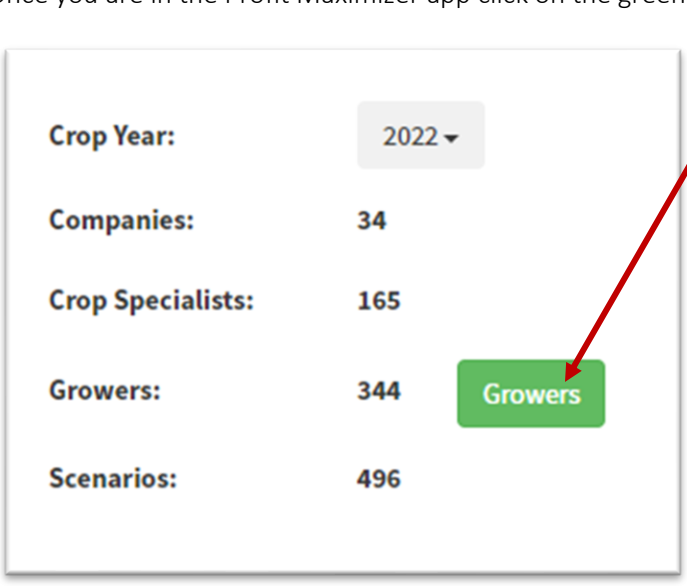
FS Profit Maximizer is a web-based app that analyzes total production costs and revenues through in-depth cost modeling, sensitivity tables and charting to explore and focus on maximizing grower profitability. The Profit Maximizer encourages crop specialist and grower engagement based on the trusted adviser principles and establishing deeper overall relationships.

The FS Profit Maximizer can be found on the **Agronomy Apps website**:
https://agronomyapps.growmark.com/

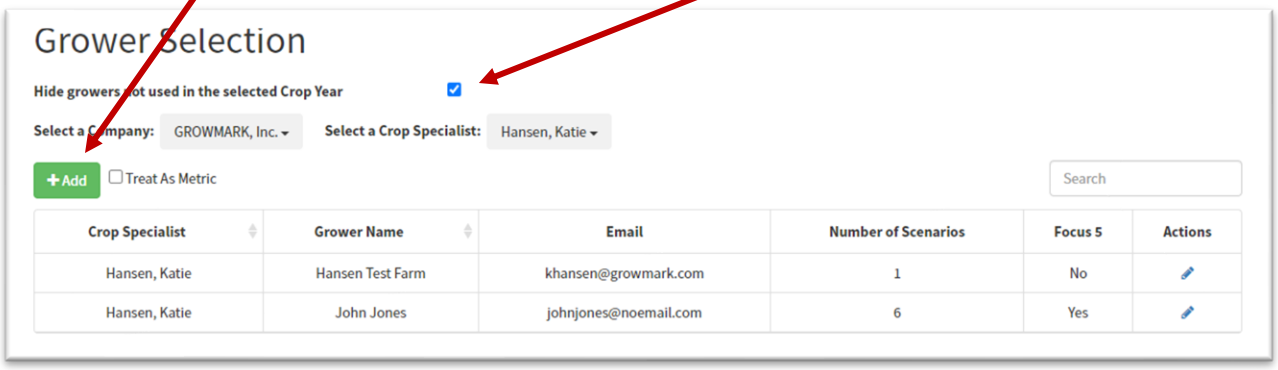
You can begin utilizing the Profit Maximizer tool by first logging in and then clicking on the **FS Profit Maximizer icon**

Once you are in the Profit Maximizer app click on the green Growers button.

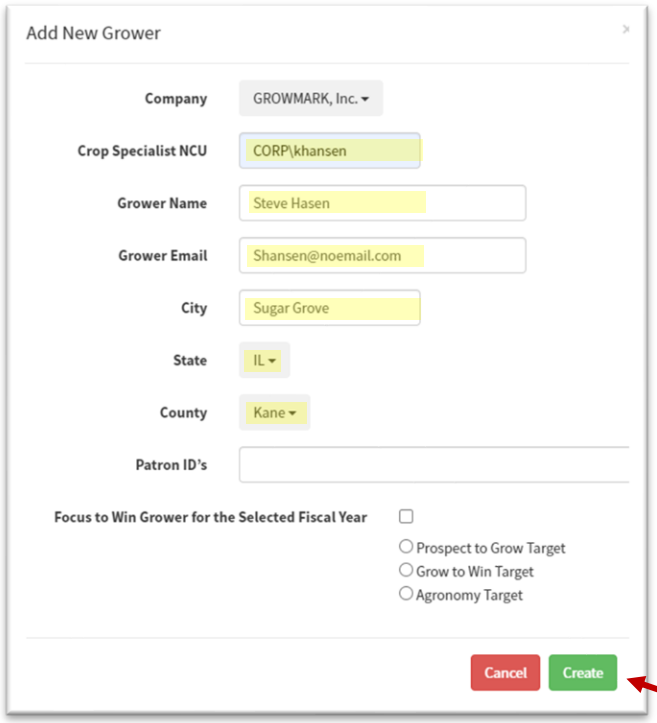


Here you will see a list of growers that you have an activity set up for in the current crop year across the different agronomy apps: MiField Trial Central, Focus to Win, AgValidity, or Profit Maximizer. If you have not yet made any activities for the grower you wish to run a Profit Maximizer for, unselect the **Hide growers not used in the selected Crop Year** button.

If your grower's name still does not appear and you need to add a new grower, you will click on the green +Add button.

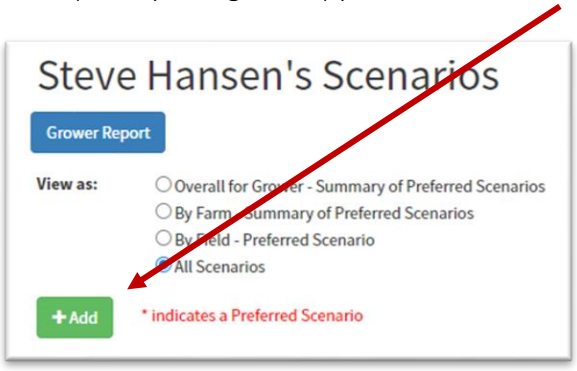


By clicking on the +Add button, an Add New Grower box will pop-up, where you will enter detailed information about that grower. Entering the grower email (versus your own) allows you to send them scenarios with the click of a button (as you will see later in the overview). As you can see below, you can also flag this grower as a Focus to Win Grower for the selected Fiscal Year. Any changes in the Profit Maximizer app to the grower information, will be reflected in the other Agronomy Apps.

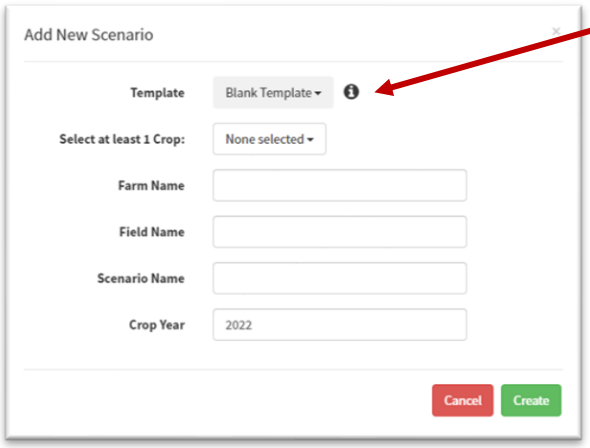


Once you have entered the grower information be sure to click on the Create button.

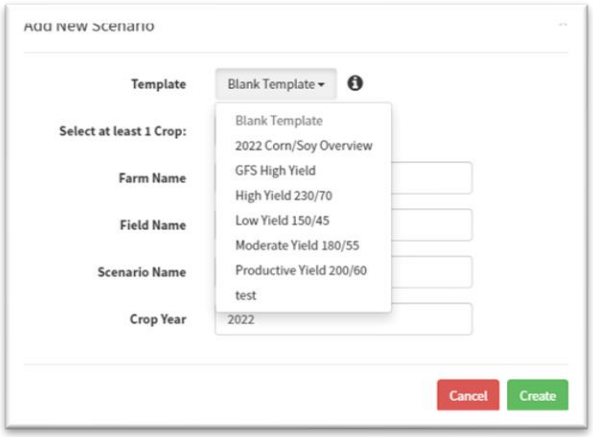
Once you click on the grower box (for those growers already entered in Profit Maximizer) or click on Create (for any new growers) you will see an "**Add New Scenario**" box.



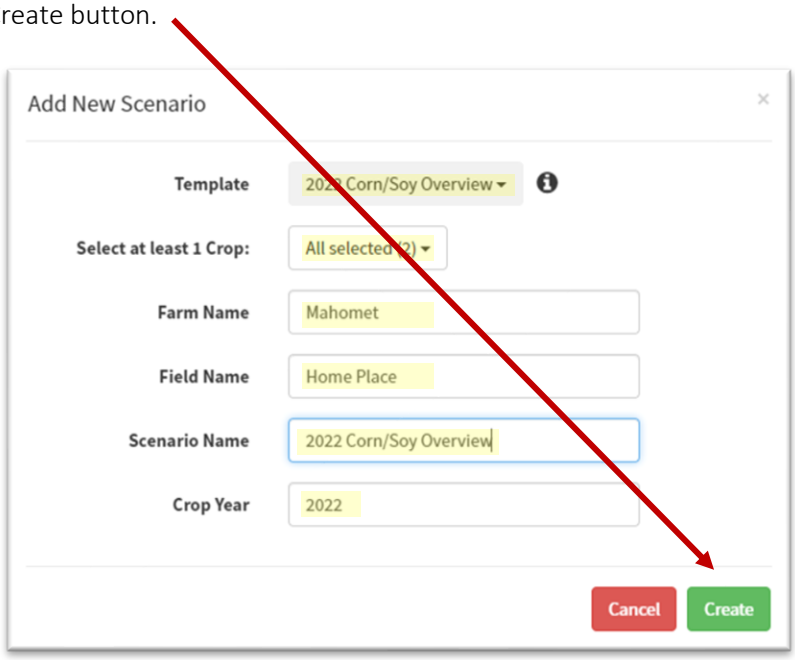
After clicking that, the first thing you will want to do is select a template.



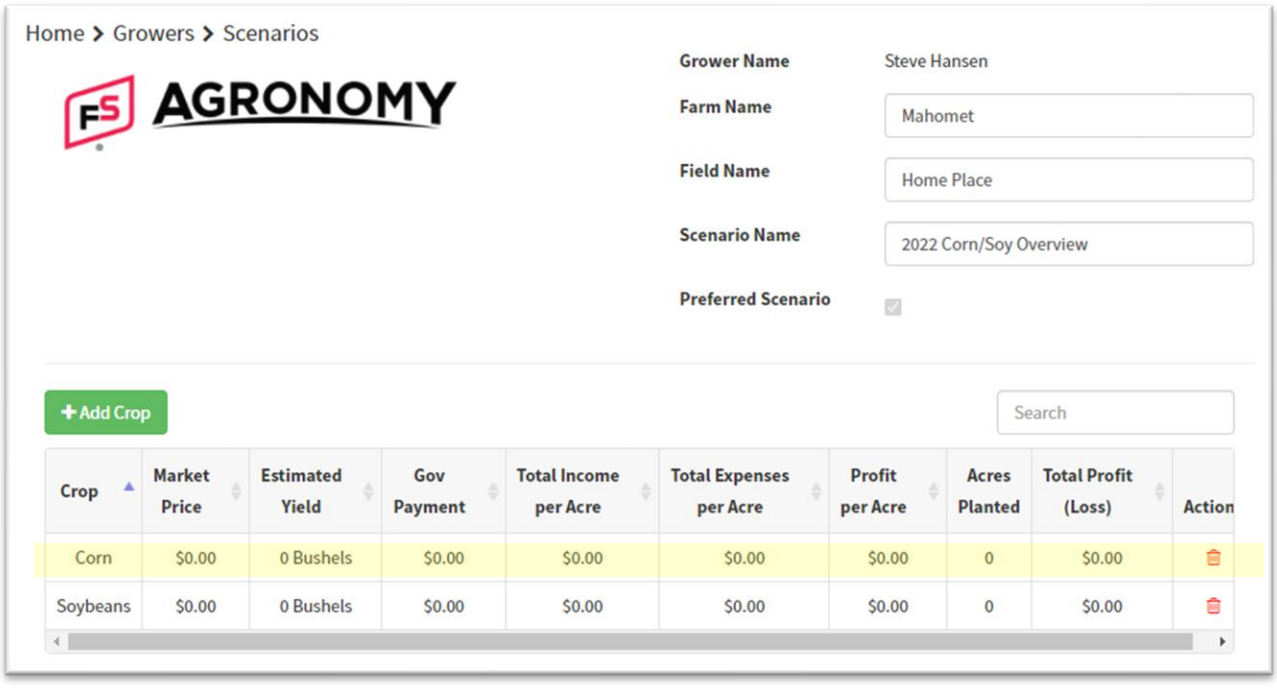
The **Blank Template** option offers you the ability to create a completely new scenario (starting from scratch). Or you may choose one of the prepopulated scenarios which contain prepopulated expense information which can be edited to match your grower's specific circumstances. The prepopulated template titles offer you an idea of what they are based on.



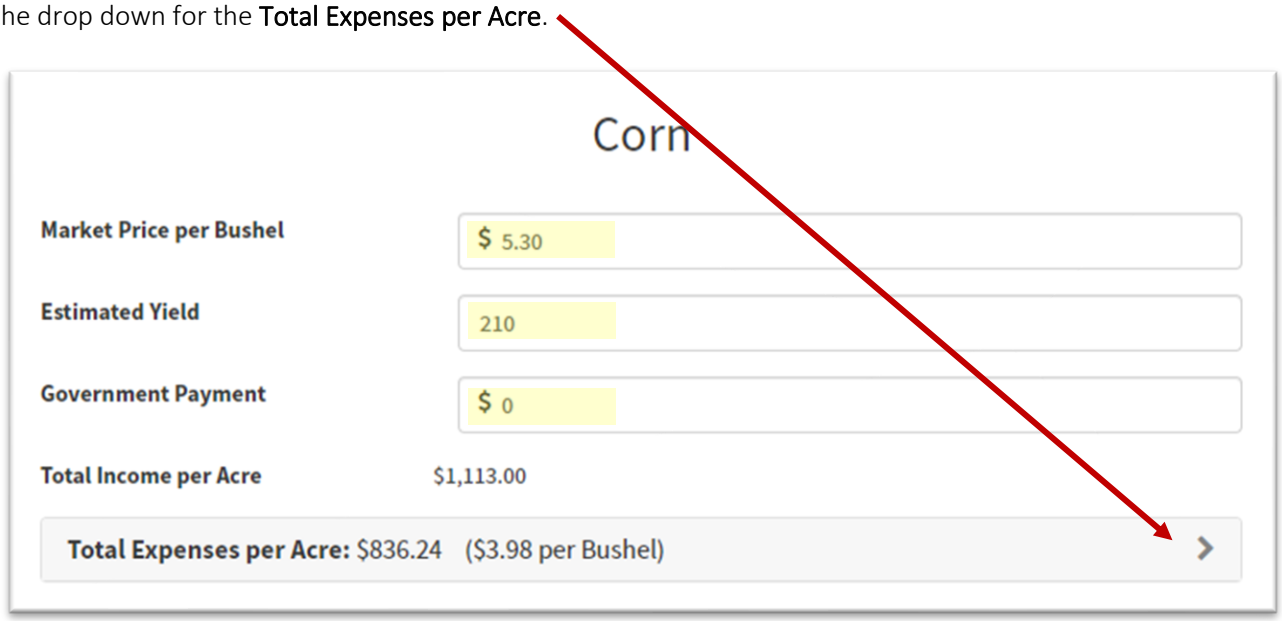
Once you have selected a template, you will complete the other requested information and click on the Create button.



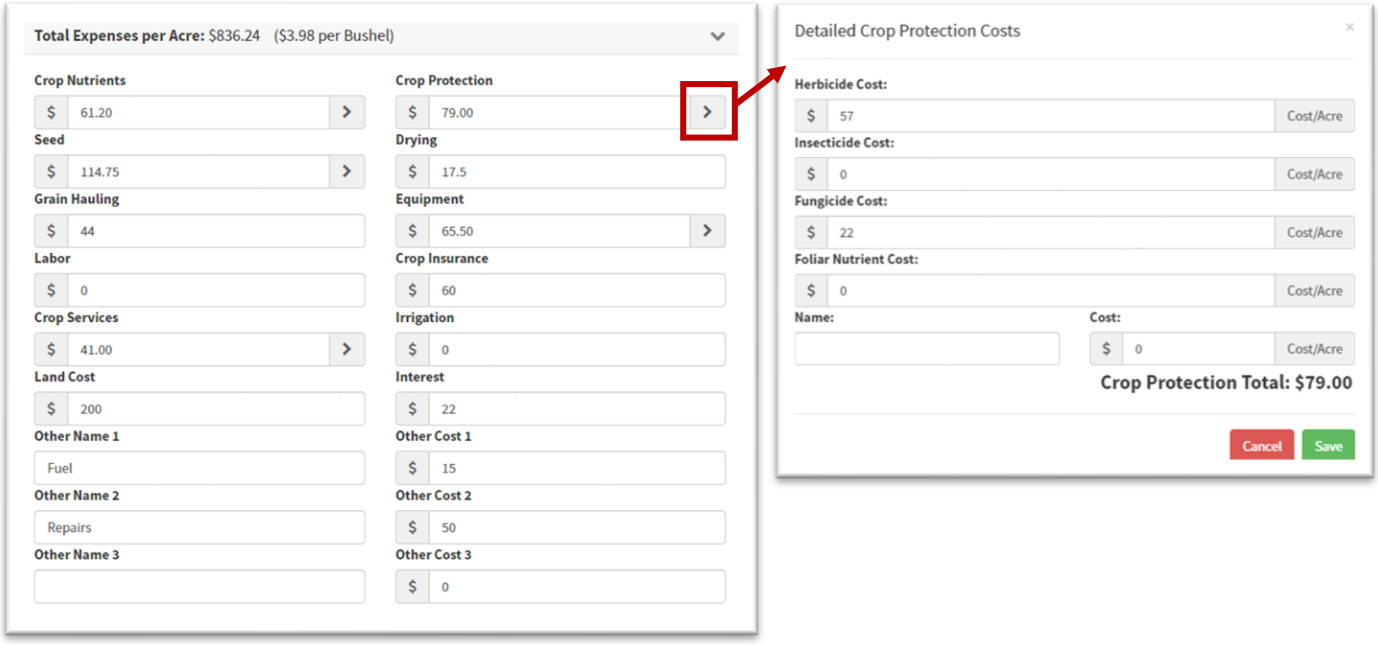
Once you have completed the "Add New Scenario" page and clicked on Create you will be directed to the main page where you can complete the remainder of your Profit Maximizer scenario. Here you will begin by clicking anywhere on the first crop line to enter specific scenario information (highlighted below).



Start by entering market price information, estimated yield and any anticipated or known government payments. This information is used to create the **Total Income per Acre** for corn +/or soybeans. Then hit the drop down for the **Total Expenses per Acre**.



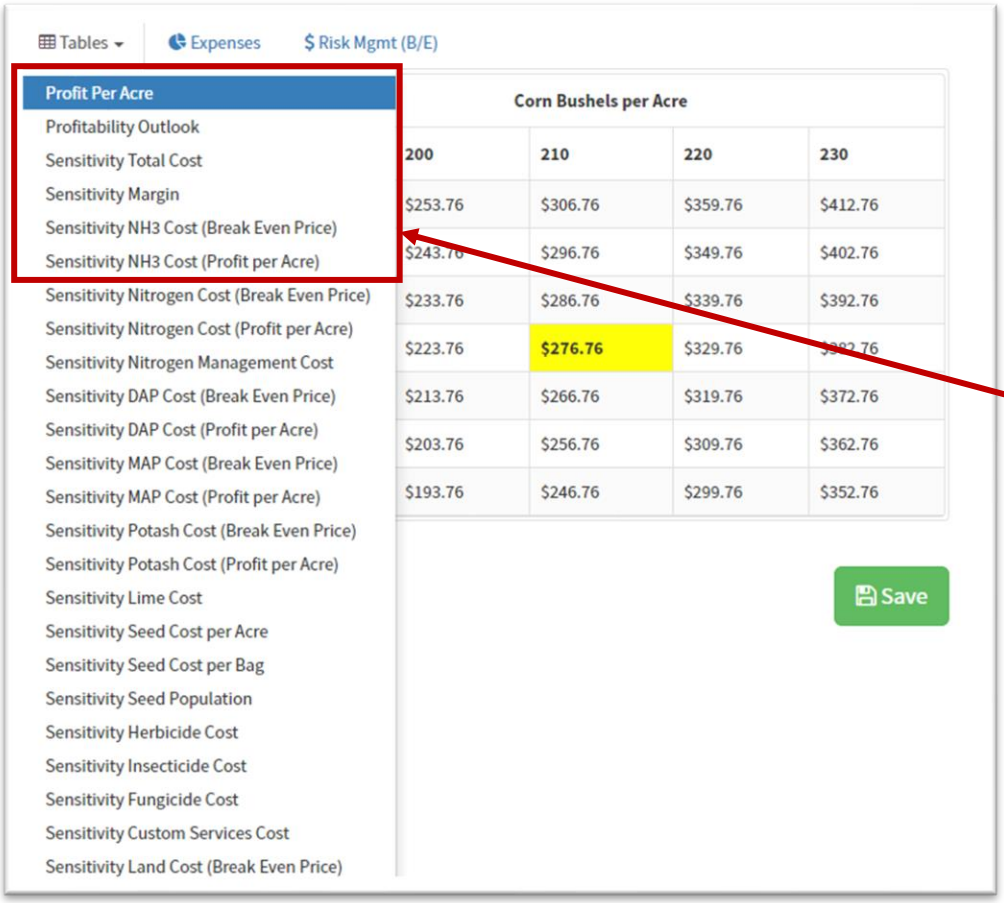
If you choose the Blank Template, the **Total Expenses per Acre** section will read $0.00. If you selected one of the prepopulated templates, the **Total Expenses per Acre** section will include whatever expenses are prepopulated in that scenario. Edit each expense to reflect your grower's scenario. Any box on the worksheet that contains a drop-down arrow can be further expanded to display various options in that specific expense category (examples below right).



You have now entered in the requested Income Information as well as the Expenses Information. You can also include **Acres Planted** to get a quick view of the total profit based on the information that was input.

Profit Maximizer now offers you a quick look at the summary of this information with a **Profit per Acre** figure, **Total Profit** figure, and a **Risk Management (B/E)** indicator which highlights the bushels required to cover the total per acre expenses.

Next, you will want to explore the Tables and Charts that are available in Profit Maximizer. By clicking on the **Tables, Expenses or $ Risk Mgmt (B/E)** tabs you will find 20+ sensitivity charts, an expense overview chart and Risk Management details to utilize with growers. While you most likely won't use all of these in your conversations with a grower, a few of the key charts that offer powerful insight and allow you to have a deeper more meaningful conversation with your growers are highlighted below.



These charts and explanations on the information and insight they provide are addressed below.

Profit Per Acre

This chart addresses overall profit per acre based on Total Expense and Bushels produced. Looking at the scenario below, the target bushels/acre is 175 with a targeted selling price of $5.30 for a total income potential of $927.50. The expenses listed are $860.25 for a positive net income per acre of $67.25/acre. In the chart, the figure highlighted in yellow represents that net income figure $67.25. The chart then allows you to look at varying Total Expenses and Bushels per Acre yields to better understand how net income is affected by changing expenses and yield. For example, increasing yield by 10 bushel per acre (to 185) and decreasing expenses by $10 per acre ($850.25) causes income per acre to go from $67.25 to $130.25. This process can assist the grower in better understanding the effect of yield and expense on his/her profit.

Tables ▾ | Expenses | $ Risk Mgmt (B/E)

Total Expenses per Acre	Corn Bushels per Acre				
	155	165	175	185	195
$830.25	($8.75)	$44.25	$97.25	$150.25	$203.25
$840.25	($18.75)	$34.25	$87.25	$140.25	$193.25
$850.25	($28.75)	$24.25	$77.25	$130.25	$183.25
$860.25	($38.75)	$14.25	**$67.25**	$120.25	$173.25
$870.25	($48.75)	$4.25	$57.25	$110.25	$163.25
$880.25	($58.75)	($5.75)	$47.25	$100.25	$153.25
$890.25	($68.75)	($15.75)	$37.25	$90.25	$143.25

Profitability Outlook

This chart (on the next page) looks at the same information as the previous chart but in a different manner. Here, bushels per acre are paired with futures crop price to highlight overall net income per acre. You will notice that $67.25 is still the profit target based on 175 bushel corn at the expense levels established. However, in this example the sliding scale is based on price per bushel and yield per acre instead of expense per acre. You can see the impact that a $0.25 per bushel change (either positive or negative) has on the overall profit per acre scenarios. This chart can assist a grower in establishing a marketing plan based on anticipated yield and/or expense.

Tables ▾ | Expenses | $ Risk Mgmt (B/E)

Futures Price	Corn Bushels per Acre				
	155	165	175	185	195
$4.55	($155.00)	($109.50)	($64.00)	($18.50)	$27.00
$4.80	($116.25)	($68.25)	($20.25)	$27.75	$75.75
$5.05	($77.50)	($27.00)	$23.50	$74.00	$124.50
$5.30	($38.75)	$14.25	$67.25	$120.25	$173.25
$5.55	$0.00	$55.50	$111.00	$166.50	$222.00
$5.80	$38.75	$96.75	$154.75	$212.75	$270.75
$6.05	$77.50	$138.00	$198.50	$259.00	$319.50

Sensitivity to Total Cost

This chart uses the same information as the previous 2 charts but displays it in a different way by focusing on Total Cost per acre and average selling price per bushel for the crop. In this example you can help a grower to identify their **breakeven price ($4.92)** and to see how variance in yield, expense and/or price impacts their profit potential. Once again, this chart can help a grower to better understand their marketing strategy based on overall expenses and/or yield.

Tables ▾ | Expenses | $ Risk Mgmt (B/E)

Total Cost per Acre	Corn Bushels per Acre				
	155	165	175	185	195
$710.25	$4.58	$4.30	$4.06	$3.84	$3.64
$760.25	$4.90	$4.61	$4.34	$4.11	$3.90
$810.25	$5.23	$4.91	$4.63	$4.38	$4.16
$860.25	$5.55	$5.21	$4.92	$4.65	$4.41
$910.25	$5.87	$5.52	$5.20	$4.92	$4.67
$960.25	$6.20	$5.82	$5.49	$5.19	$4.92
$1,010.25	$6.52	$6.12	$5.77	$5.46	$5.18

Sensitivity to Margin

This chart focuses on a grower's margin per acre goal and the required selling price per bushel to attain that goal. The chart again demonstrates that based on current yield projections and expense structure that $4.92 is the breakeven price per bushel (175 bushel x $4.92 = $861.00) based on expenses of $860.25. In this example, if a grower has a target margin per acre of $75.00 they can see that their target price is $5.34. They can also attain that same goal by working to increase their yield to 185 and selling their crop at $5.06. This is a great opportunity for a crop specialist to discuss ways that a grower might increase their overall yield (fungicide, foliar nutrition, biological products, etc.) and experience a higher margin per acre.

Tables ▾ | Expenses | $ Risk Mgmt (B/E)

Margin per Acre	Corn Bushels per Acre				
	155	165	175	185	195
$0.00	$5.55	$5.21	$4.92	$4.65	$4.41
$25.00	$5.71	$5.37	$5.06	$4.79	$4.54
$50.00	$5.87	$5.52	$5.20	$4.92	$4.67
$75.00	$6.03	$5.67	$5.34	$5.06	$4.80
$100.00	$6.20	$5.82	$5.49	$5.19	$4.92
$125.00	$6.36	$5.97	$5.63	$5.33	$5.05
$150.00	$6.52	$6.12	$5.77	$5.46	$5.18

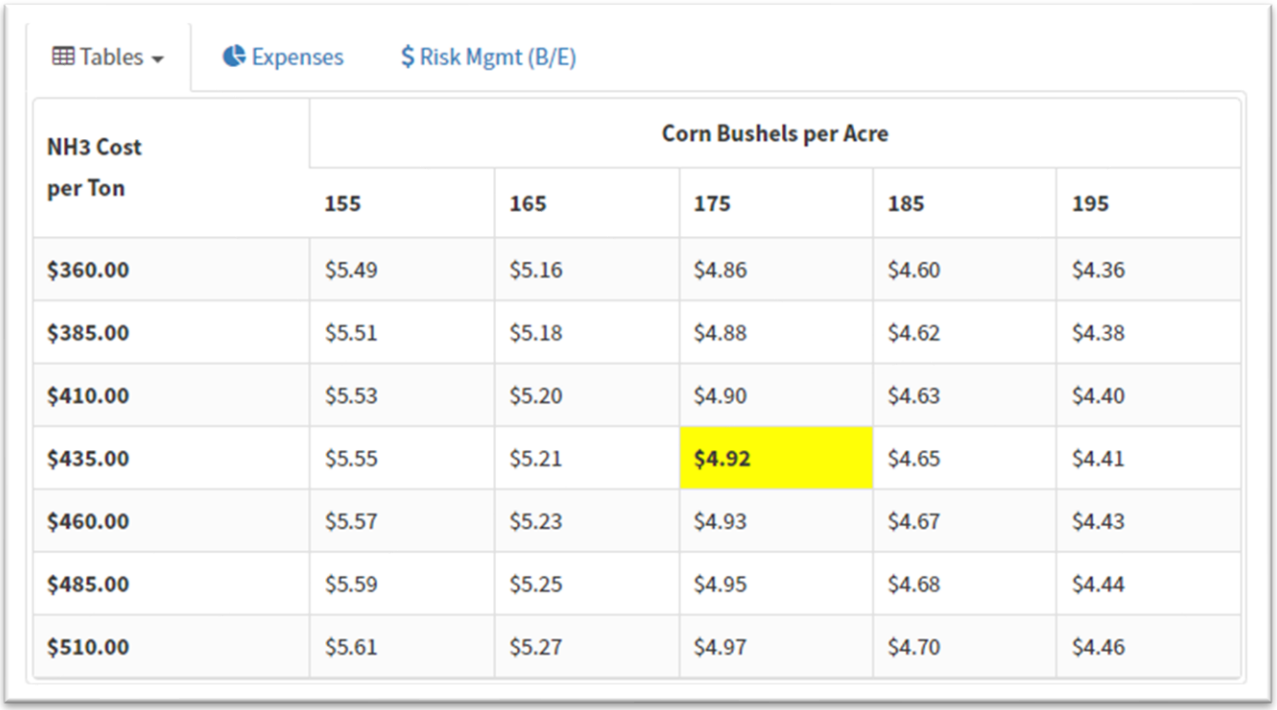
Sensitivity NH3 Cost (Break Even Price)

This next chart is a bit different and focuses on the sensitivity of a single product (in this case NH3). This chart offers a crop specialist a couple different ways to engage the grower in a conversation that goes beyond a product price and instead focuses on a strategy for increasing yield and the effect that it has on the overall $$ per bushel selling price.

These charts that focus on a single product look at the bushels necessary and the corresponding market price to indicate a breakeven scenario for that product. In the case of this scenario, the total overall expenses are $860.25 per acre. The total cost of NH3 is $77.21, which equates to .089 of the total expense ($860.25 x .089 = $76.56). The program then looks at the bushels required to cover the cost of the NH3 and the price to achieve that coverage at the yield goal indicated (175 bushel). 175 bushel x .089 = 15.58 bushel. $76.56 (total NH3 cost) divided by 15.58 bushel = $4.91 per bushel (in our scenario it calculates to $4.92 based on rounding). So, the breakeven price to cover the cost of NH3 in this scenario is $4.92 per bushel (at the 175 bushel yield estimate).

The second part of the sensitivity table in this scenario allows you to offset price objections that growers may present to you. You can do this in two different ways. Your cost for NH3 in this scenario is $525 per ton and let's say that the competition is $500 per ton for a difference of $25 per ton. If you look at those prices and slide over to the 175 bushel column you will see that the difference of $25 per ton only equates to a $0.02 per bushel difference in selling price to cover the $25 (that is one way to present the information). The other way focuses on the potential to increase the growers yield with programs and tools that you have available. This allows you to move from price to production, taking your conversation with the grower to an agronomic standpoint versus price. Here is how you can do this:

Let's say the $25 per ton objection comes up. Instead of focusing on that, you talk with the grower about various ways to potentially impact yield (fungicide, foliar nutrition, biological products, seed treatments, etc.). You back up your proposal with MiField yield data that indicates over "X" years a specific practice has increased yield by an average of 10 bushel, taking the yield estimate to 185 bushel. Next, you on the 185 bushel column and see that at $435 per ton of NH3 the price per bushel to cover cost is now at $4.65 (a reduction of $0.29 per bushel versus your original proposal, and $0.27 per bushel lower than the breakeven price per bushel of $4.92 with the competitions price of $425 per ton). This now shifts the conversation from NH3 price to a focus on marketing strategy. It also helps the grower to see that you are focused on both helping him increase his overall production and assisting him with a ROI strategy (plus using the agronomic assets of MiField to point him in the right direction.



NH3 Cost per Ton	Corn Bushels per Acre				
	155	165	175	185	195
$360.00	$5.49	$5.16	$4.86	$4.60	$4.36
$385.00	$5.51	$5.18	$4.88	$4.62	$4.38
$410.00	$5.53	$5.20	$4.90	$4.63	$4.40
$435.00	$5.55	$5.21	$4.92	$4.65	$4.41
$460.00	$5.57	$5.23	$4.93	$4.67	$4.43
$485.00	$5.59	$5.25	$4.95	$4.68	$4.44
$510.00	$5.61	$5.27	$4.97	$4.70	$4.46

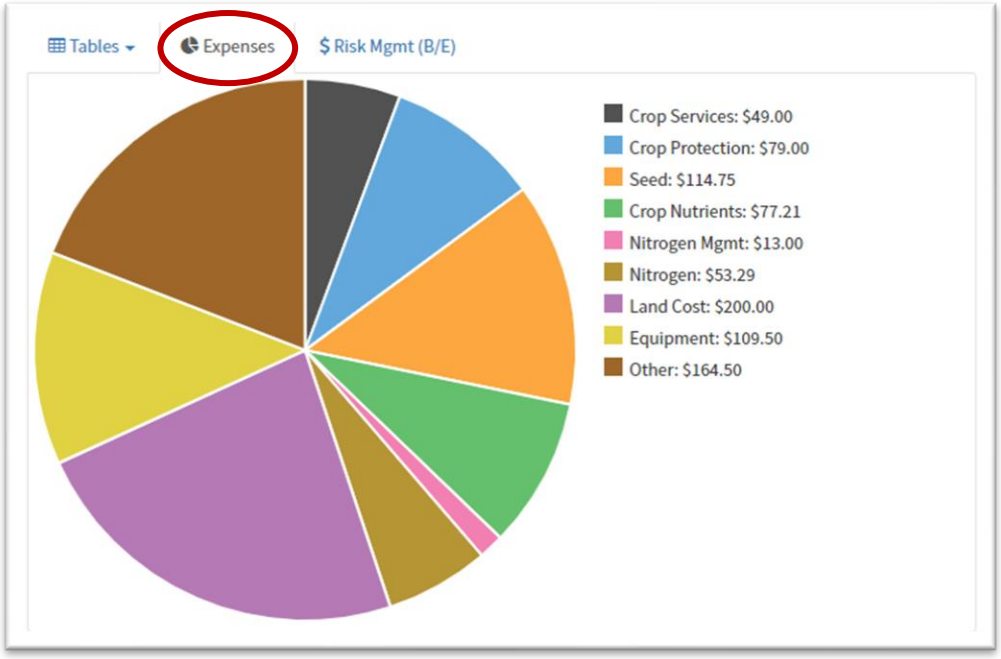
Sensitivity to NH3 cost (Profit per acre)

This chart focuses on the same principles as the Sensitivity to NH3 cost (breakeven), by taking a different look at the same figures. In this example you can see that the profit per acre (based on the cost of NH3) varies by $2.58 per acre when you compare your NH3 price against the competition. However, if you propose the same 10 bushel gain based on your agronomic recommendation the margin per acre increases by $34.92 versus the competitions lower NH3 price and lower yield expectation. Once again you will want to back up your proposal with proven yield data from MiField trials (building confidence in your plan).

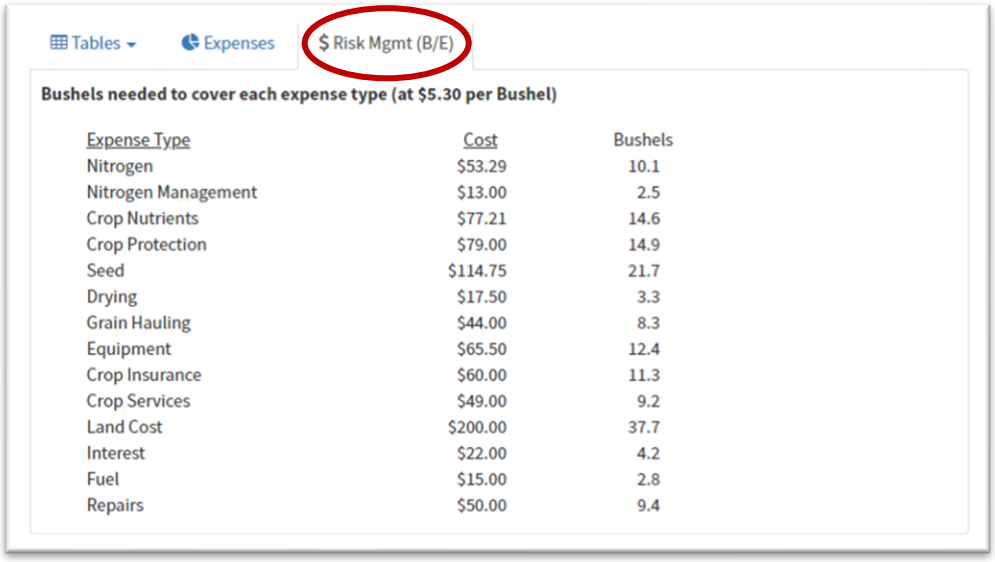

Tables Expenses $ Risk Mgmt (B/E)

NH3 Cost per Ton	Corn Bushels per Acre				
	155	165	175	185	195
$360.00	($29.56)	$23.44	$76.44	$129.44	$182.44
$385.00	($32.62)	$20.38	$73.38	$126.38	$179.38
$410.00	($35.69)	$17.31	$70.31	$123.31	$176.31
$435.00	($38.75)	$14.25	$67.25	$120.25	$173.25
$460.00	($41.81)	$11.19	$64.19	$117.19	$170.19
$485.00	($44.87)	$8.13	$61.13	$114.13	$167.13
$510.00	($47.94)	$5.06	$58.06	$111.06	$164.06

The **Expenses Chart** highlights the various expenses that a grower anticipates, breaks them down on a per acre basis and presents them in a visual chart.



The **Risk Management** chart presents similar expense data in a manner that lists not only the specific expenses, but the bushels of crop to cover those expenses based on your estimated selling price. This is another way to have a conversation with a grower about marketing and production strategies (you can alter the anticipated selling price to highlight how marketing decisions can affect overall strategy.



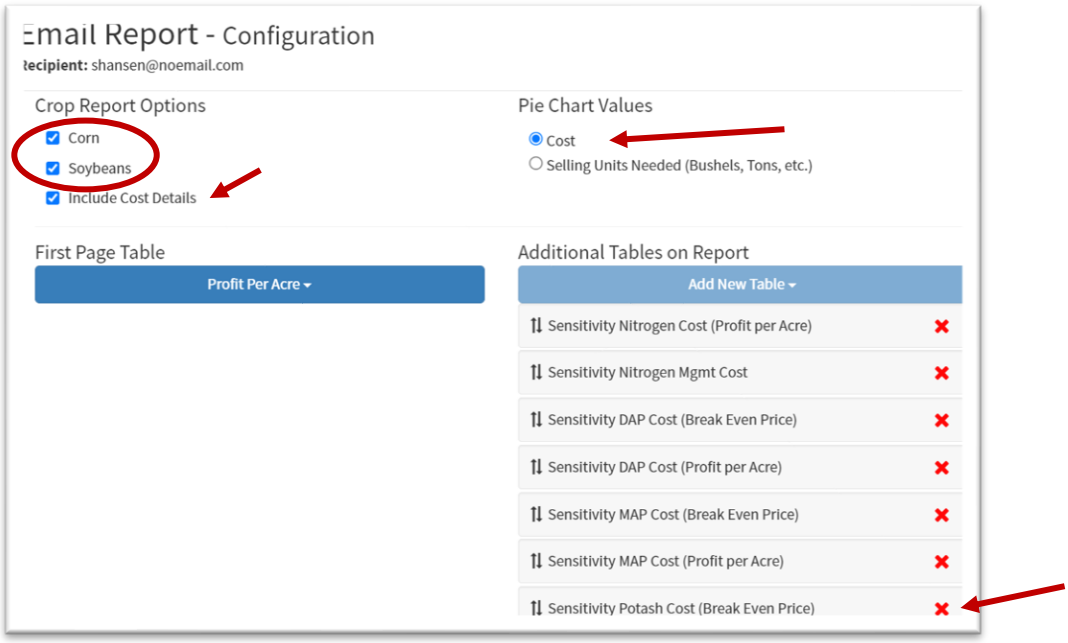
Expense Type	Cost	Bushels
Nitrogen	$53.29	10.1
Nitrogen Management	$13.00	2.5
Crop Nutrients	$77.21	14.6
Crop Protection	$79.00	14.9
Seed	$114.75	21.7
Drying	$17.50	3.3
Grain Hauling	$44.00	8.3
Equipment	$65.50	12.4
Crop Insurance	$60.00	11.3
Crop Services	$49.00	9.2
Land Cost	$200.00	37.7
Interest	$22.00	4.2
Fuel	$15.00	2.8
Repairs	$50.00	9.4

At the bottom of the scenario page, you will find the 3 buttons listed below (Email, Export, Save). Click on these buttons to perform the functions listed:

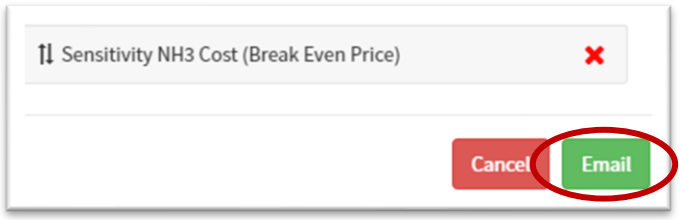
- **Email** allows you to email a scenario directly to a grower using the email that you listed when you entered the grower information
- **Export** creates a pdf version of the scenario which you can save or email
- **Save** does just what it says, saves any information that you have created or updated to a scenario

If you choose to email a scenario there are a few items to note:

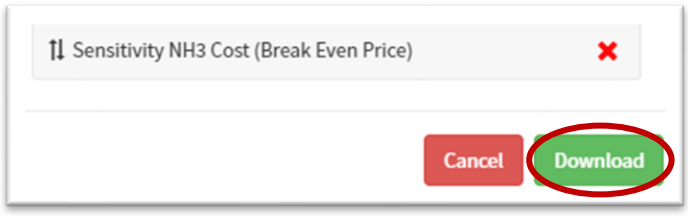
- You can email both a corn and soybean scenario, or choose to report only one crop
- If you would like your product pricing information to appear in the scenario you will need to check the "Include Cost Details". Without checking it your prices will not appear in the scenarios (this is the default and recommended method)
- On the Pie Charts, you can choose how the information is presented; as Cost or as Selling Units Needed (Bushels, Tons, etc.) to cover the cost
- You can also choose which chart you would like to appear on the front page of the report by choosing the chart in the left column. Profit Per Acre is selected below.
- Lastly you can choose which of the sensitivity tables you would like on the report by leaving them or hitting the X in the right-hand column to remove them. Keep in mind that if you choose to leave all the tables you may need to address all the tables with your grower. It is often best simply to include the tables that you feel are most appropriate.



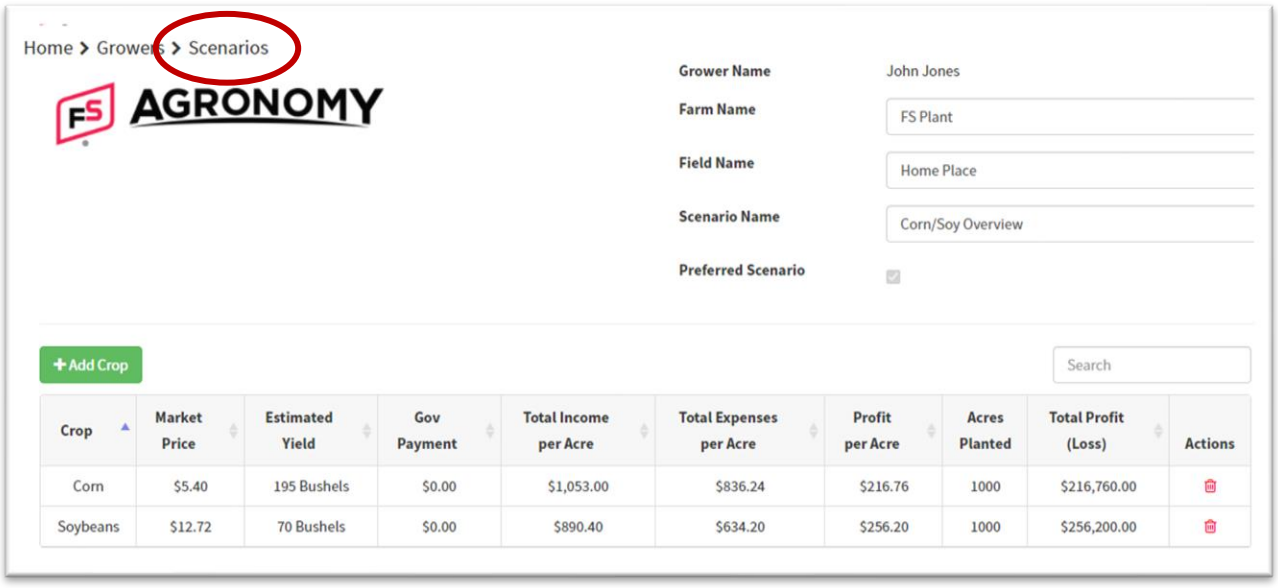
Once you have determined how you want the reports presented, the order of the charts and which charts to include or omit, simply click the **Email** button at the bottom.



Report configuration choices are the same for the Export option except for **Download** versus Email.

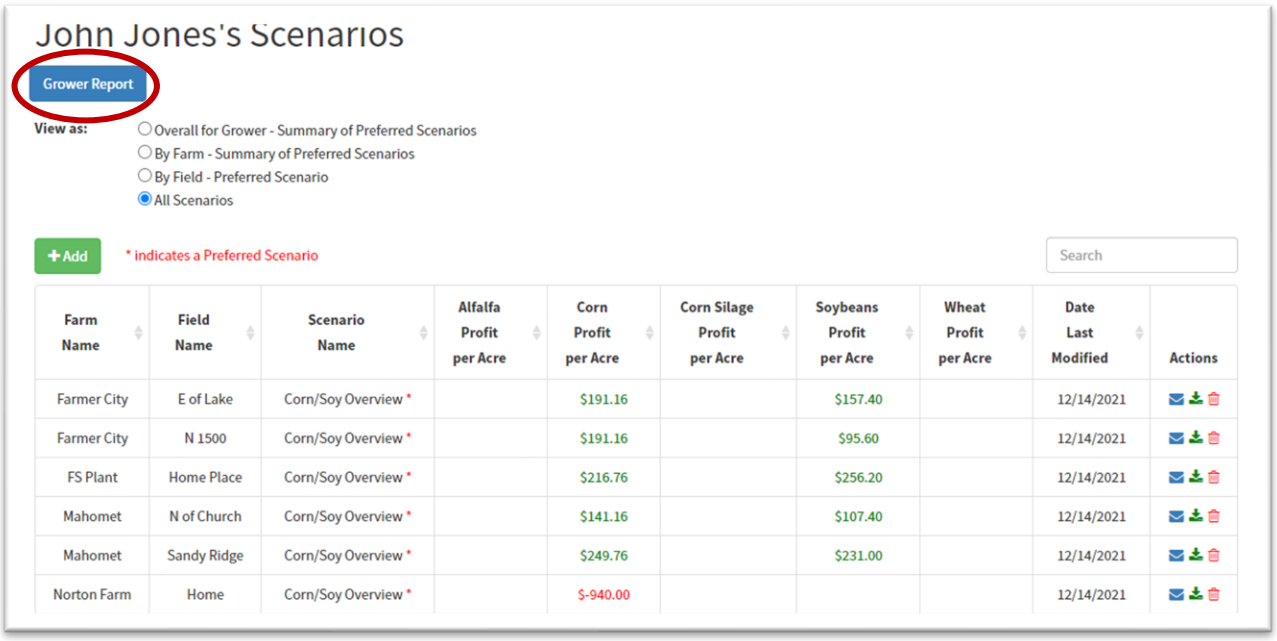


Once you have completed a scenario, emailed a scenario to your grower, or downloaded a version to your computer you will be directed back to the top of the scenario screen. Here, if you click on the **Scenarios** button you will be sent back to the grower scenario page.



At the grower scenario page, you will find one last tool for your use. If you have multiple scenarios for an individual grower, the Grower Report tool will create a report (shown on next page) that displays information about that entire operation related to his/her fields or farms (most profitable, least profitable, 5 most profitable, 5 least profitable, etc.). This allows the grower to better understand how

their various fields/farms compare to other fields/farms in their operation. You can configure this report to show as Overall for Grower, By Farm, By Field, or All Scenarios.



Farm Name	Field Name	Scenario Name	Alfalfa Profit per Acre	Corn Profit per Acre	Corn Silage Profit per Acre	Soybeans Profit per Acre	Wheat Profit per Acre	Date Last Modified	Actions
Farmer City	E of Lake	Corn/Soy Overview *		$191.16		$157.40		12/14/2021	
Farmer City	N 1500	Corn/Soy Overview *		$191.16		$95.60		12/14/2021	
FS Plant	Home Place	Corn/Soy Overview *		$216.76		$256.20		12/14/2021	
Mahomet	N of Church	Corn/Soy Overview *		$141.16		$107.40		12/14/2021	
Mahomet	Sandy Ridge	Corn/Soy Overview *		$249.76		$231.00		12/14/2021	
Norton Farm	Home	Corn/Soy Overview *		$-940.00				12/14/2021	

An example of the All Scenarios grower report can be found on the next pages. This report is more robust when you have run multiple scenarios for additional farms and fields.

FS Profit Maximizer

Grower Report for John Jones

Crop Year 2022

Overall Profitability

Corn Profit per Acre:	**$8.33**
Soybeans Profit per Acre:	**$169.52**

Analysis by Field Scenario

	Field Name	Scenario Name	Crop	Profit per Acre	Date Last Modified
Farm Name:	**Farmer City**				
	E of Lake	Corn/Soy Overview *	Corn	$191.16	12/14/2021
	E of Lake	Corn/Soy Overview *	Soybeans	$157.40	12/14/2021
	N 1500	Corn/Soy Overview *	Corn	$191.16	12/14/2021
	N 1500	Corn/Soy Overview *	Soybeans	$95.60	12/14/2021
Farm Name:	**FS Plant**				
	Home Place	Corn/Soy Overview *	Corn	$216.76	12/14/2021
	Home Place	Corn/Soy Overview *	Soybeans	$256.20	12/14/2021
Farm Name:	**Mahomet**				
	N of Church	Corn/Soy Overview *	Corn	$141.16	12/14/2021
	N of Church	Corn/Soy Overview *	Soybeans	$107.40	12/14/2021
	Sandy Ridge	Corn/Soy Overview *	Corn	$249.76	12/14/2021
	Sandy Ridge	Corn/Soy Overview *	Soybeans	$231.00	12/14/2021
Farm Name:	**Norton Farm**				
	Home	Corn/Soy Overview *	Corn	-$940.00	12/14/2021

Profitability by Farm

Farm Name	Crop	Profit per Acre
Farmer City	Corn	$191.16
	Soybeans	$126.50
FS Plant	Corn	$216.76
	Soybeans	$256.20
Mahomet	Corn	$195.46
	Soybeans	$169.20
Norton Farm	Corn	-$940.00

Profitability by Field

Farm Name	Field Name	Crop	Profit per Acre
Farmer City	E of Lake	Corn	$191.16
		Soybeans	$157.40
	N 1500	Corn	$191.16
		Soybeans	$95.60
FS Plant	Home Place	Corn	$216.76
		Soybeans	$256.20
Mahomet	N of Church	Corn	$141.16
		Soybeans	$107.40
	Sandy Ridge	Corn	$249.76
		Soybeans	$231.00
Norton Farm	Home	Corn	-$940.00

5 Most Profitable Fields

Corn

Farm Name	Field Name	Profit Per Acre
Mahomet	Sandy Ridge	$249.76
FS Plant	Home Place	$216.76
Farmer City	N 1500	$191.16
Farmer City	E of Lake	$191.16
Mahomet	N of Church	$141.16

Soybeans

Farm Name	Field Name	Profit Per Acre
FS Plant	Home Place	$256.20
Mahomet	Sandy Ridge	$231.00
Farmer City	E of Lake	$157.40
Mahomet	N of Church	$107.40
Farmer City	N 1500	$95.60

5 Least Profitable Fields

Corn	FarmName	FieldName	Profit Per Acre
	Norton Farm	Home	-$940.00
	Mahomet	N of Church	$141.16
	Farmer City	E of Lake	$191.16
	Farmer City	N 1500	$191.16
	FS Plant	Home Place	$216.76

Soybeans	FarmName	FieldName	Profit Per Acre
	Farmer City	N 1500	$95.60
	Mahomet	N of Church	$107.40
	Farmer City	E of Lake	$157.40
	Mahomet	Sandy Ridge	$231.00
	FS Plant	Home Place	$256.20

If you have other questions regarding FS Profit Maximizer, please contact your GROWMARK SAMM for more information.