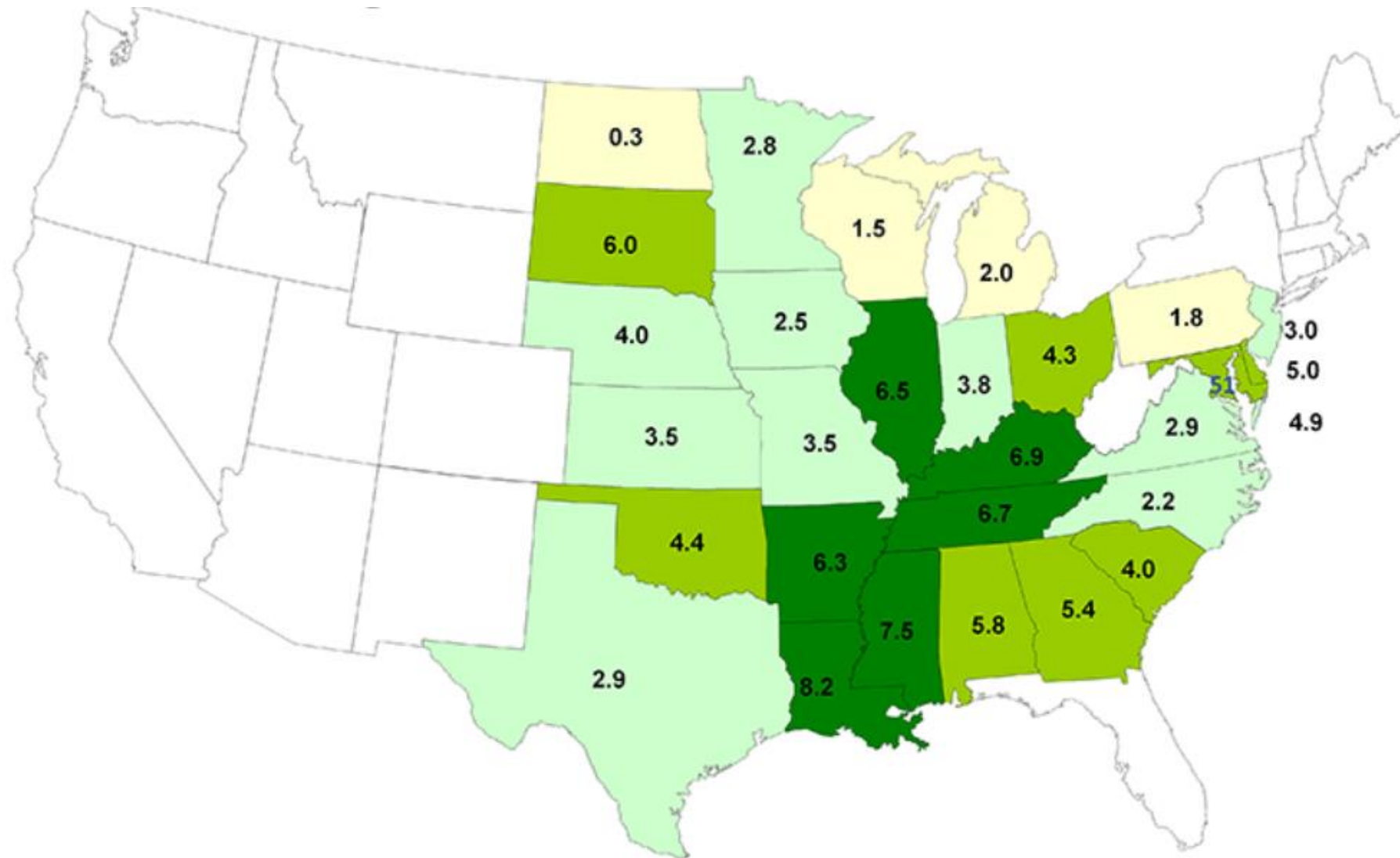
Average Yield-From-Trend, Corn, 2013-2018



Source: Yields from National Agricultural Statistical Service.



Average Yield-From-Trend, Soybeans, 2013-2018



Source: Yields from National Agricultural Statistical Service.



Market Facilitation Program Payments

Rates

Soybeans: \$1.65 per bushel

Wheat: \$.14 per bushel

Corn: \$.01 per bushel

Dairy: \$.12 per cwt

Pork: \$8 per head

Sorghum: \$.86 per bushel

Cotton: \$.06 per pound

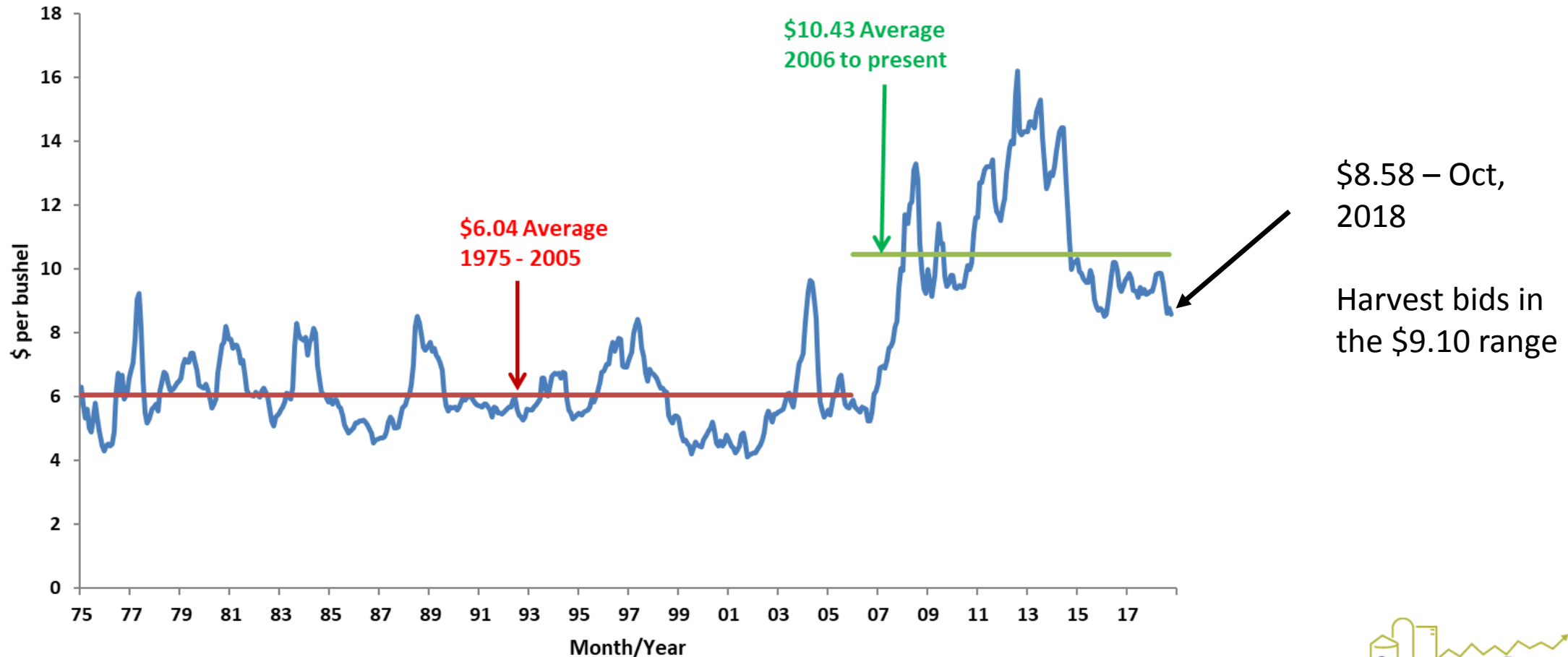
Points

- Important to 2018 income
- Most farmers have received total MFP payments
- Have to Jan 15 (likely to be extended) to sign up for MFP payments
- Administration has indicated that there will not be payments 2019



What has changed? Soybean prices

Soybean Prices, U.S. Monthly from 1975 to Oct, 2018



What has changed?

Increasing Costs

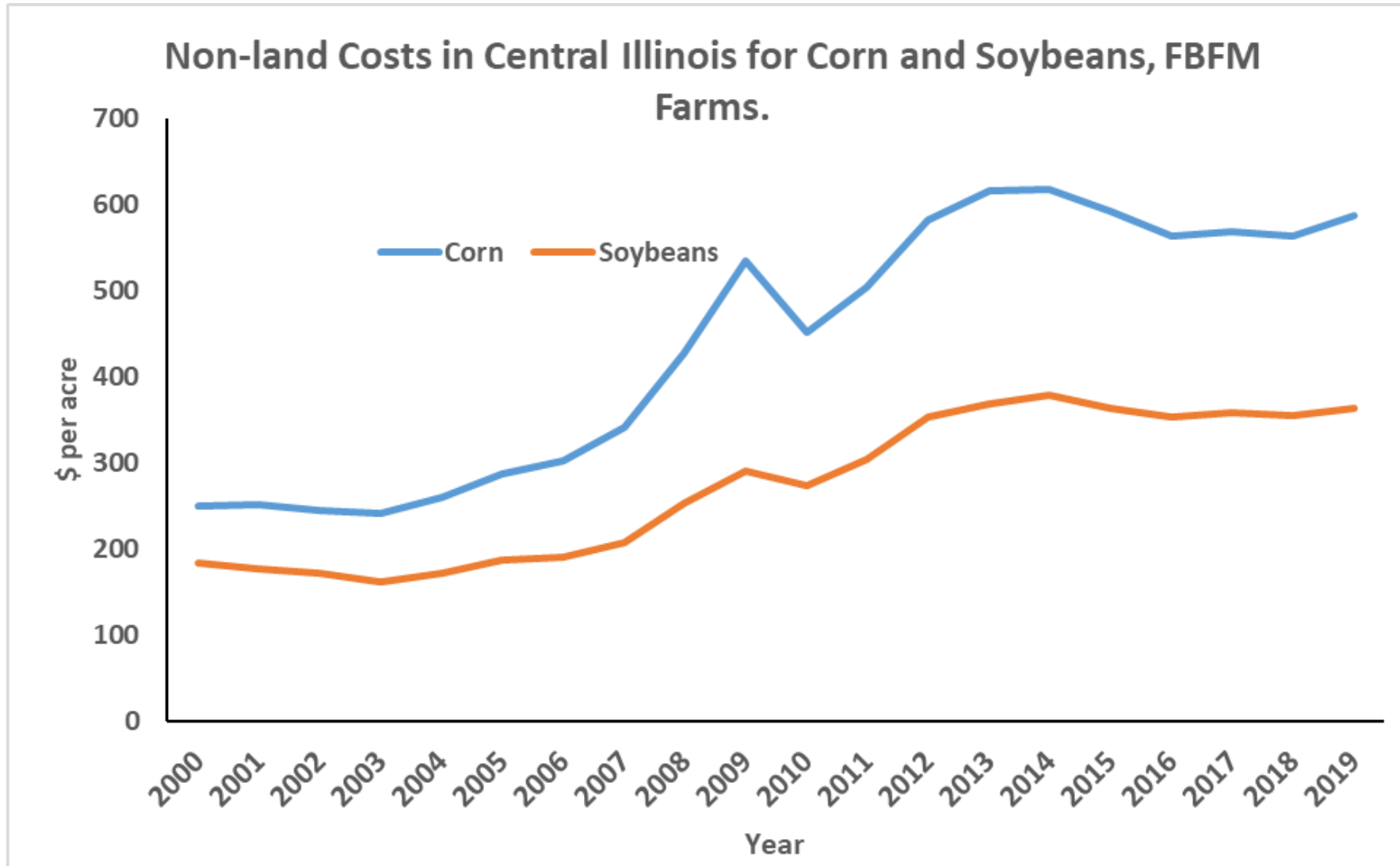
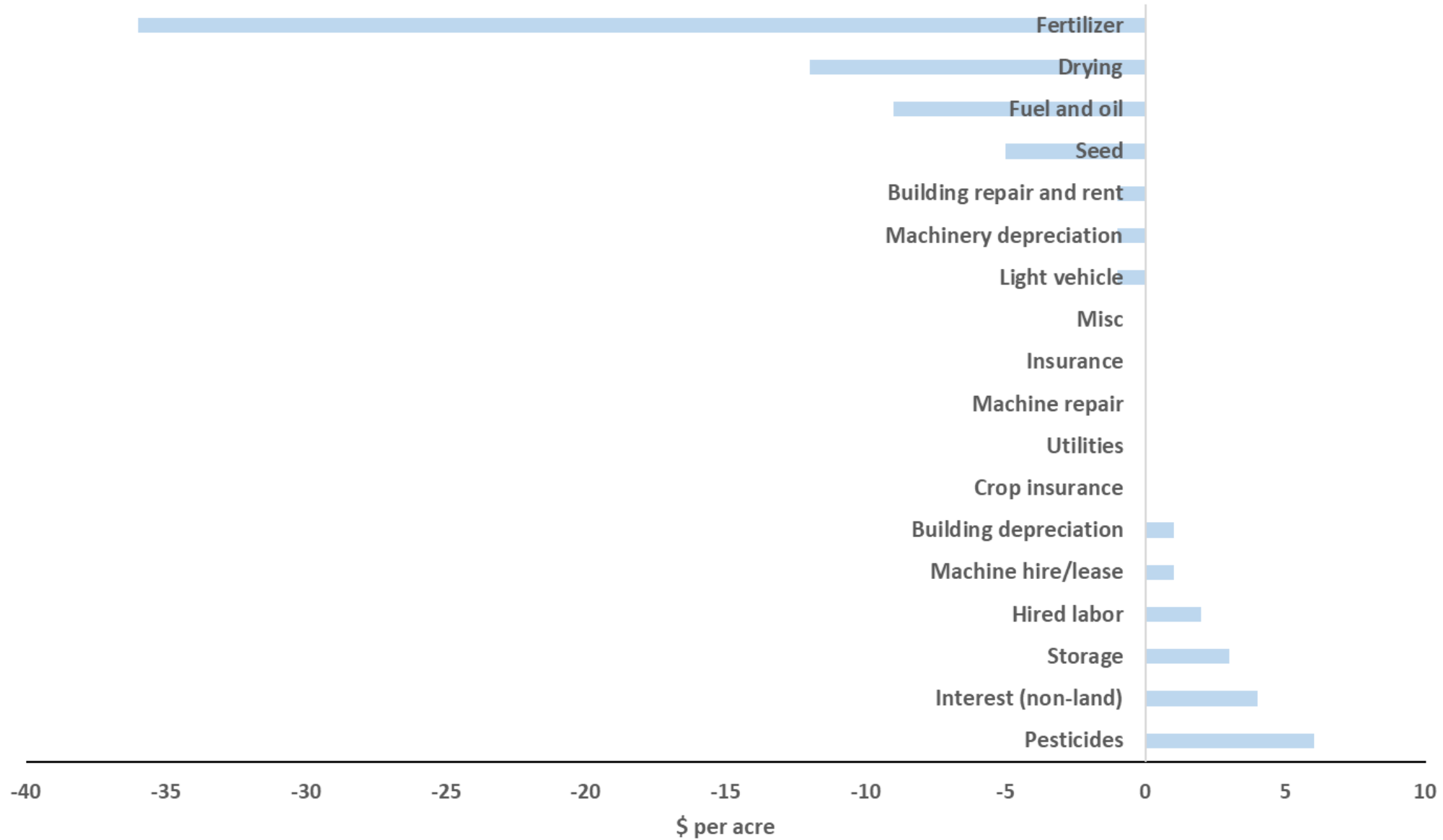


Figure 1. Change in Non-Land Cost from 2014 to 2017,
High-Productivity Farmland in Central Illinois, Corn



Source: Illinois Farm Business Farm

2019 Income Projections

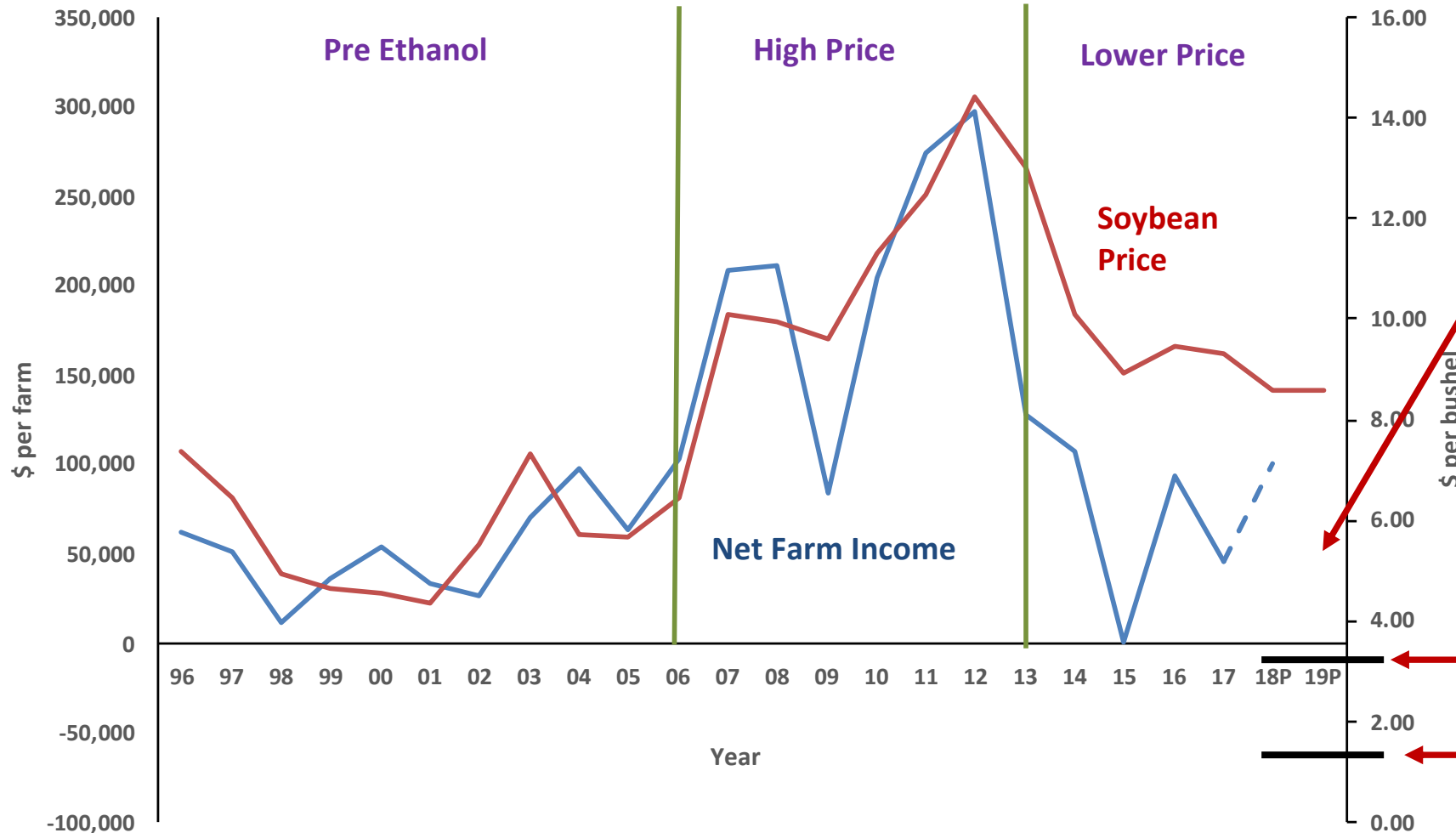
- 2019 Projections: \$3.60 corn and \$8.50 soybeans
- \$7 per base acre in PLC payments

- Increases in non-land costs
 - \$25 per acre for corn
 - \$10 per acre for soybeans

- Cash rents stay the same



2019 Income Projections



Most likely scenarios for ~\$60,000 income

Above-trend yields and \$4.00 corn and \$9.50 soybean prices

or

Above-trend yields and Market Facilitation Program payment

or

A drought and over \$5 corn and over \$10 soybeans

-\$3,000 if we get above trend yields like 2016-2018

-\$60,000 with trend yields Worst incomes since we have records

Precision Conservation Management



- 2016: began enrolling farmers
- 4 PCM regions in IL, 16 counties
- 200 farmers enrolled in Illinois
- ~200,000 acres, 1800 fields

Number of fields	928	952
	Com	Soybeans
SPR	134	134
Nitrogen applied -- total	210	2
-- in DAP/MAP	21	1
-- in Anhydrous Ammonia	93	0
-- in UAN	65	0
Revenue		
Yield per acre	205	65
Crop Revenue	714	613
ARC/PLC or ACRE	22	22
Crop Insurance		
Other Farm Receipts		
Gross Revenue	735	635
Expenses		
P, K and Lime	75	8
Nitrogen	62	0
Pesticides	46	40
Insecticides	1	1
Seed	121	57
Seed - cover crop	0	0
Drying	7	0
Storage	21	6
Crop Insurance	22	15
Direct Costs	354	128
Field work	15	14
Planting - crop	14	14
Planting - cover crop	0	1
Machine hire/lease/application cost	34	21
Harvest	36	32
Power Costs	101	81
Overhead Costs	36	30
Total Non-Land Costs	491	240
Operator and Land Return	244	395

Economic Report

- Produced on each field in PCM
- Per field revenue and costs are
 - Prepared using input (fertilizer, pesticides, etc.) and field operations
 - Standard commodity prices, input prices and field operation costs
- Summaries prepared for
 - Tillage
 - Nitrogen application and methods
 - Cover crops

Tillage and Soybeans

Tillage Method	No of Fields *	SPR *	Yields				Opr and Land Return *
			2015	2016	2017	Average *	
			Bushels per acre				\$ per acre
No-till	434	133	63	67	64	64	397
1 pass	133	135	69	69	64	68	414
2 pass	207	133	66	68	64	66	400
2+ pass	178	134	62	67	61	63	367

* Over three years.

One-pass systems has the highest yields and highest returns



Tillage and Corn

Tillage Method	No of Fields *	SPR *	Yields				Opr and Land Return *
			2015	2016	2017	Average *	
			Bushels per acre				\$ per acre
No-till	124	133	183	204	210	199	231
Strip	124	137	187	221	212	207	252
1 pass	288	135	182	222	212	205	252
2 pass	371	134	197	216	212	209	244

* Over three years.

Don't observe a yield advantage for 2 pass system



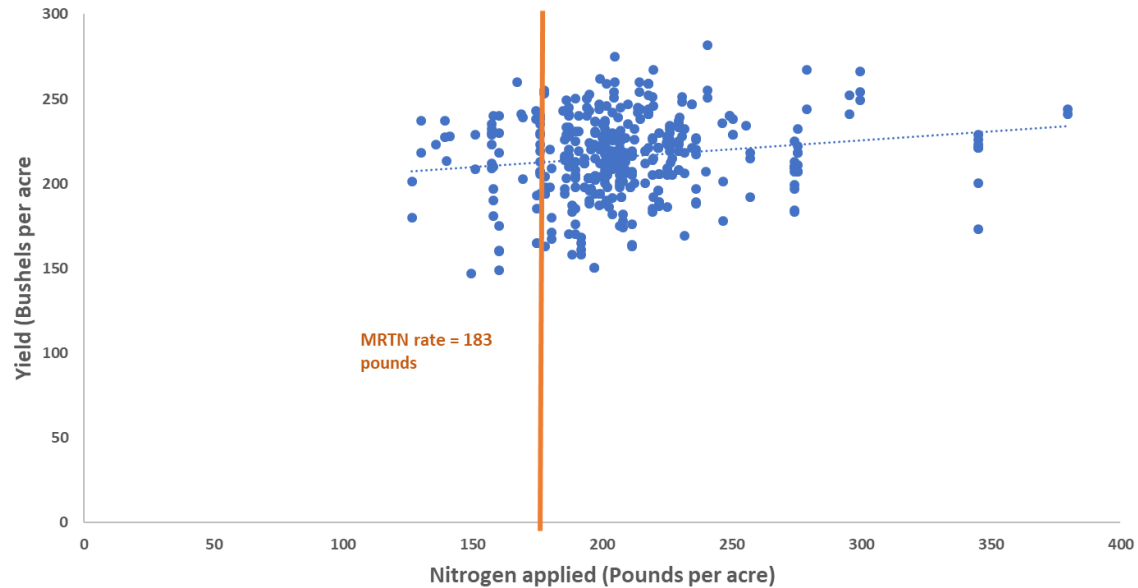
Tillage Suggestions

- May think about cutting back on tillage, particularly in 2019 given that lower amounts have been done
- Experiment: Cut a tillage pass on portion of the field and evaluate

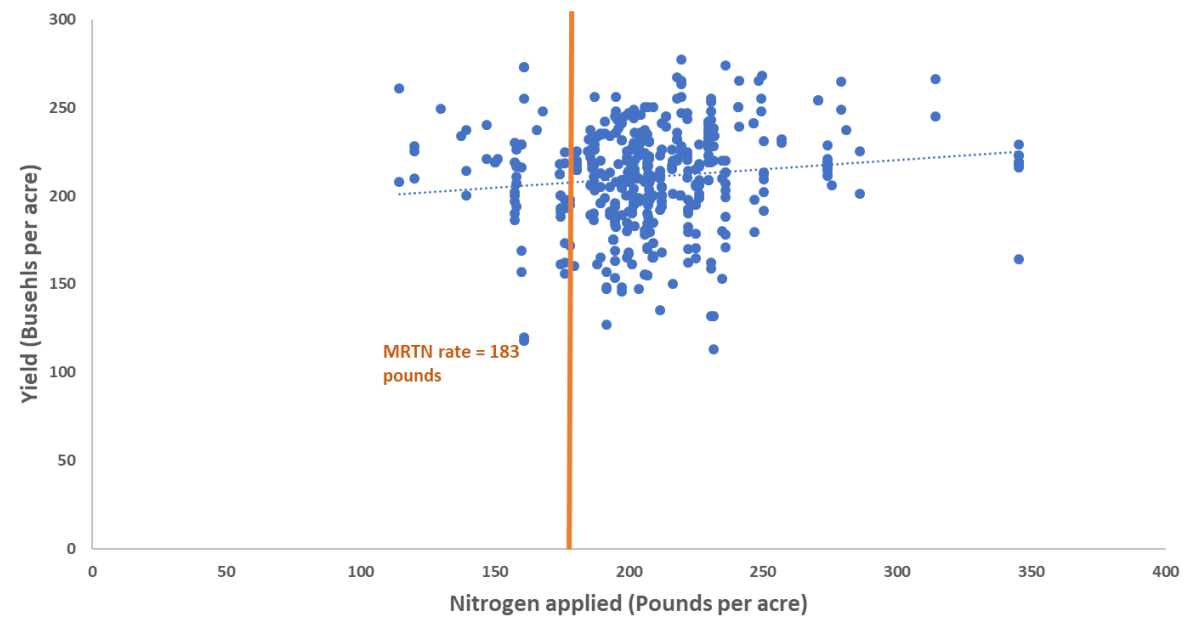


Yields and Nitrogen Application Amounts, All Corn Fields

Corn Yields and Nitrogen Applied, PCM Farms in 2016



Corn Yields and Nitrogen Applied, PCM Farms in 2017

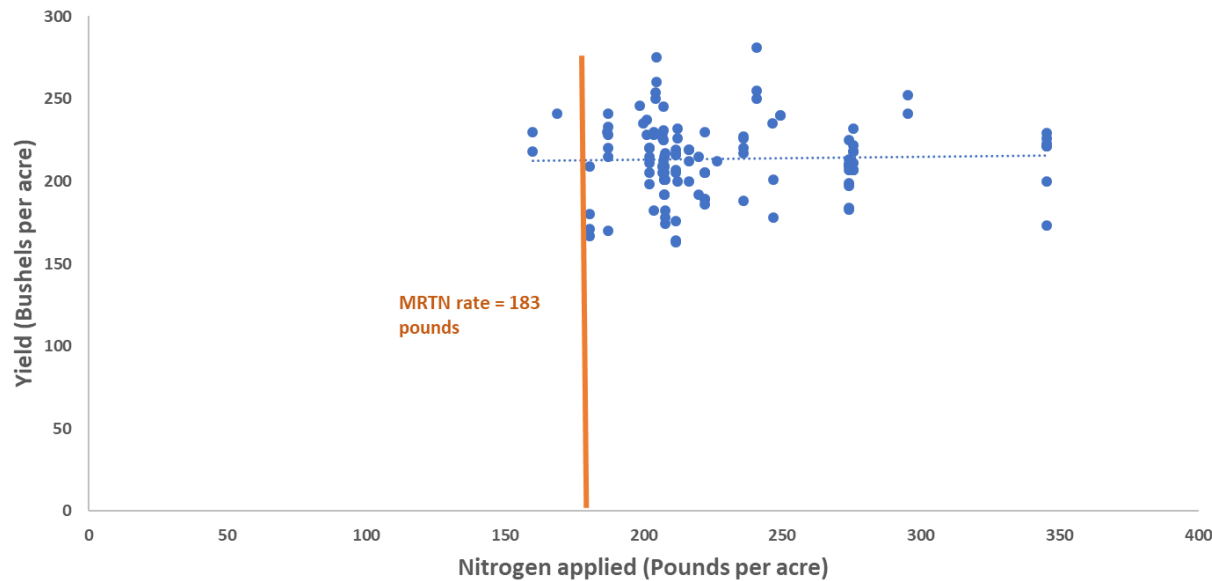


From a statistical standpoint, higher N application rates do not lead to higher yields above MRTN

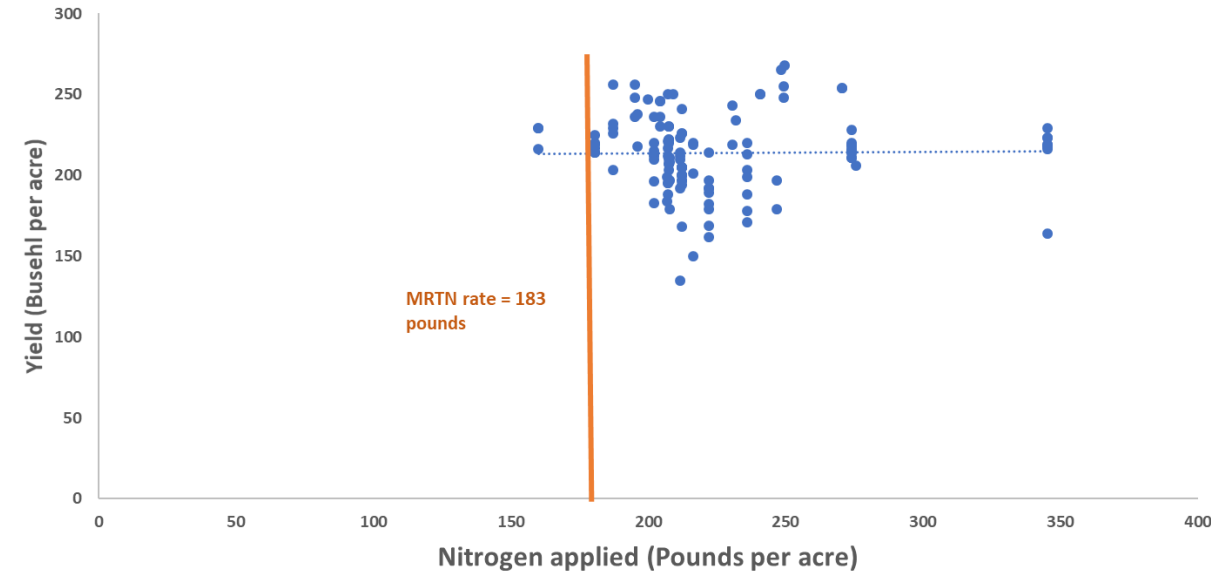


Yields and Nitrogen Application Amounts, Fall Applied Fields

Corn Yields and Nitrogen Applied, Fall Applied PCM Farms in 2016



Corn Yields and Nitrogen Applied, Fall Applied PCM Farms in 2017



From a statistical standpoint, higher N application rates do not lead to higher yields above MRTN



Nitrogen Rates, Yields, and Returns

N amount (lbs per acre)	No of Fields *	SPR	Yield				Opr and Land Return *
			2015	2016	2017	Average *	
			Bushels per acre				
Less than 150	30	133	142	213	218	191	241
151 to 175	61	135	196	209	212	206	277
176 to 200	224	132	182	211	214	202	248
201 to 225	375	135	196	216	214	208	253
Over 225	244	134	187	209	218	204	223

* Over three years (weighted by fields)

Note that highest income category was 151 to 175



Cover Crops

Cover crops with next crop soybeans

Method	No of Fields *	SPR *	Yield *	Opr and Land Return *
None	893	134	65	394
Over winter	51	132	67	410
Terminal	8	135	69	448

* Over three years.

Observations

- Not many fields with cover crops
- Yields were not lower and profit was not lower
- Reduced tillage may have had something to do with higher returns



Cover Crops

- farmdocDaily, August 14, 2018
- Cover crops do reduce nitrogen in tile drained soils
- Good reasons to believe long-term benefits with continual cover crop use (little data)

Economic suggestions

- Suggest picking owned fields (or share rented)
- Suggest continual use of cover crops on the same field
- Suggest coming up with a way of evaluating progress of cover crops
- Works best in no-till situations. Herbicides used to kill cover crop
- There is a need to keep seed costs low (low seeding rates and prices)
- Minimize additional herbicide applications



Summary

1. Incomes lower in 2019
2. Question tillage and higher N rates
3. Cover crop suggestions

