

# Scenario Analysis With CropZilla



Brian Watkins,  
Founder  
CropZilla Software



# CropZilla Scenario Analysis

- Strategic Posture
- Software Deeper Dive
  - Data Input
  - Reports
- Scenario Analysis



# Strategic Posture

1. Profit is the Key
2. High Yield is a Cost Control Strategy
3. Manage Margins
4. Do not Eliminate Investment Budget
  1. Cost - Benefit



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  - Data Input
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## Equipment

Speed x width, fill time, machine capacity, market value



## Labor & Inputs

Job qualifications, hours per day, seed varieties, chemicals, fertilizer



## Fields

Location, size, field efficiency, harvest destination

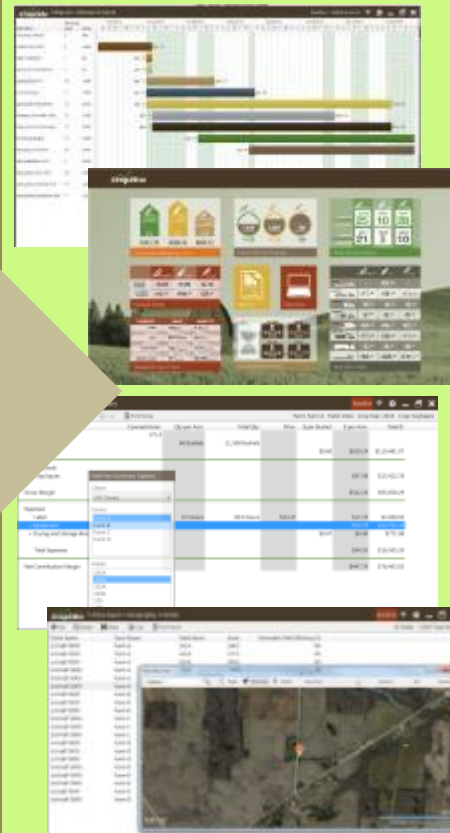


## Field Plans

Field passes, harvest moisture, projected yield, travel times, tender labor, crop mix, etc



## Knowledge = profits



Import... Map...

Client Name: Watkins Farm ▾

Farm Name: Howard Watkins ▾

Field Name: 009

Size: 28.8 acres

Estimated Size: 27 acres

Field Entry Point: 40.680020, -83.543011

Field Efficiency

Default: 69 %

Average Estimated: 69.31 %

Implement Width	Efficiency %
20	85.08
30	83.61
40	79.5
50	75.17
60	71.65
70	67.26
80	60.16
90	51.67
100	60.03
110	62.5
120	65.75

Show Path Clear Path

Field Boundary



Speed

OK Cancel



< Cropzilla

Challenger MT765C  
Firmware 01.80 · Edit PUC

Last Seen History

< Aug 22, 2017 >

Machine Startup 8:10 AM

Operating Edit

Machine Off 11:49 AM

Machine Startup 11:52 AM

Operating Edit

Machine Off 2:34 PM



Field/Calendar Year: 191 2016	Yearly Data		Nutrient Data in lbs per Acre	
<input checked="" type="checkbox"/> Show all fields Template Name: *com - 19 Acres: 146.3 Input Lat/Long: 40.632101, -83.631682	Crop 2015: None 2016: Corn 2017: Soybeans	Yield Actual: 0 Goal: 162.4 bu/acre Goal: 60 bu/acre	Harvest Moisture: 0 % Harvest Moisture: 15 % Harvest Moisture: 13 %	Removed N: 108.808 P: 56.84 K: 40.6 Applied 178.3807 111.176 86.28

☐ Exclude this Field Plan from reports

New Field Pass 
 New Delay 
 Move Up 
 Move Down 
 Remove 
 Collapse All 
 Expand All 
 Add to Field Pass

<b>Field Pass 1</b> Crop Year: 2016 Dry Fert Strip - Tractor: 775E Applicator: JD Air Cart <a href="#">Dry Fertilizer Blend:</a> Fertilizer: 11-52-0 Pounds per Acre: 150 Fertilizer: 0-0-60 Pounds per Acre: 50 Fertilizer: Urea Pounds per Acre: 160 Fertilizer: zinc sulfate Pounds per Acre: 3 Tender: Dry Fert Trailer	Percent of Field Pass accumulated to selected Crop Year: 100 Portion of field covered: 100 %
<b>Field Pass 2</b> Crop Year: 2016 Planting Corn after Strip - Tractor: 765C Planter: JD 2012 24 Row Seed Type: 5073 Seeds per Acre: 34000 <a href="#">Liquid Hopper Contents:</a> None Tender: Seed Tender Powell	Percent of Field Pass accumulated to selected Crop Year: 100 Portion of field covered: 100 %
<b>Field Pass 3</b> Crop Year: 2016 Spray Corn Pre-Emerge Applicator: Hagie <a href="#">Liquid Hopper Contents:</a> Tank Mix Recipe: 2016 corn conv. pre w/RU Carrier:Water Gallons per Acre: 7 Tender: Spray Lowboy	Percent of Field Pass accumulated to selected Crop Year: 100 Portion of field covered: 100 %
<b>Field Pass 4</b> Crop Year: 2016 Late sidedress corn Applicator: Hagie <a href="#">Liquid Hopper Contents:</a> Fertilizer: 28% UAN Gallons per Acre: 27.2	Percent of Field Pass accumulated to selected Crop Year: 100 Portion of field covered: 100 %

### Baling

Custom Baler

### Combine

Shelling Corn

Cutting beans

Cutting soybeans 2

Combine wheat 14 Claas

### Grain Cart

Soybean Cart

Corn Cart

### Grain Hauling

Volvo/Wilson

05Freightliner/Wilson

NoBugShield/Timpte

BugShield/HiSide

### Planting

Planting Corn after Strip

No-till Soybeans

JD 1560 Drill Cover Crops

Corn Plant Conv Till

### Powered Application



# CropZilla Scenario Analysis

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  - **Reports**
- Scenario Analysis





## Watkins Farm

9800 TR 179  
Kenton, Ohio 43326  
419-673-9424

Monday, January 4, 2016

### Operations Summary by Crop

Client: Watkins Farm Number of Fields: 93

Operation Name	Total Acres	Total Hours	Equip/Acre	Labor/Acre	Fuel/Acre	Total/Acre.
Combine wheat 14 Claas	282.3	24.4	\$20.02	\$2.39	\$2.17	\$24.59.
Cutting beans	3,303.0	276.8	\$19.51	\$2.32	\$2.08	\$23.91.
Shelling Corn	3,623.8	323.0	\$21.66	\$2.47	\$2.23	\$26.36.
Custom Dry Fert	422.4	0.0	\$0.00	\$0.00	\$0.00	\$5.00.
Corn Cart	3,623.8	323.0	\$13.53	\$2.44	\$1.13	\$17.10.
Soybean Cart	3,488.9	290.7	\$11.22	\$2.28	\$1.07	\$14.57.
05Freightliner/Wilson	3,906.1	347.4	\$1.52	\$2.44	\$0.28	\$4.24.
BugShield/Timpte	3,549.5	302.2	\$0.93	\$2.33	\$0.28	\$3.55.
NoBugShield/HiSide	3,303.0	276.8	\$0.80	\$2.30	\$0.22	\$3.31.
Volvo/Wilson	3,906.1	347.4	\$1.57	\$2.44	\$0.28	\$4.28.
Planting Corn after Strip	3,623.8	173.9	\$11.32	\$1.60	\$0.86	\$13.78.
No-till Soybeans	3,303.0	139.8	\$18.06	\$1.45	\$1.03	\$20.55.
JD 1560 Drill Cover Crops	282.3	26.1	\$15.91	\$2.54	\$0.98	\$19.42.
Late sidedress corn	3,395.6	68.9	\$2.73	\$1.12	\$0.34	\$4.20.
Spray Bean Burndown	568.7	13.7	\$3.27	\$1.21	\$0.39	\$4.87.
Spray Bean Burndown Rye	2,653.1	36.1	\$1.74	\$0.74	\$0.20	\$2.68.
Spray Bean First Post	3,303.0	50.1	\$1.83	\$0.71	\$0.21	\$2.75.
Spray Bean Fungicide/Other	845.5	17.0	\$2.88	\$1.12	\$0.39	\$4.38.
Spray Bean Second Post	3,282.6	51.1	\$2.00	\$0.44	\$0.23	\$2.67.
Spray Corn Pre-Emerge	3,623.8	48.2	\$1.71	\$0.60	\$0.19	\$2.51.
Spraying Corn Post	1,973.0	30.2	\$1.97	\$0.76	\$0.23	\$2.96.



 Add  Edit  Delete  Copy  Print Preview

Crop Year: 2016 Client: (All Clients) Farms: WFS Fields: 007 Crop Year: 2016 Farm: WFS Field: 007 Crop: Soybeans

	Covered Acres	Qty per Acre	Total Qty	Price	\$ per Unit	\$/Field Acre	Total \$
Cost of Goods							
+ Crop Inputs						\$104.23	\$6,535.18
Gross Margin						\$414.73	\$26,003.62
Expenses							
- Operations							
<a href="#">Spreading Fertilizer/cover crops</a>	62.7					\$4.33	\$271.67
<a href="#">mcfarlane</a>	62.7					\$7.92	\$496.40
<a href="#">Spray Bean Burndown Rye</a>	62.7					\$2.70	\$169.33
<a href="#">No-till Soybeans</a>	62.7					\$17.79	\$1,115.73
<a href="#">Spray Bean First Post</a>	62.7					\$2.63	\$165.01
<a href="#">Spray Bean Second Post</a>	62.7					\$2.65	\$166.01
<a href="#">Cutting beans</a>	62.7					\$21.46	\$1,345.48
<a href="#">NoBugShield/Timpte</a>	62.7					\$2.23	\$140.03
<a href="#">BugShield/HiSide</a>	62.7					\$2.27	\$142.18
<a href="#">Soybean Cart</a>	62.7					\$13.60	\$852.45
Total Equipment and Labor Cost	62.7					\$77.58	\$4,864.29
+ Drying and Storage Bins					\$0.16	\$7.86	\$492.65
Total Expenses						\$85.44	\$5,356.94





No-till Soybeans ✕

Machine	Depr	Capital	Repairs	Insurance	Fuel	Labor	Total/covered acre	Total/field acre	Total
Seed Tender	\$0.0804	\$0.0708	\$0.0076	\$0.0040	\$0.00...	\$0.00...	\$0.16	\$0.16	\$10.21
2000 Chevy K3500	\$0.0021	\$0.0017	\$0.0030	\$0.0001	\$0.00...	\$0.24...	\$0.26	\$0.26	\$16.12
JD 8360RT	\$2.3429	\$0.8051	\$0.1394	\$0.0352	\$0.92...	\$0.98...	\$5.23	\$5.23	\$327.99
Kinze Twin Row	\$6.0120	\$5.4036	\$0.4917	\$0.2364	\$0.00...	\$0.00...	\$12.14	\$12.14	\$761.41
Total	\$8.4374	\$6.2812	\$0.6417	\$0.2757	\$0.92...	\$1.23...	\$17.79	\$17.79	\$1,115.73

OK

WINDOWS OF

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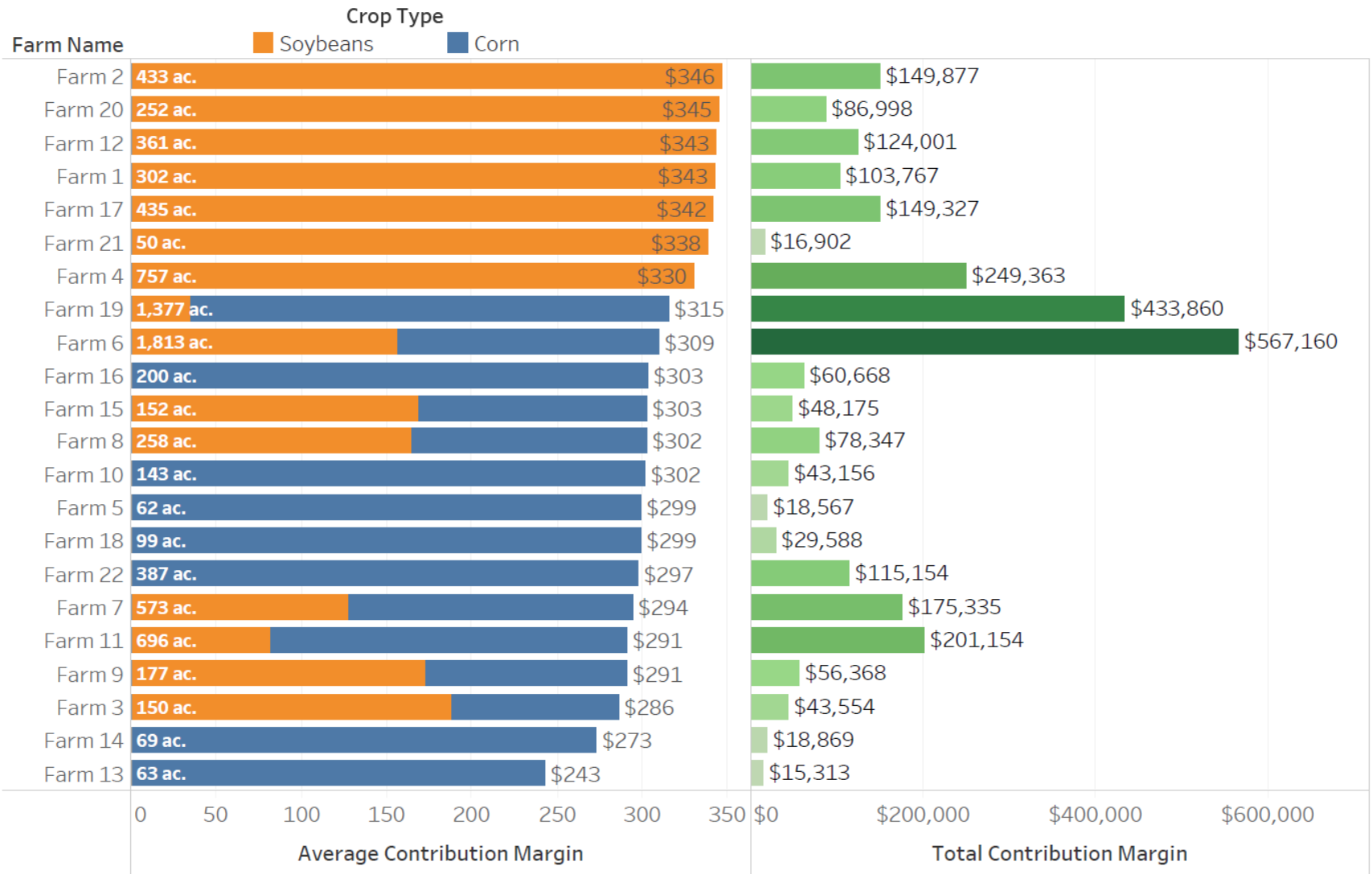


	All Crops	Per Acre	Soybeans (Bu.)	Per Acre	Corn (Bu.)	Per Acre	Wheat (Bu.)	Per Acre	Corn on Corn (Bu.)	Per Acre
Net Cash Flow/unit			\$1.58		\$0.45		\$0.04		\$0.62	
Net Cash Breakeven/unit			\$7.92		\$3.15		\$4.21		\$3.18	
<b>Accounting Profit and Loss</b>	\$855,444	\$118.86	\$509,151	\$133.22	\$330,046	\$104.27	\$5,937	\$44.37	\$10,309	\$136.18
Accounting P&L/unit			\$2.17		\$0.56		\$0.47		\$0.76	
Accounting Breakeven/unit			\$7.33		\$3.04		\$3.78		\$3.04	
<b>Economic Costs - Opportunity</b>										
Owned Land (net of taxes)	\$28,048	\$3.90	\$8,714	\$2.28	\$19,333	\$6.11	\$0	\$0.00	\$0	\$0.00
Capital Cost on Equipment	\$175,727	\$24.42	\$76,160	\$19.93	\$94,361	\$29.81	\$3,120	\$23.32	\$2,086	\$27.55
Capital Cost on Drying and Storage	\$39,154	\$5.44	\$11,420	\$2.99	\$26,953	\$8.52	\$0	\$0.00	\$781	\$10.31
Capital Cost Other Hours/Miles/Bldgs	\$47,294	\$6.57	\$25,116	\$6.57	\$20,801	\$6.57	\$879	\$6.57	\$497	\$6.57
Less Interest Expense	(\$97,000)	(\$13.48)	(\$51,513)	(\$13.48)	(\$42,663)	(\$13.48)	(\$1,803)	(\$13.48)	(\$1,020)	(\$13.48)
Capital Cost on Working Capital (6 mos.)										
8% Inputs	\$39,068	\$5.43	\$15,417	\$4.03	\$22,426	\$7.08	\$680	\$5.08	\$546	\$7.21
8% Other Cash Expenses	\$86,423	\$12.01	\$46,532	\$12.17	\$37,480	\$11.84	\$1,544	\$11.54	\$867	\$11.46
Unpaid Labor	\$147,500	\$20.49	\$78,332	\$20.49	\$64,875	\$20.49	\$2,742	\$20.49	\$1,551	\$20.49
Total Economic Costs	\$466,214	\$64.78	\$210,178	\$54.99	\$243,566	\$76.95	\$7,161	\$53.52	\$5,308	\$70.12
<b>Economic Profit and Loss</b>	\$389,230	\$54.08	\$298,973	\$78.22	\$86,480	\$27.32	(\$1,224)	(\$9.15)	\$5,001	\$66.06
Economic P&L/unit			\$1.27		\$0.15		(\$0.10)		\$0.37	
Economic Breakeven/unit			\$8.22		\$3.45		\$4.35		\$3.43	





## Contribution Margin by Farm





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- **Scenario Analysis**



## CAPITAL BUDGETING TOOLS



- Capital Budgeting is Essential
- Assets must Drive Returns
- Impossible Without \$\$ Forecast
- Analysis can Enhance Intuition
- \$100/acre on the Table



# Scenario: purchase new planter

**Update Planter**

Equipment Nickname: Great Plains Twin Row

Manufacturer: Great Plains

Serial Number: N/A

Model: 48 Twin Row

Model Year: 2010

Ownership Status: Owned

Rental Rate per Acre: \$0.00

Minimum Rental Acres: 0

Year Purchased: 2010

Purchase Price: \$174,000.00

Estimated Useful Life: 0 years

Years of Use: 0 as of 12/31/past year

Tax Basis: \$0.00 as of 12/31/past year

Remaining Years Depreciation: 0

Warranty End Date:

Number of Rows: 48

Row Spacing: 15 inches

Draft: 300 pounds/foot

Operating Field Speed: 5.7 mph

Overlap With Auto Steer: 0.2 %

Overlap Without Auto Steer: 2 %

Effective Seed Hopper Capacity: 8,000 pounds

Seed Hopper Fill Time: 40 minutes

Effective Liquid Hopper Capacity: 0 gallons

Liquid Hopper Fill Time: 0 minutes

Effective Dry Hopper Capacity: 0 pounds

Dry Hopper Fill Time: 0 minutes

Rebuild Interval: 0 acres

Rebuild Cost per Planter Row: \$55.00

Estimated Current Value: \$80,000.00

Depreciation per Acre: \$3.00

☐ Can Plant Cover Crop

OK Cancel



**Update Planter**

Equipment Nickname: John Deere

Manufacturer: John Deere

Serial Number: N/A

Model: 48 Twin Row

Model Year: 2016

Ownership Status: Owned

Rental Rate per Acre: \$0.00

Minimum Rental Acres: 0

Year Purchased: 2016

Purchase Price: \$250,000.00

Estimated Useful Life: 0 years

Years of Use: 0 as of 12/31/past year

Tax Basis: \$0.00 as of 12/31/past year

Remaining Years Depreciation: 0

Warranty End Date:

Number of Rows: 48

Row Spacing: 15 inches

Draft: 300 pounds/foot

Operating Field Speed: 5.7 mph

Overlap With Auto Steer: 0.2 %

Overlap Without Auto Steer: 2 %

Effective Seed Hopper Capacity: 8,000 pounds

Seed Hopper Fill Time: 20 minutes

Effective Liquid Hopper Capacity: 0 gallons

Liquid Hopper Fill Time: 0 minutes

Effective Dry Hopper Capacity: 0 pounds

Dry Hopper Fill Time: 0 minutes

Rebuild Interval: 0 acres

Rebuild Cost per Planter Row: \$55.00

Estimated Current Value: \$250,000.00

Depreciation per Acre: \$5.00

☐ Can Plant Cover Crop

OK Cancel

**CropZilla** Reports Operations Summary by Crop

Client: Watkins Farm Crop Type: Soybeans Number of Fields: 45

Crop Type	Operation Type	Operation Name	Total Acr..	Total Hours	Equip Cost/..	Labor Cost/..	Fuel Cost/Acre	Total Cost/Acre
Soybeans	Combine	Cutting beans	1,691.55	178.94	\$30.56	\$2.93	\$3.37	<del>\$38.86</del>
Soybeans	Planting Soybeans	No-till Soybeans	3,383.1	138.72	\$11.38	\$1.41	\$1.30	<b>\$14.09</b>
Soybeans	Powered Application	Spray Bean Burndown	3,383.1	50.91	\$1.96	\$0.75	\$0.28	\$2.98
Soybeans	Powered Application	Spray Bean Second Post	3,383.1	50.91	\$1.96	\$0.42	\$0.28	\$2.66

**CropZilla** Reports Operations Summary by Crop

Baseline - New Baurer twin bean planter All Clients Crop Type: Soybeans Number of Fields: 45

Crop Type	Operation Type	Operation Name	Total Acres	Total Hours	Equip Cost/..	Labor Cost/..	Fuel Cost/Acre	Total Cost/Acre
Soybeans	Combine	Cutting beans	1,691.55	178.94	\$30.56	\$2.93	\$3.37	<del>\$38.86</del>
Soybeans	Planting Soybeans	No-till Soybeans	3,383.1	131.39	\$18.35	\$1.33	\$1.23	<b>\$20.92</b>
Soybeans	Powered Application	Spray Bean Burndown	3,383.1	50.91	\$1.96	\$0.75	\$0.28	\$2.98
Soybeans	Powered Application	Spray Bean Second Post	3,383.1	50.91	\$1.96	\$0.42	\$0.28	\$2.66
Soybeans	Grain Cart	Soybean Cart	3,383.1	178.94	\$9.63	\$1.45	\$0.88	\$11.96
Soybeans	Grain Hauling	Volvo/Wilson	3,138.8	165.16	\$0.48	\$1.44	\$0.17	\$2.09
Soybeans	Combine	Cutting soybeans 2	1,691.55	178.94	\$24.30	\$2.93	\$3.36	\$30.59
Soybeans	Grain Hauling	05Freightliner/Wilson	3,204.8	167.79	\$0.47	\$1.43	\$0.16	\$2.07
Soybeans	Grain Hauling	BugShield/Timpte	3,196.3	166.60	\$0.27	\$1.43	\$0.16	\$1.86
Soybeans	Powered Application	Spray Bean First Post	3,383.1	45.37	\$1.75	\$0.67	\$0.25	\$2.66
Soybeans	Powered Application	Spray Bean Burndown ..	1,623.3	18.85	\$1.48	\$0.64	\$0.20	\$2.33
Soybeans	Custom Application	Custom Dry Fert	2,305	0.00	\$0.00	\$0.00	\$0.00	\$5.00
Totals			33,766.8	1,333.8	\$6.30	\$1.19	\$0.69	\$8.18



# CropZilla Farms

## 2017 "Baseline" Summary

8/18/2017

### Profitability

	Total/Acre	Soybeans	Corn	Wheat
Acres	7196.9	3822	3165.4	133.8
Average Yield		61.37	186.52	93.95
Price		\$9.51	\$3.60	\$4.25
Contribution Margin	\$359.31	\$383.90	\$332.64	\$280.96

### Breakeven Per Sales Unit

	Total/Acre	Soybeans	Corn	Wheat
Net Cash Flow		\$7.91	\$3.21	\$4.18
Accounting P&L		\$7.34	\$3.12	\$3.88
Economic P&L		\$8.26	\$3.52	\$4.34

### Breakeven Per Acre

	Total/Acre	Soybeans	Corn	Wheat
Net Cash Flow	\$85.16	\$97.77	\$72.57	\$6.33
Accounting P&L	\$112.67	\$133.14	\$90.16	\$46.10
Economic P&L	\$47.69	\$76.39	\$14.96	(\$8.56)

### Total Farm Operations Costs (\$/Acre)

	Total/Acre	Soybeans	Corn	Wheat
Labor	\$17.38	\$15.55	\$19.63	\$16.99
Equipment	\$95.98	\$85.28	\$108.74	\$92.74
Total Labor/Equipment	\$113.36	\$100.83	\$128.37	\$109.73
Total Dry/Storage	\$22.01	\$9.49	\$37.98	\$0.00

### Key Operations Average Costs (\$/Acre)

	Average/Acre	Soybeans	Corn	Wheat
Planting	\$17.87	\$21.40	\$12.88	\$35.03
Spraying	\$3.91	\$3.74	\$3.78	\$13.04
Combine or Harvester	\$27.13	\$22.39	\$32.75	\$29.51
All Harvester Elements		\$37.21	\$56.88	\$50.98

### Capacity Measure

	Total/Acre	Soybeans	Corn	Wheat
Days to Plant		12	14	3
Days to Harvest		30	34	2



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# Cropzilla Farms

## 2017 "Baseline" Summary

8/18/2017

### Profitability

	Total/Acre	Soybeans	Corn	Wheat
Acres	7196.9	3822	3165.4	133.8
Average Yield		61.37	186.52	93.95
Price		\$9.51	\$3.60	\$4.25
Contribution Margin	\$359.31	\$383.90	\$332.64	\$280.96

### Breakeven Per Sales Unit

	Total/Acre	Soybeans	Corn	Wheat
Net Cash Flow		\$7.91	\$3.21	\$4.18
Accounting P&L		\$7.34	\$3.12	\$3.88
Economic P&L		\$8.26	\$3.52	\$4.34

### Breakeven Per Acre

	Total/Acre	Soybeans	Corn	Wheat
Net Cash Flow	\$85.16	\$97.77	\$72.57	\$6.33
Accounting P&L	\$112.67	\$133.14	\$90.16	\$46.10
Economic P&L	\$47.69	\$76.39	\$14.96	(\$8.56)

### Total Farm Operations Costs (\$/Acre)

	Total/Acre	Soybeans	Corn	Wheat
Labor	\$17.38	\$15.55	\$19.63	\$16.99
Equipment	\$95.98	\$85.28	\$108.74	\$92.74
Total Labor/Equipment	\$113.36	\$100.83	\$128.37	\$109.73
Total Dry/Storage	\$22.01	\$9.49	\$37.98	\$0.00

### Key Operations Average Costs (\$/Acre)

	Average/Acre	Soybeans	Corn	Wheat
Planting	\$17.87	\$21.40	\$12.88	\$35.03
Spraying	\$3.91	\$3.74	\$3.78	\$13.04
Combine or Harvester	\$27.13	\$22.39	\$32.75	\$29.51
All Harvester Elements		\$37.21	\$56.88	\$50.98

### Capacity Measure

	Total/Acre	Soybeans	Corn	Wheat
Days to Plant		12	14	3
Days to Harvest		30	34	2



# Cropzilla Farms

## 2017 "Harvest Twin Row Bean Planter" Summary

8/18/2017

### Profitability

	Total/Acre	Soybeans	Corn	Wheat
Acres	7196.9	3849	3165.4	106.8
Average Yield		64.28	186.52	100
Price		\$9.50	\$3.60	\$4.25
Contribution Margin	\$375.33	\$415.75	\$328.50	\$309.55

### Breakeven Per Sales Unit

	Total/Acre	Soybeans	Corn	Wheat
Net Cash Flow		\$7.60	\$3.24	\$3.87
Accounting P&L		\$7.03	\$3.15	\$3.88
Economic P&L		\$7.93	\$3.56	\$4.06

### Breakeven Per Acre

	Total/Acre	Soybeans	Corn	Wheat
Net Cash Flow	\$96.45	\$121.73	\$67.29	\$37.65
Accounting P&L	\$124.53	\$158.54	\$84.53	\$75.23
Economic P&L	\$58.15	\$100.53	\$7.87	\$18.58

### Total Farm Operations Costs (\$/Acre)

	Total/Acre	Soybeans	Corn	Wheat
Labor	\$17.12	\$15.17	\$19.57	\$15.38
Equipment	\$95.36	\$82.96	\$110.25	\$89.22
Total Labor/Equipment	\$112.48	\$98.13	\$129.82	\$104.60
Total Dry/Storage	\$22.01	\$9.56	\$37.81	\$0.00

### Key Operations Average Costs (\$/Acre)

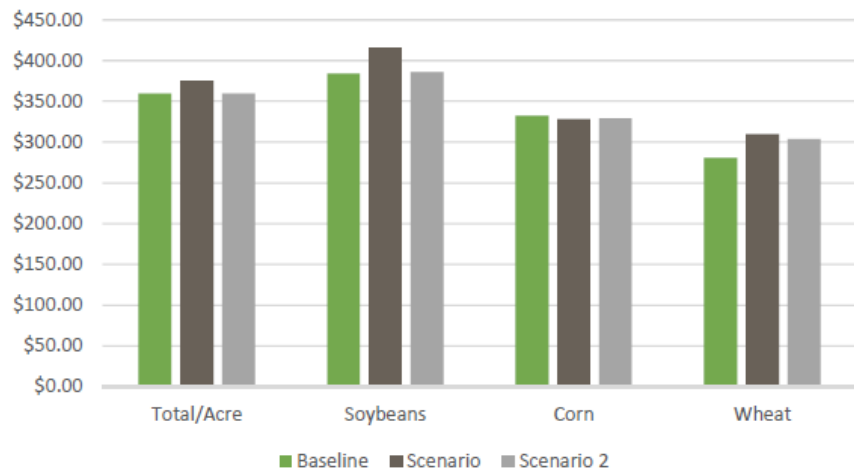
	Average/Acre	Soybeans	Corn	Wheat
Planting	\$14.85	\$16.00	\$12.89	\$31.17
Spraying	\$3.36	\$3.03	\$3.64	\$13.87
Combine or Harvester	\$20.28	\$22.47	\$17.35	\$27.99
All Harvester Elements		\$37.53	\$41.48	\$49.07

### Capacity Measure

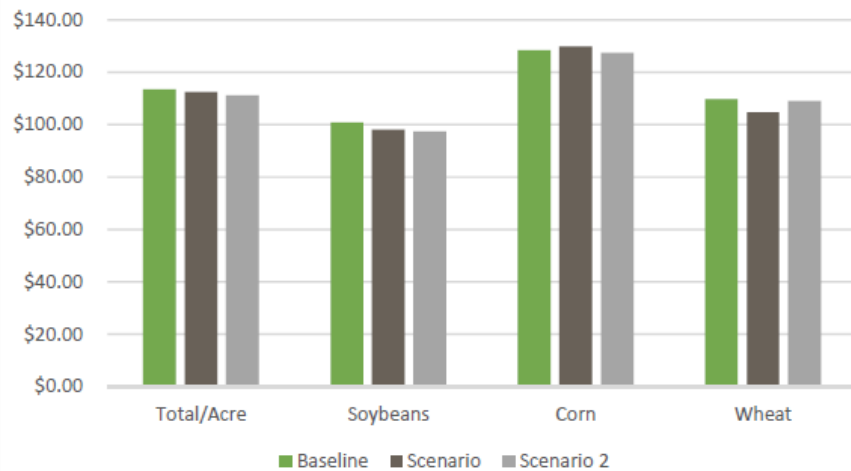
	Total/Acre	Soybeans	Corn	Wheat
Days to Plant		7	14	1
Days to Harvest		30	34	2



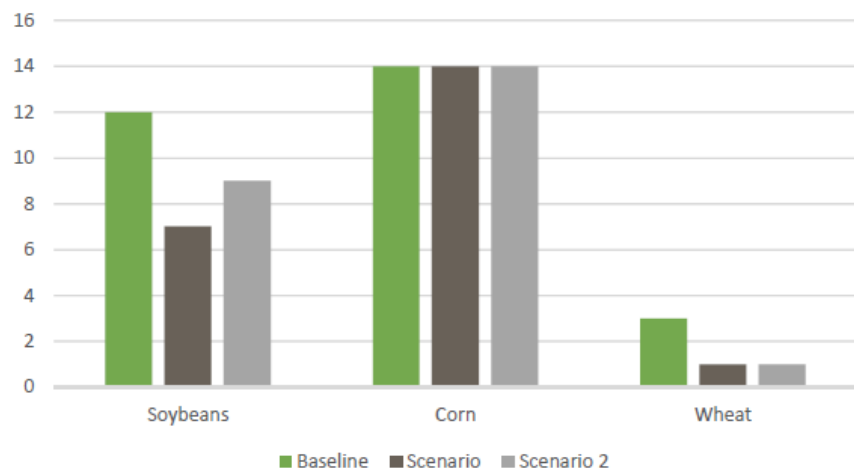
### Contribution Margin/Acre



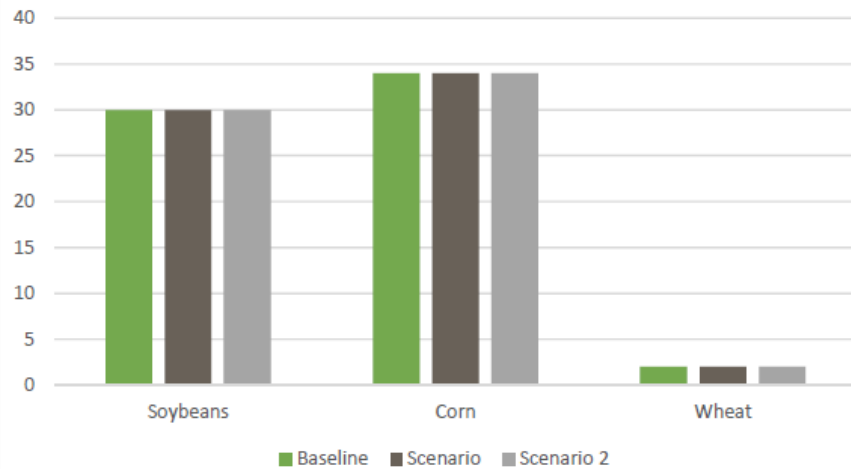
### Equipment and Labor Cost/Acre



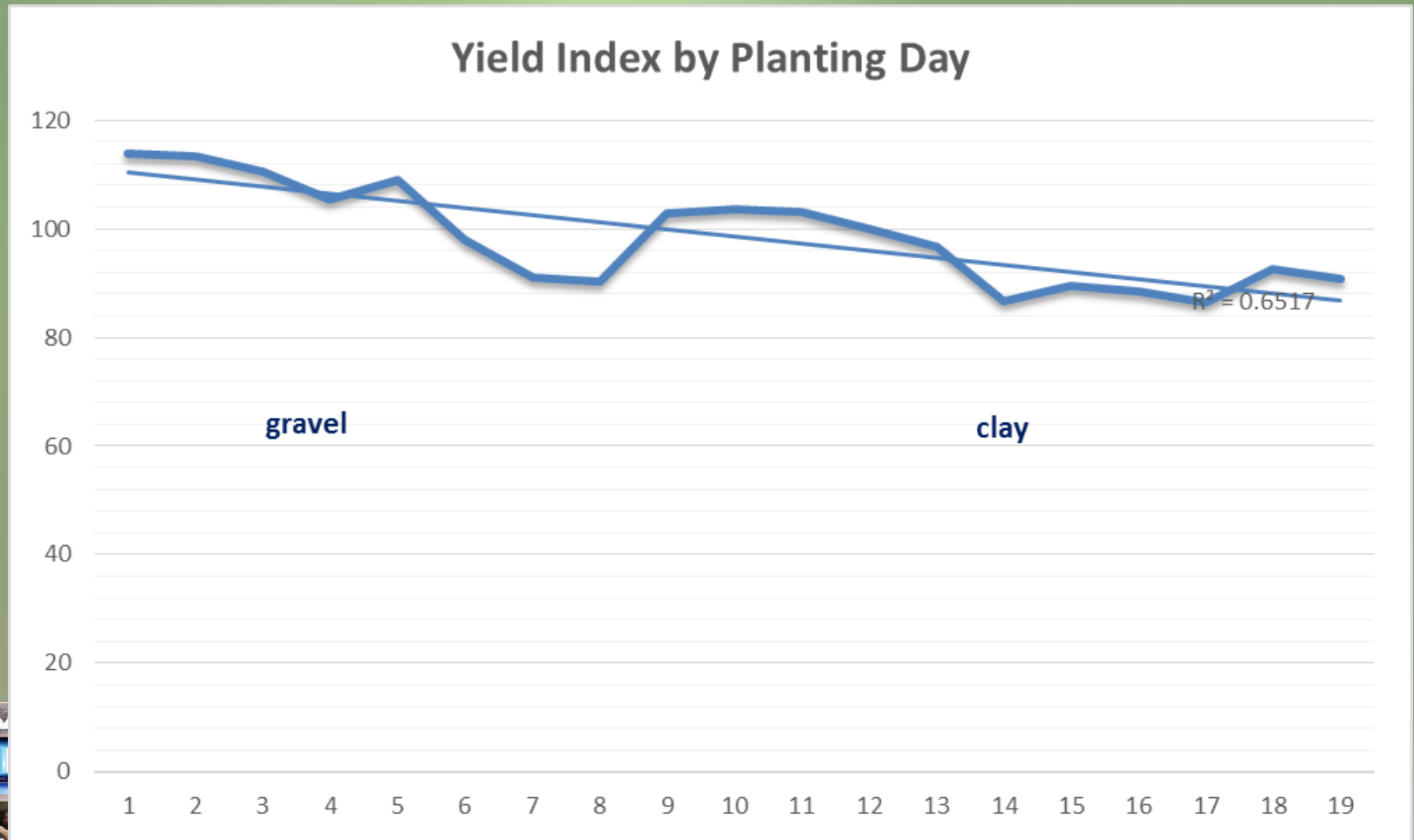
### Days to Plant



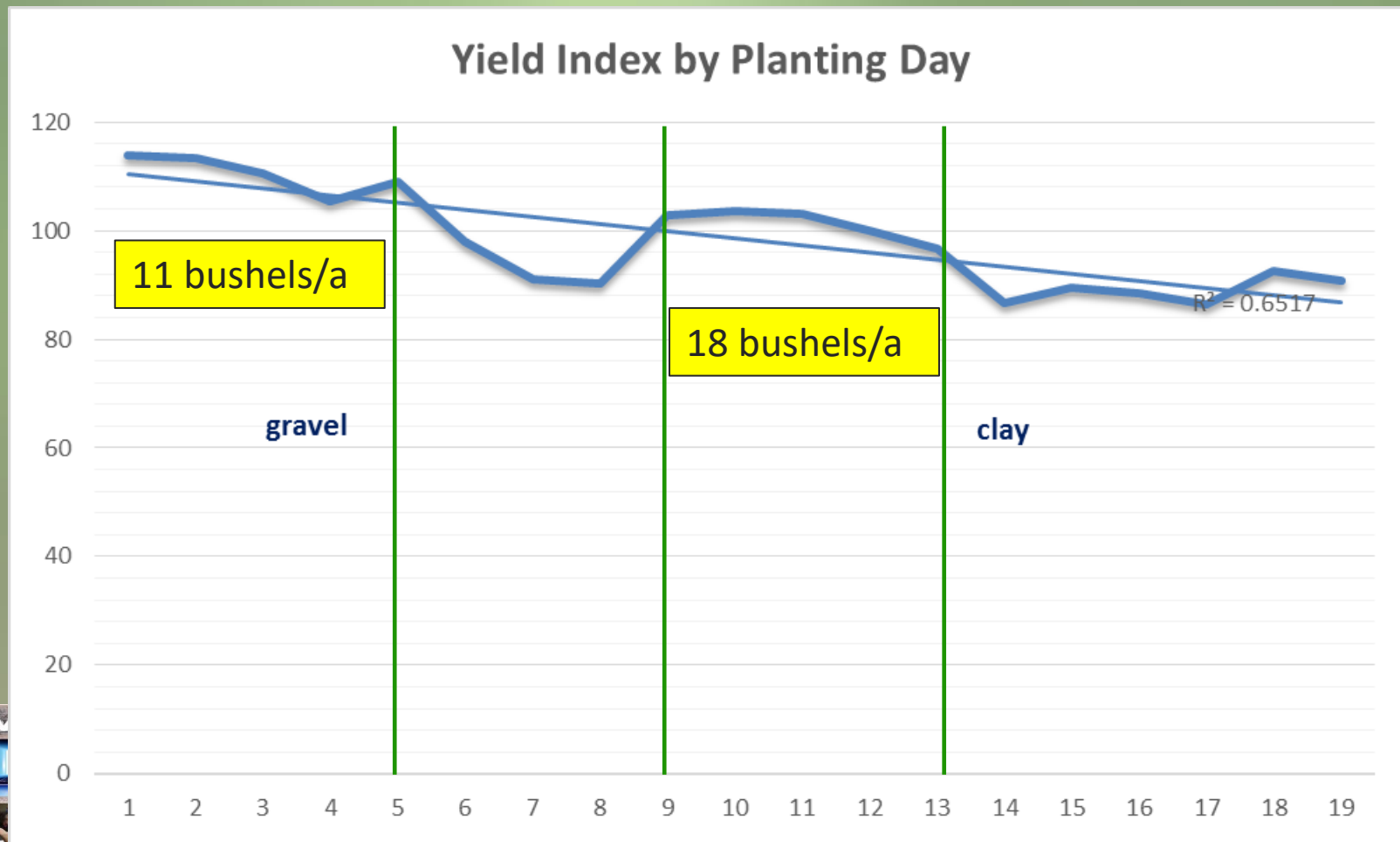
### Days to Harvest



# Corn Yield – First to Last Day

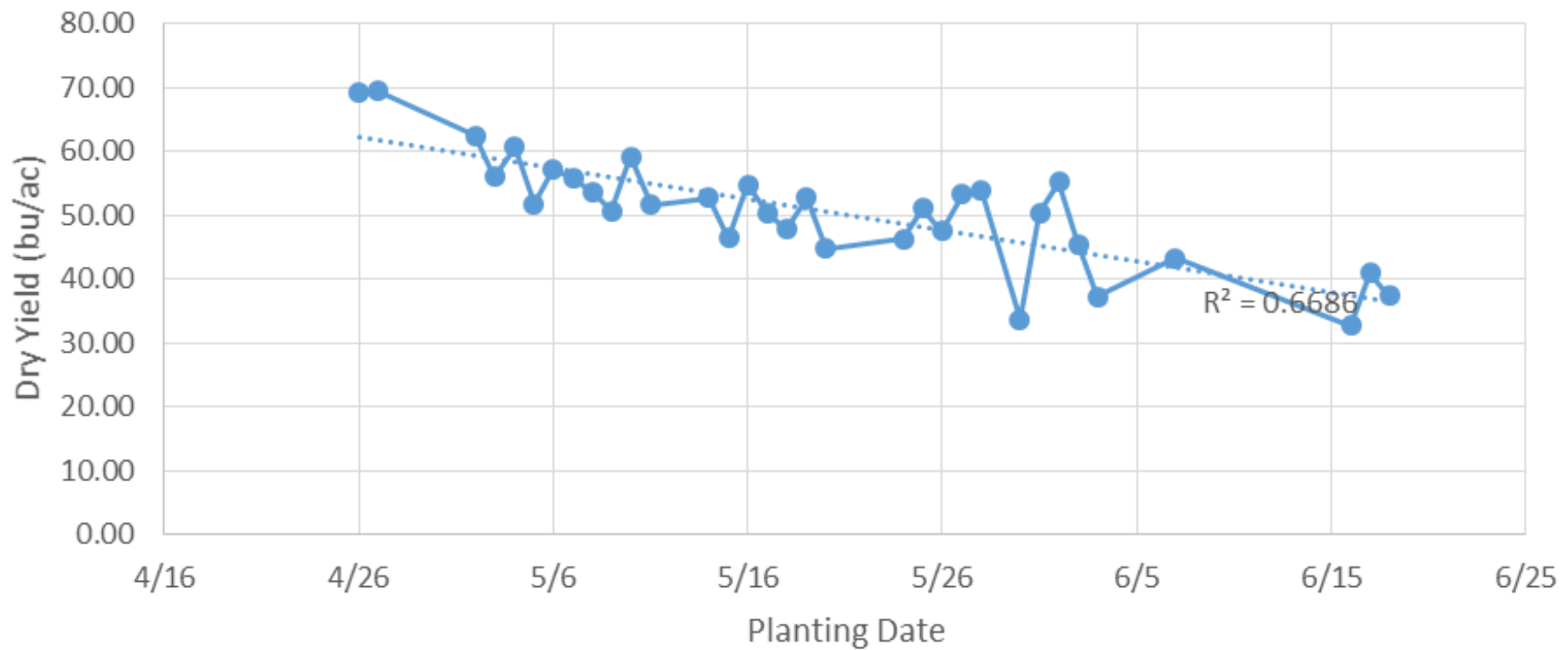


# Corn Yield – First to Last Day



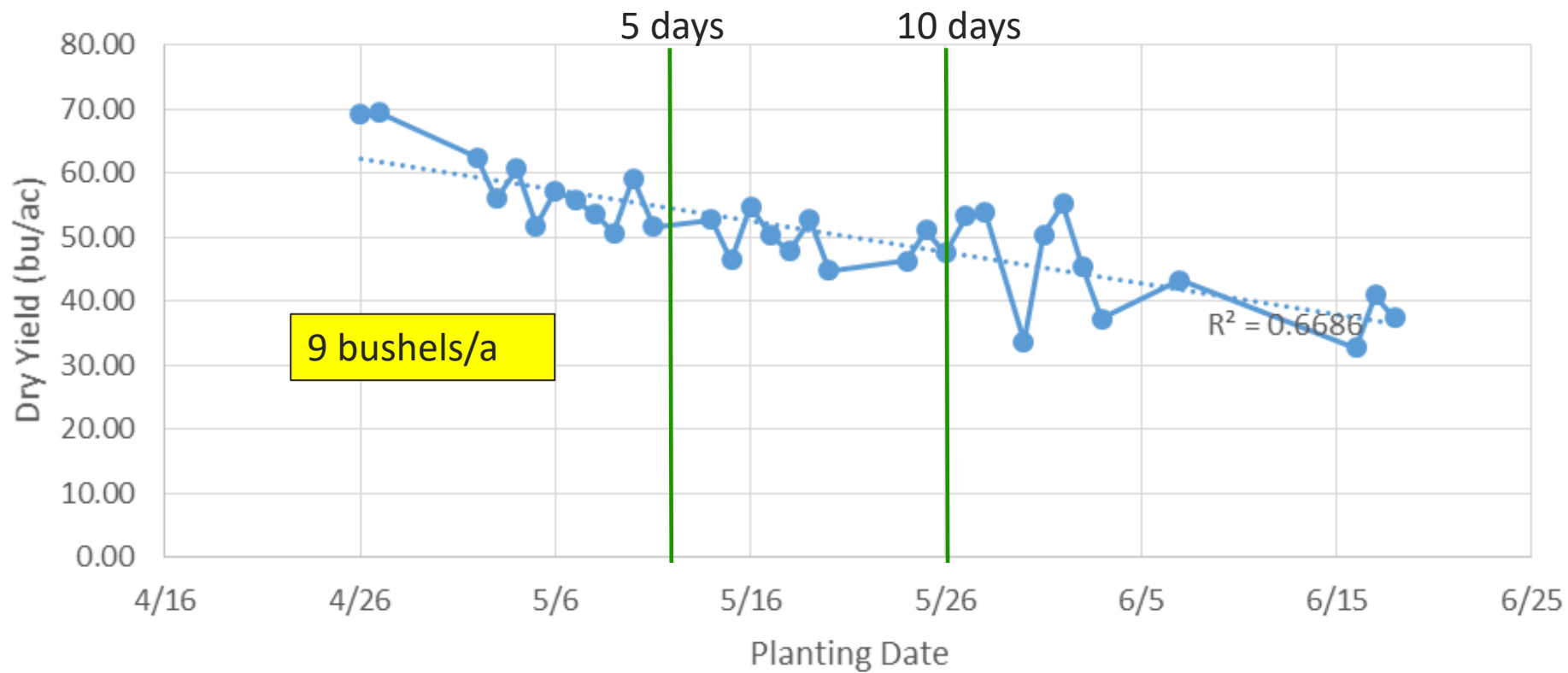


## Soybean Yield by Planting Date



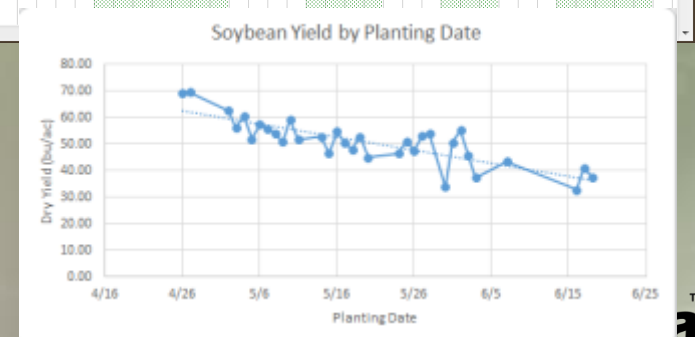
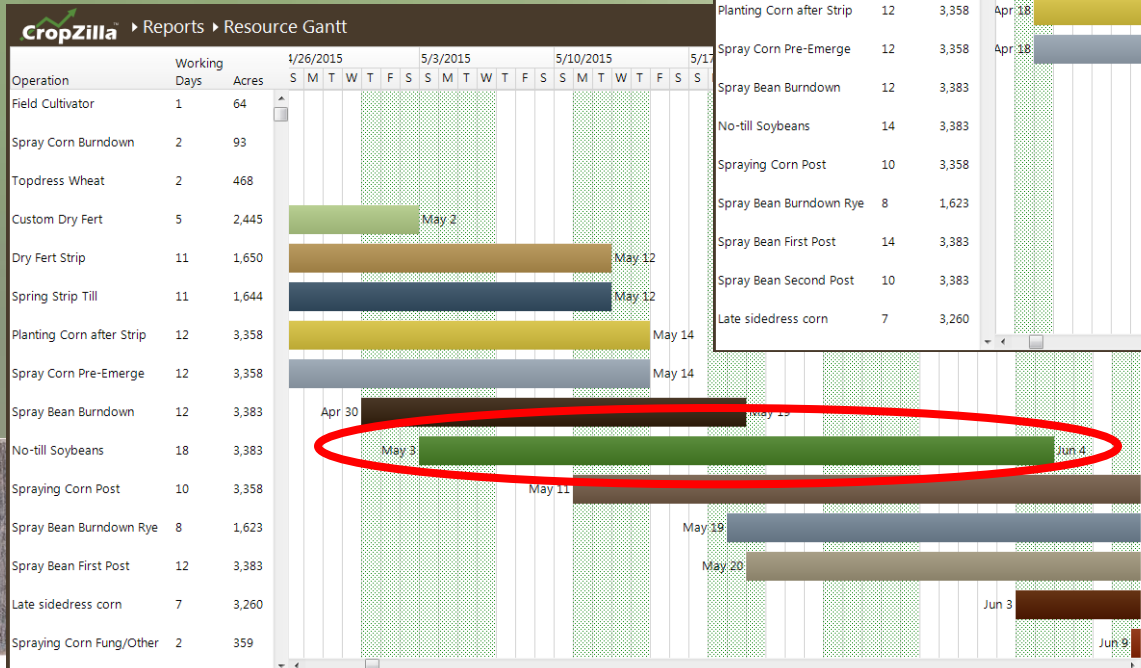
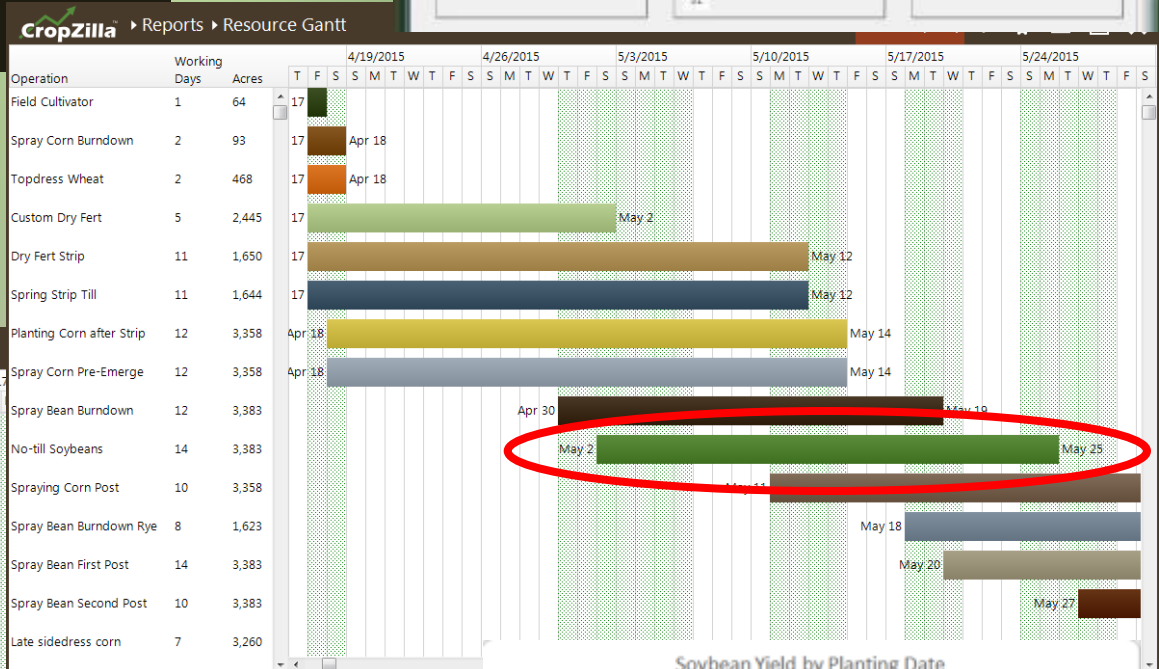


## Soybean Yield by Planting Date



# Scenario: increase planting hours per day

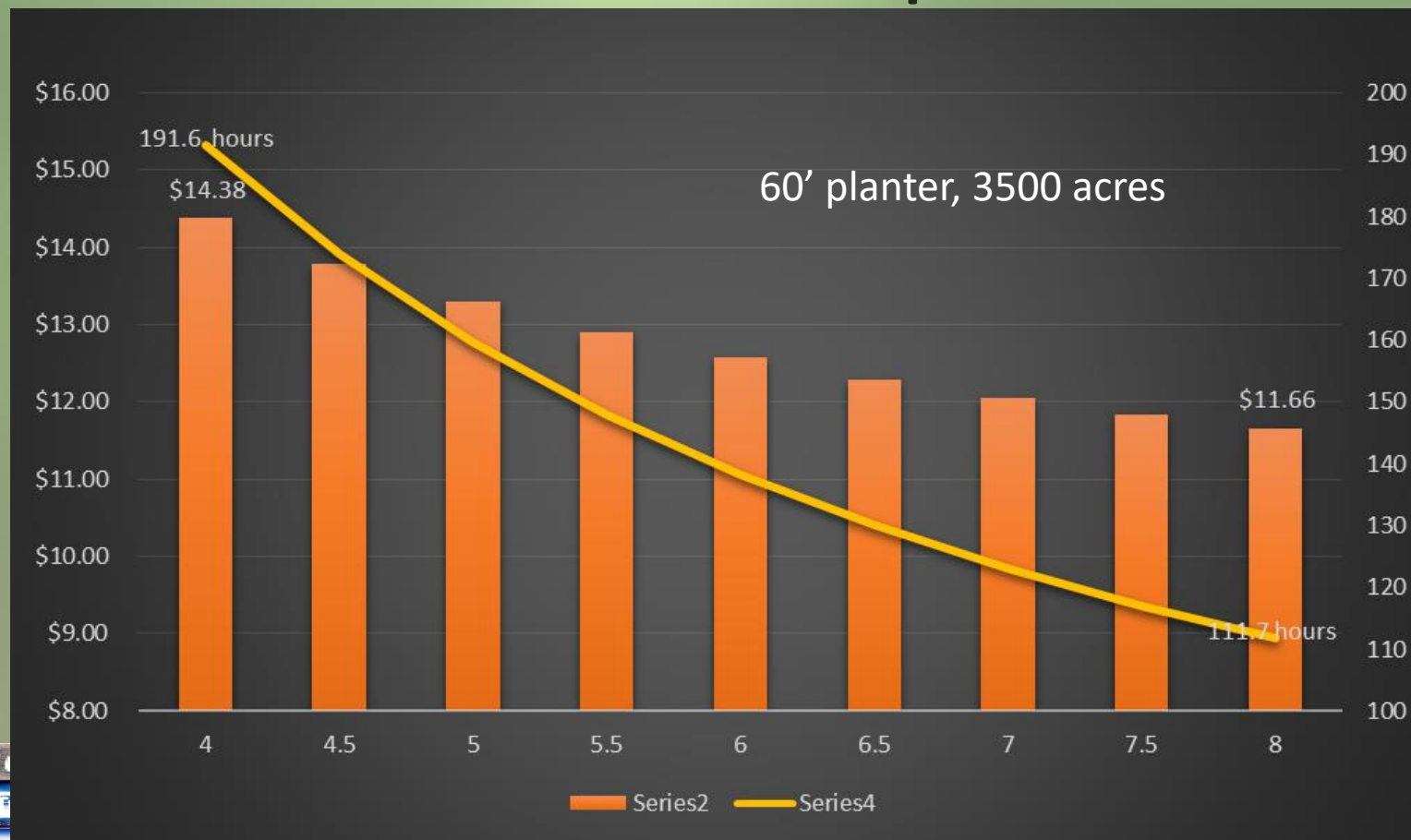
- We input into CZ an analog weather year to project the effect of planting longer hours on planting date
- We look at historical yield by planting date chart
- Applying the planting date difference to this chart shows a 5 bu per acres overall yield increase by increasing planting hours
- On this farm, that is over \$170K increase y/y



Nutrient Placement System	No-Till	NT NPK W/Planter	Strip Till	Conservation Tillage
<ul style="list-style-type: none"> <li>• Total Machinery Inv.</li> <li>• Total Machinery Cost</li> <li>• Total Labor Cost</li> <li>• Peak Spring Labor</li> <li>• Days to Plant Corn</li> <li>• Days to Plant Soybeans</li> </ul>	<ul style="list-style-type: none"> <li>• \$389/acre</li> <li>• \$ 75.24/acre</li> <li>• \$ 13.64/acre</li> <li>• 48.6 hours</li> <li>• 13 days</li> <li>• 10 days</li> </ul>	<ul style="list-style-type: none"> <li>• \$429/acre</li> <li>• \$78.44/acre</li> <li>• \$14.30/acre</li> <li>• 65.6 hours</li> <li>• 9 days</li> <li>• 10 days</li> </ul>	<ul style="list-style-type: none"> <li>• \$415/acre</li> <li>• \$82.89/acre</li> <li>• \$14.99/acre</li> <li>• 69.7 hours</li> <li>• 11 days</li> <li>• 10 days</li> </ul>	<ul style="list-style-type: none"> <li>• \$470/acre</li> <li>• \$109.25/acre</li> <li>• \$ 17.52/acre</li> <li>• 94.3 hours</li> <li>• 10 days</li> <li>• 10 days</li> </ul>

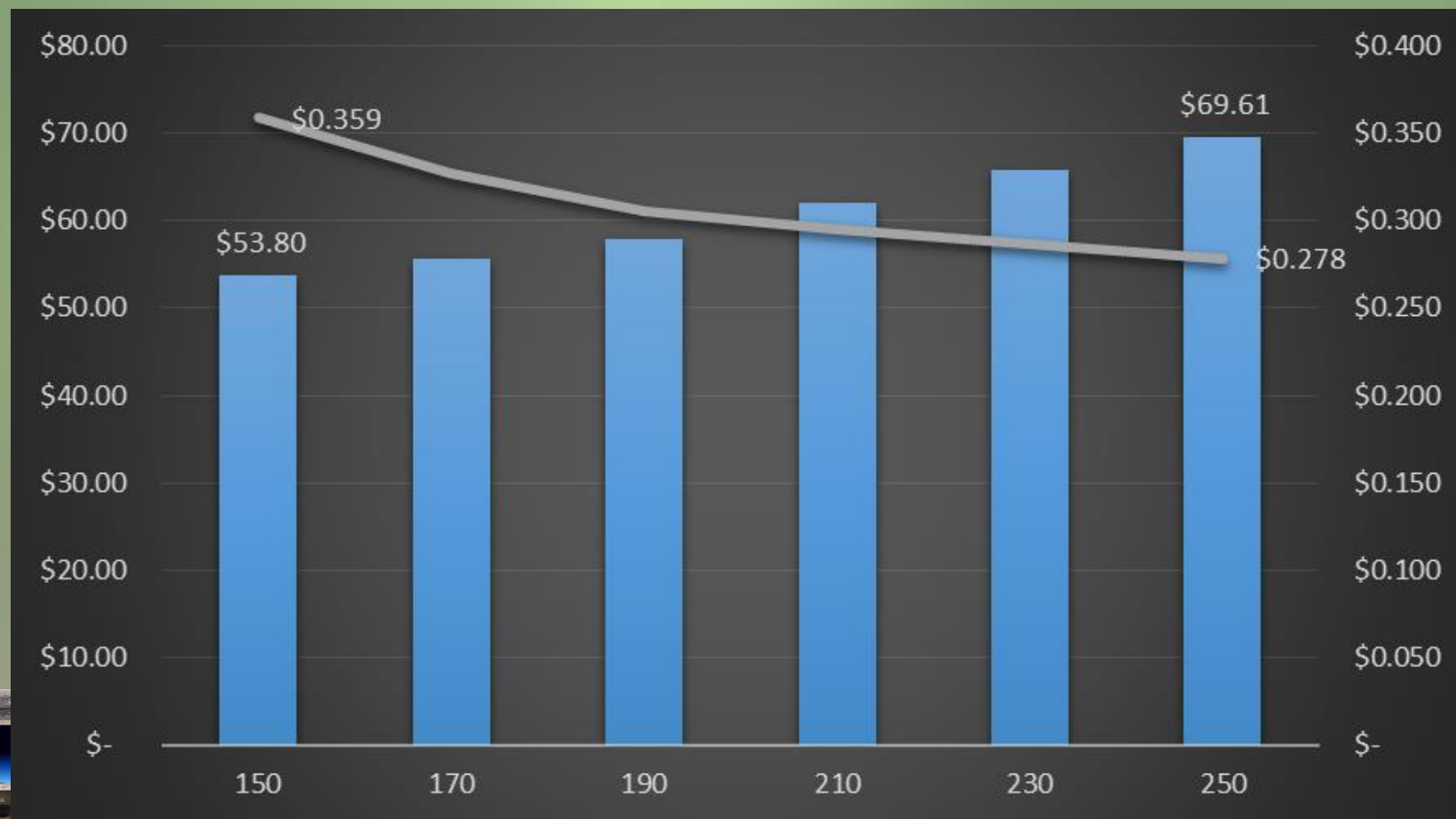


# The Need for Speed

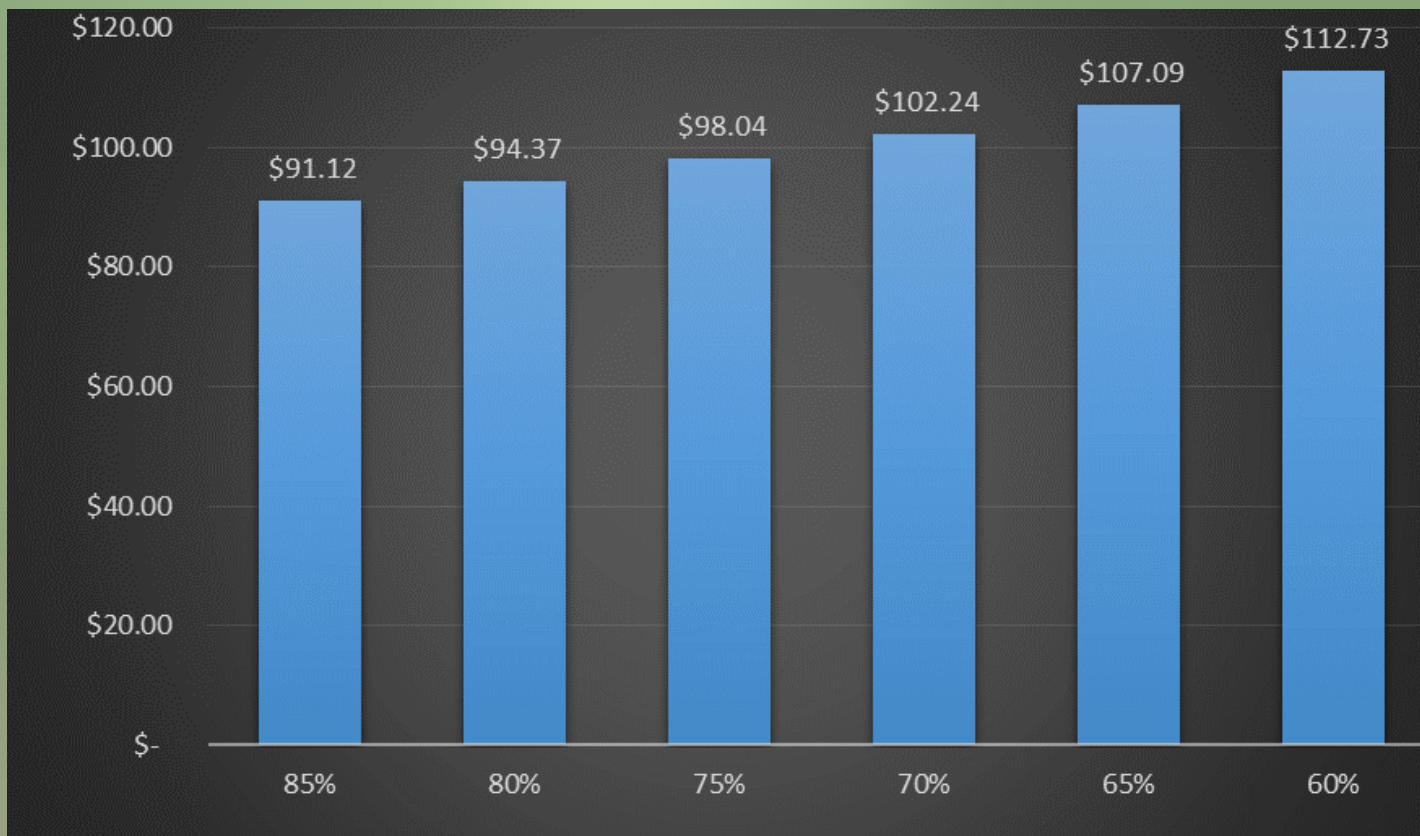




# Harvest Costs by Yield, Acre and Bushel



# Field Efficiency



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# Telematics



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Report Year: 2016 Client: (All Clients) Farms: (All Farms) Fields: Stans Legend

CropZilla Operation Characteristics:

Short Device ID	Operation Name	Power Source	Implement	Average Engine Load (%)	Average Engine Load at 0 mph (%)	Equip/Acre (\$)	Labor/Acre (\$)	Fuel/Acre (\$)	Total/Acre (\$)
7165	Strip Till	JD Tractor	Blu-Jet AT 6010 Strip-Till 24 Row	79.2	-	\$13.10	\$0.68	\$0.98	\$14.77
6545	Spray Pre - corn	JD 4930 Sprayer	JD 4930 Sprayer	40	-	\$2.69	\$0.29	\$0.10	\$3.08
7165	JD Planter - corn	JD Tractor	JD Planter	80	-	\$21.96	\$0.48	\$0.81	\$23.25
6545	Spray Post - corn	JD 4930 Sprayer	JD 4930 Sprayer	40	-	\$2.69	\$0.29	\$0.10	\$3.08
6545	V8 Spray Fert/Fung - corn	JD 4930 Sprayer	JD 4930 Sprayer	40	-	\$2.56	\$0.28	\$0.10	\$2.94
6545	Combine corn	Lexion 750 Combine	Drago Corn Head - 12R	90	-	\$23.50	\$0.00	\$2.14	\$25.64
-	Brent 1282 Grain Cart	JD Tractor	Brent 1282 Grain Cart	75	-	\$22.63	\$0.00	\$2.72	\$25.35
-	Jetco Trailer - 05 D	Volvo 420 Semi - 00	Jetco Trailer - 05 D	0	-	\$0.19	\$0.00	\$0.10	\$0.29
-	Jetco Trailer - 05 K	Volvo 630 Semi - 07	Jetco Trailer - 05 K	0	-	\$0.45	\$0.00	\$0.10	\$0.55

Actual Operation Characteristics:

Short Device ID	Operation Name	Power Source	Implement	Average Engine Load (%)	Average Engine Load at 0 mph (%)	Equip/Acre (\$)	Labor/Acre (\$)	Fuel/Acre (\$)	Total/Acre (\$)
7165	Strip Till	JD Tractor	Blu-Jet AT 6010 Strip-Till 24 Row	63.52	21.53	\$17.03	\$0.92	\$0.51	\$18.47
7166	-	2014 AGCO MT645D	-	54.58	20.15	\$0.00	\$0.00	\$0.00	\$0.00
7165	JD Planter - corn	JD Tractor	JD Planter	59.44	38.93	\$31.20	\$0.81	\$0.55	\$32.55
6545	Spray Pre - corn	JD 4930 Sprayer	JD 4930 Sprayer	51.64	14.15	\$2.63	\$0.28	\$0.12	\$3.03
7166	-	2014 AGCO MT645D	-	36.78	17.72	\$0.00	\$0.00	\$0.00	\$0.00
7166	-	2014 AGCO MT645D	-	35.72	17.11	\$0.00	\$0.00	\$0.00	\$0.00
6545	Spray Post - corn	JD 4930 Sprayer	JD 4930 Sprayer	42.58	16.6	\$2.73	\$0.29	\$0.11	\$3.13
6545	V8 Spray Fert/Fung - corn	JD 4930 Sprayer	JD 4930 Sprayer	38.08	13.62	\$4.84	\$0.52	\$0.14	\$5.51
6545	Combine corn	Lexion 750 Combine	Drago Corn Head - 12R	61.11	16.30	\$27.04	\$2.04	\$1.71	\$30.79

# Actionable Information

## Percentage of Total Operation Time at 0 mph

■ 0 mph  
■ Operation Time

Grain Cart

Harvest Corn

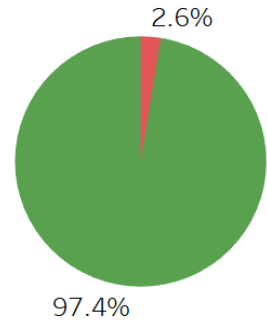
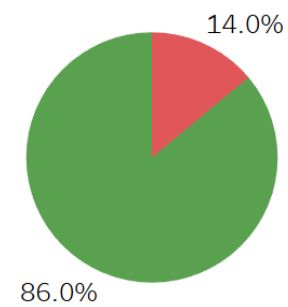
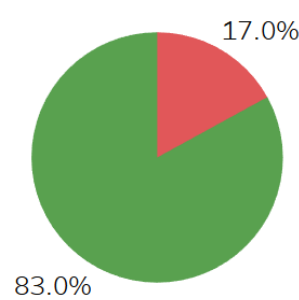
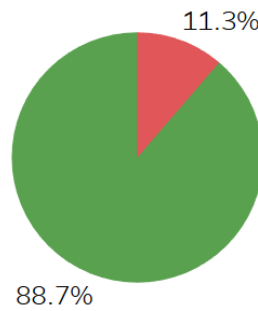
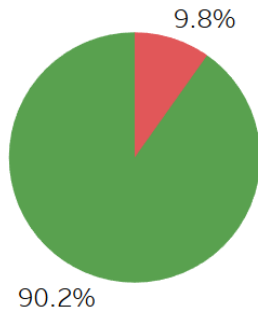
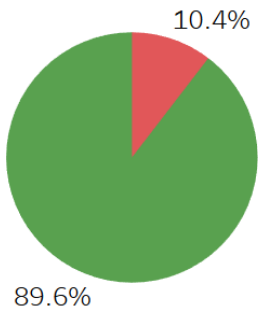
Harvest Soybeans

Plant Corn

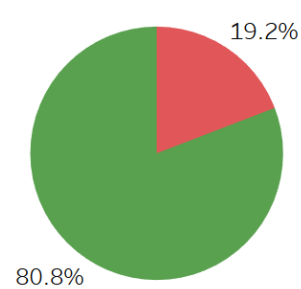
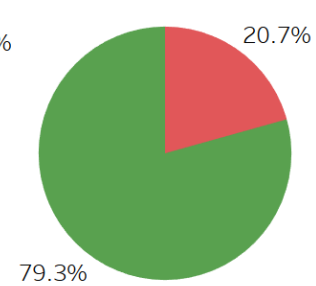
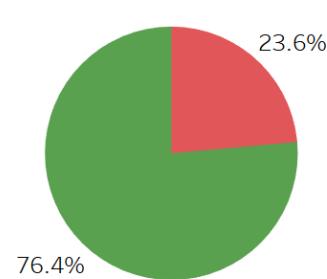
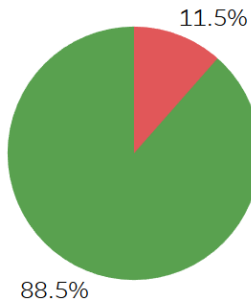
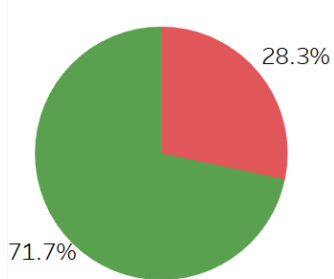
Plant Soybeans

Strip Till

Planned

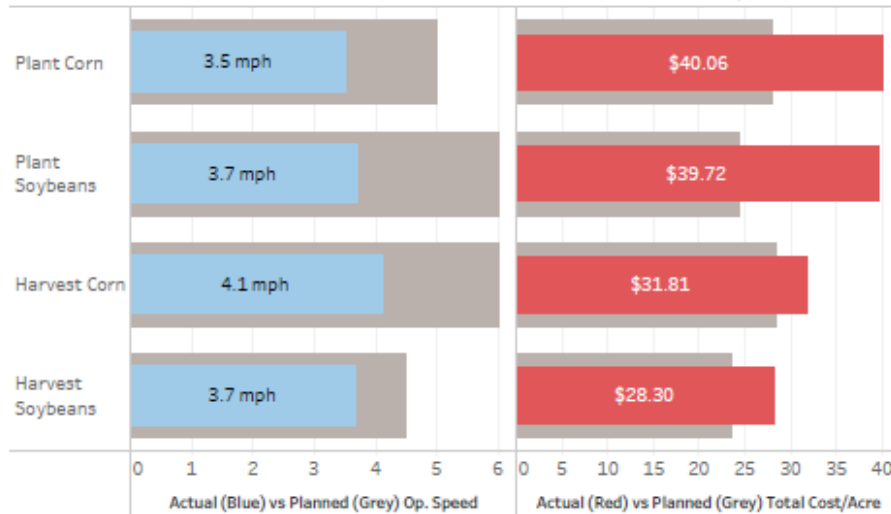


Actual

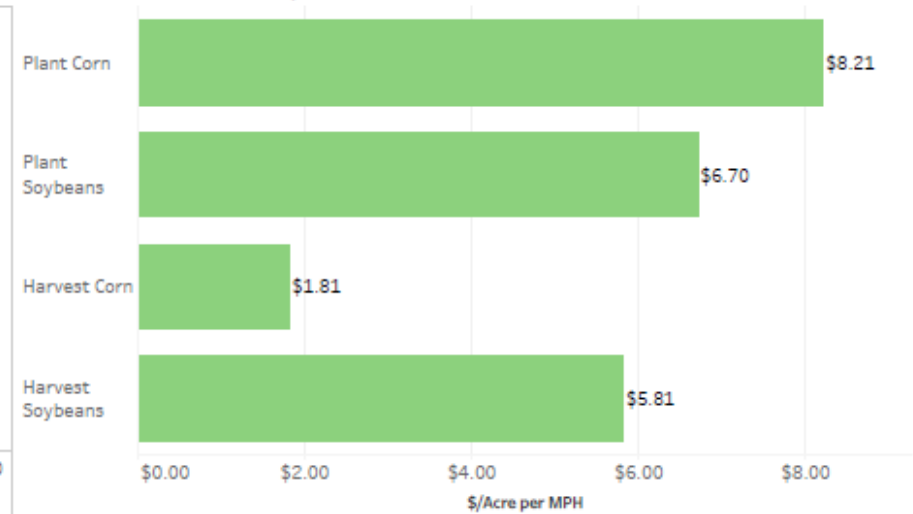


# Actionable Insights

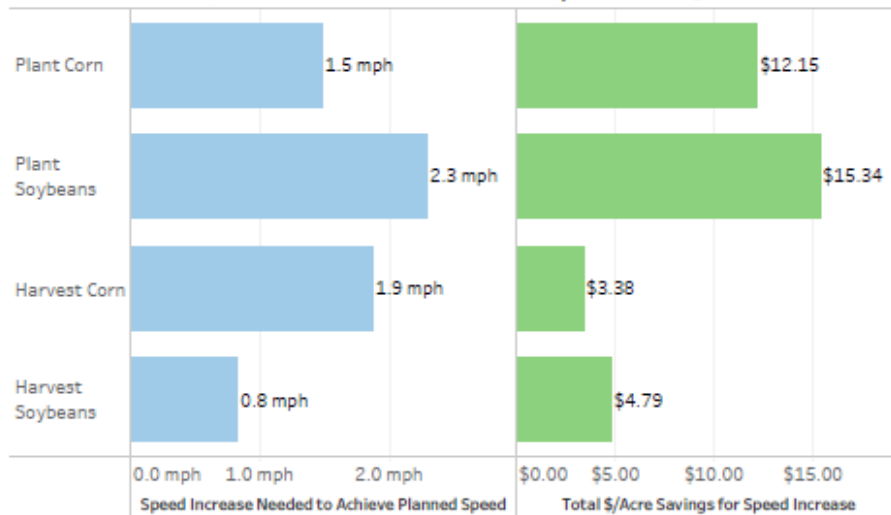
Correlation of Planting and Harvest Speed to Total Cost/Acre



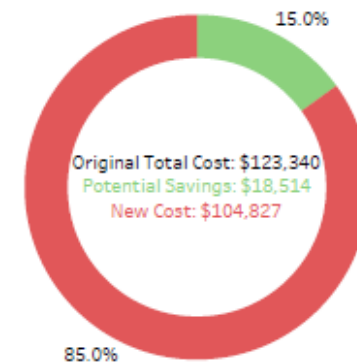
\$/Acre Savings per MPH Increase



Speed Increase and Associated \$/Acre Savings



Potential Total Savings in Planting and Harvest Costs





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