Profit Optimizer Y

A Tool to Predict Optimal Market Weight of Pigs

Overview of Profit Optimizer Y

- Predicts optimal selling weight for a population of pigs based on margin over feed cost
- Utilizes producer's feed costs, growth curves, carcass/live prices, packer payment matrix, and carcass/live data
- Allows for custom grid build within tool to establish specific weight and grade breaks
- Requires categorized carcass/live data for weight and/or grade
- Takes categorized carcass/live data and determines average and standard deviation of carcass/live weight
- Determines value for hitting profit optimizing weight and value for reducing variation in live weight
- Allows user to run "what if" scenarios for changes in feed cost, carcass/live price, and variation
 in live weight



Table of Contents

Overview of Profit Optimizer Y	1
User Inputs the following Data into Profit Optimizer Y	3
Access to Profit Optimizer Y	3
Login to Profit Optimizer Y	4
Growth Parameters Setup	5
Assumptions Setup	9
Begin Grid Setup & Data Entry	11
Payment Grid Setup	12
Data Entry	16
Select Data to Pull	19
Pulling Data from Elanco Database	20
Data Pulled Successfully from Elanco	20
Growth Curve Metrics	21
Payment Grid	22
Marketed Animals in Payment Grid	23
Market Weight Optimization	23
Margin Over Feed Cost Summary	26
Market Weight Optimization	29
How does Profit Optimizer Y reduce standard deviation?	30
Example 1	30
Example 2	30
Standard Deviation Reduced 25%	31
Summary of Analyses	31
Re-optimize weight for reduced variation	32
Optimized MOFC by Carcass Weight	33
Summary of Analyses	33
Market Weight Optimization – Setting the Target	34
Export to Power Point	36



User Inputs the following Data into Profit Optimizer Y

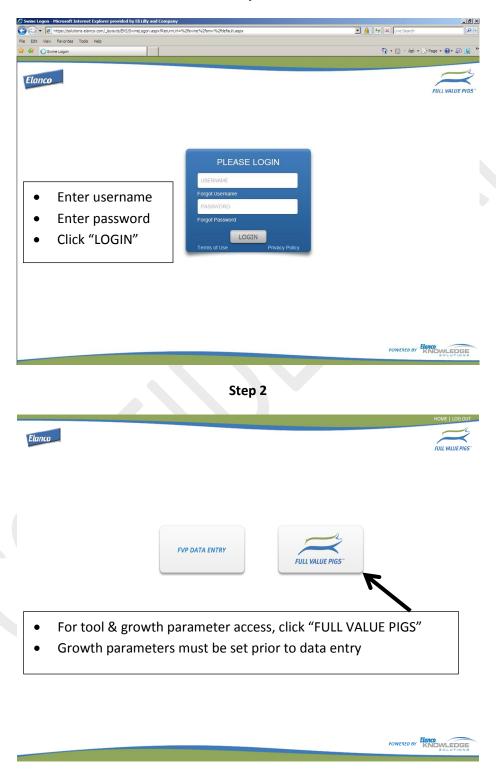
- Packer payment grid
- Growth curve data
- Group carcass data monthly
- Feed budget and costs
- Carcass/Live price

Access to Profit Optimizer Y

- Web-based tool secure Elanco website
- Account Team will have login and password
- Account Team defines who within their account team has access to the tool & enters data
- Account would not have access to tool



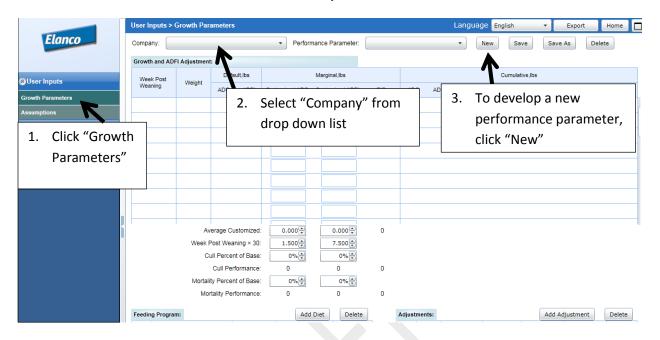
Login to Profit Optimizer Y

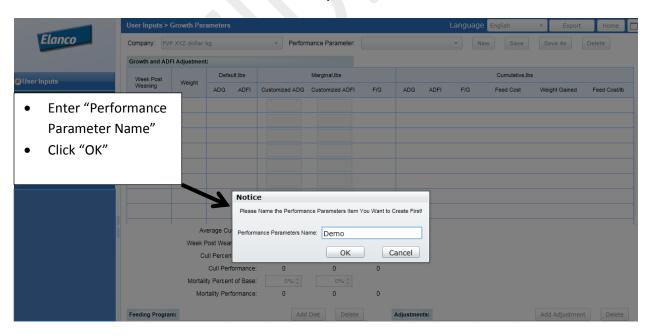




Growth Parameters Setup

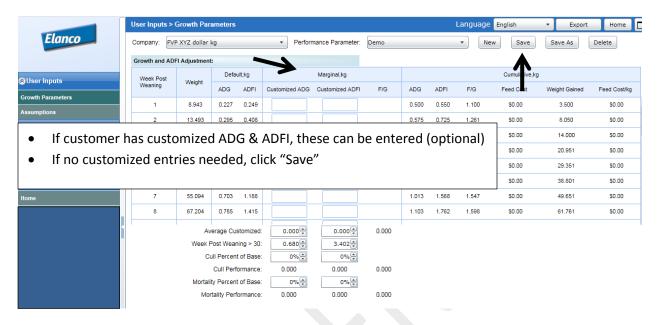
Step 1

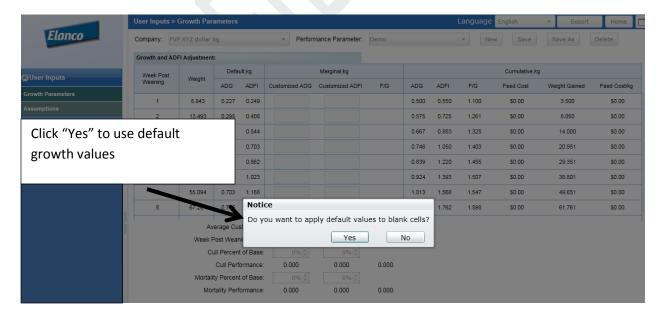






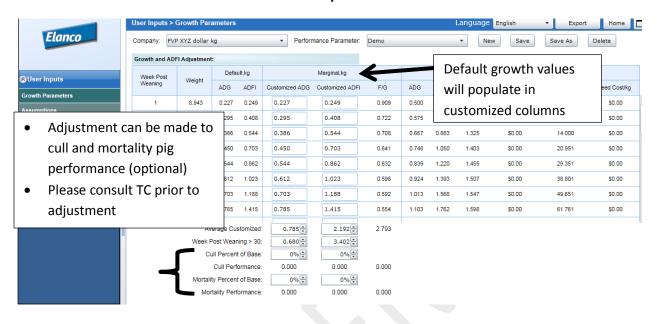
Step 3

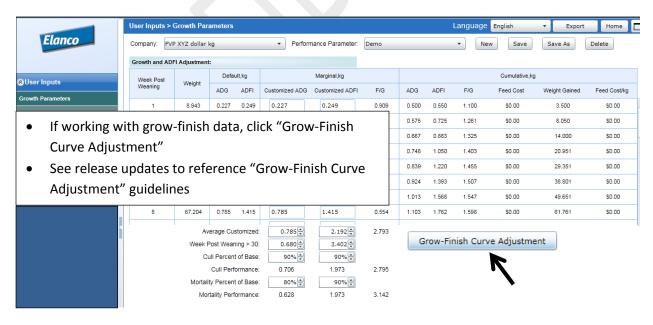






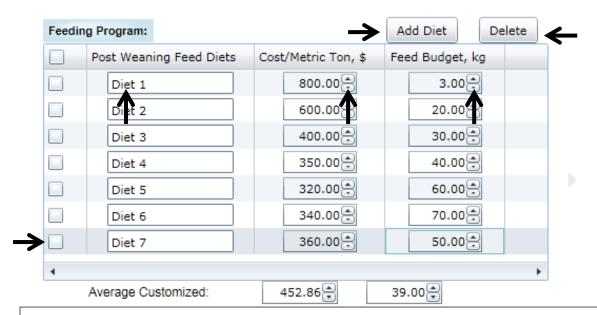
Step 5



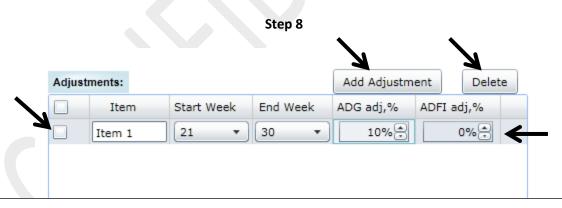




Step 7



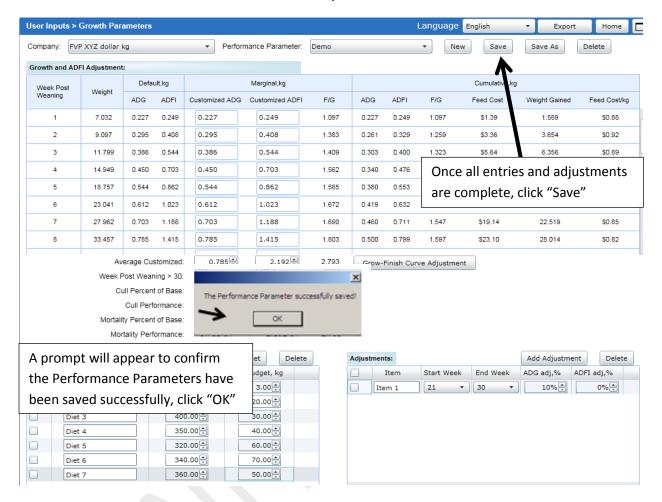
- Profit Optimizer Y will require Feeding Program entry
- Enter Post Weaning Feed Diet names, cost, and budgeted units
- To add diet, click "Add Diet" and enter required information
- To remove a diet, select the diet you wish to remove by clicking on the boxes located on left side, then click "Delete"



- Optional adjustments to the growth curve may be entered as appropriate
- Enter item name, start week, end week, ADG adj %, and ADFI adj %
- To add adjustment, click "Add Adjustment" and enter required information
- To remove adjustment, select the item you with to remove by clicking on the boxes located on left side, then click "Delete"



Step 9



Assumptions Setup

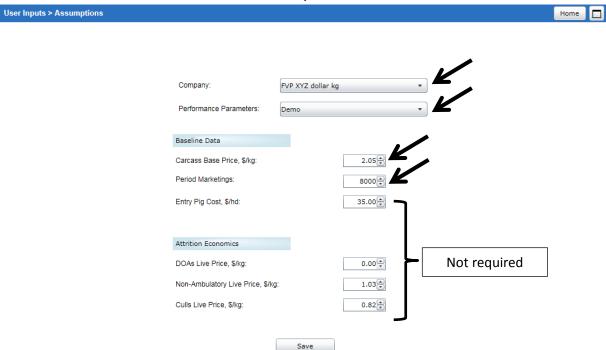
Step 1



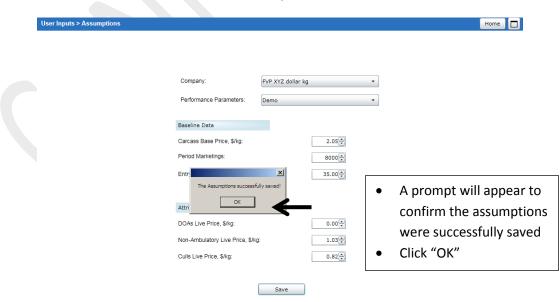
- A prompt will appear to confirm the Performance Parameters have been saved successfully
- Now, the assumption parameters must be set.
- If this is the initial setup, click "Yes"
- If setup is already complete and you wish to bypass, click "No"



Step 2



- Select appropriate Company and Performance Parameter
- Enter Carcass Base Price (appropriate units of measure) & Period Marketings (# of pigs)
- It is not necessary to enter the identified parameters for Profit Optimizer Y
- Once complete, click "Save"





Begin Grid Setup & Data Entry





- Next, begin setup and data entry
- Click "FVP DATA ENTRY"





Payment Grid Setup

Step 1

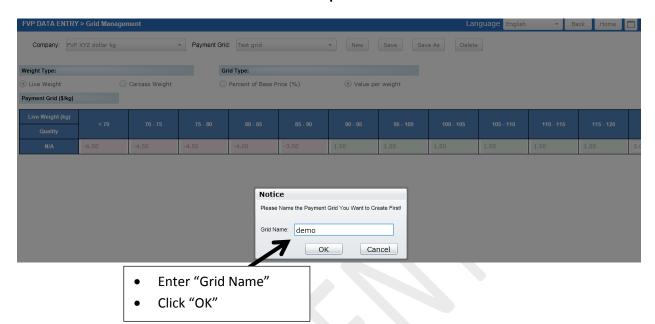


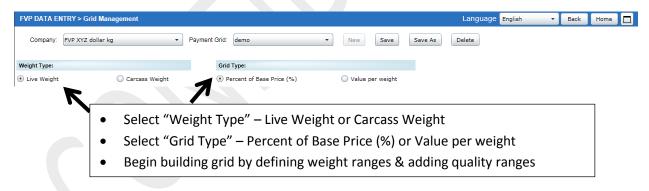
Step 2





Step 3



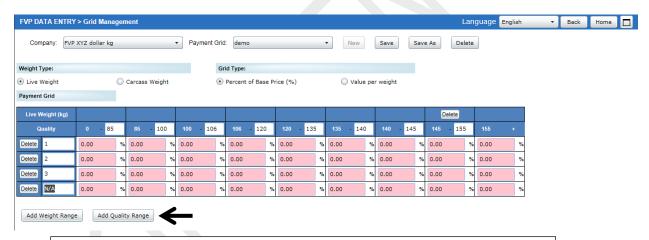




Step 5



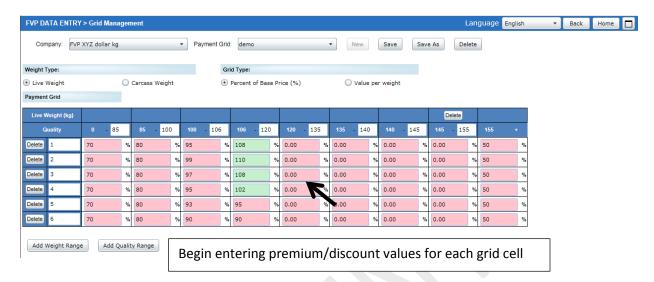
- K
- Set initial weight range (example 0 kg 85 kg)
- Click "Add Weight Range" to insert additional grid weight ranges



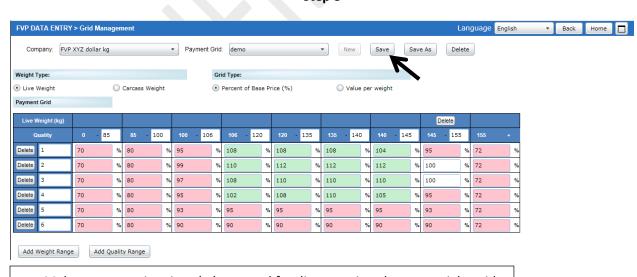
- If grid is weight only grid, no quality grade is needed
 - Proceed to entering premium/discount values
- If grid includes quality ranges, then enter initial quality value and click "Add Quality Range"



Step 7

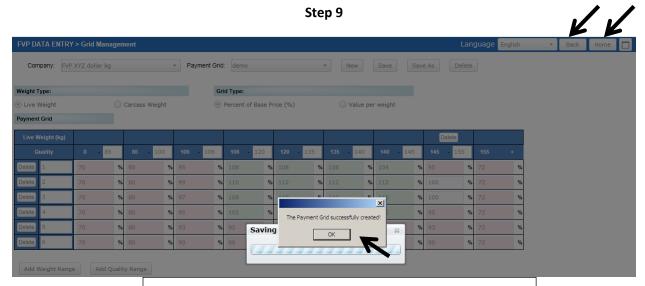


Step 8



- Make sure negative signs () are used for discounts in value per weight grids
- Once premium/discount values are entered, click "Save"

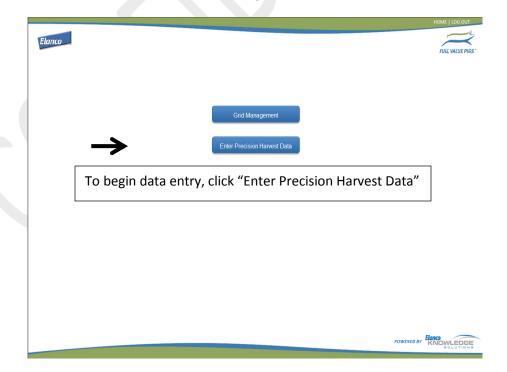




- A prompt will alert that the grid has been saved correctly
- Click "OK"
- Then click "Back" to continue with data entry
- Or click "Home" to begin tool access

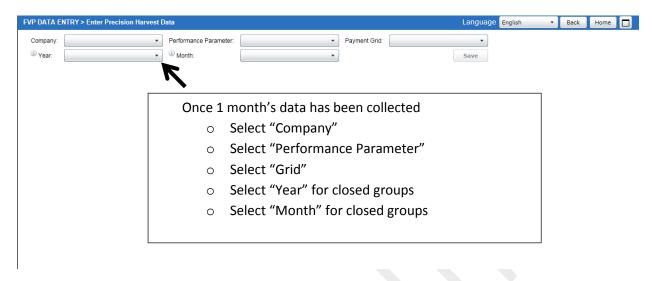
Data Entry

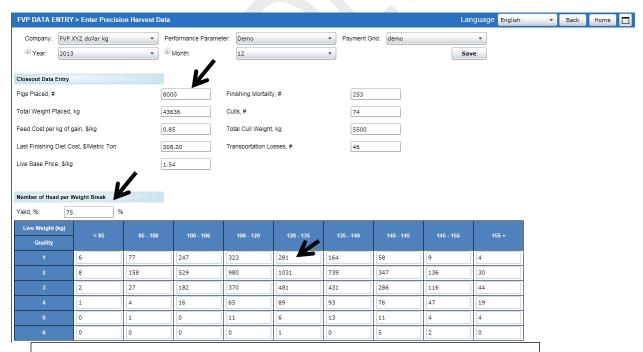
Step 1





Step 2

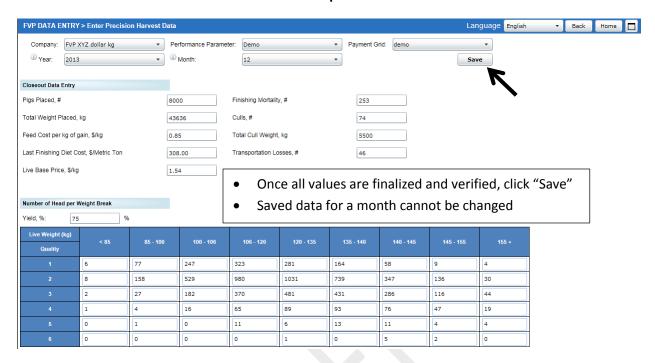


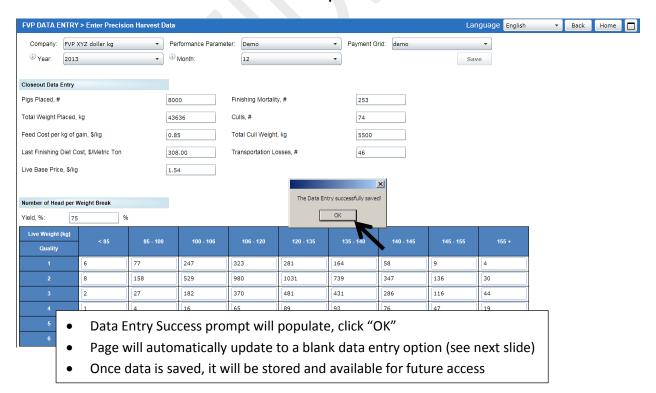


- Enter the required entries in "Closeout Data Entry"
- Enter values into grid categories in "Number of Head per Weight Break"



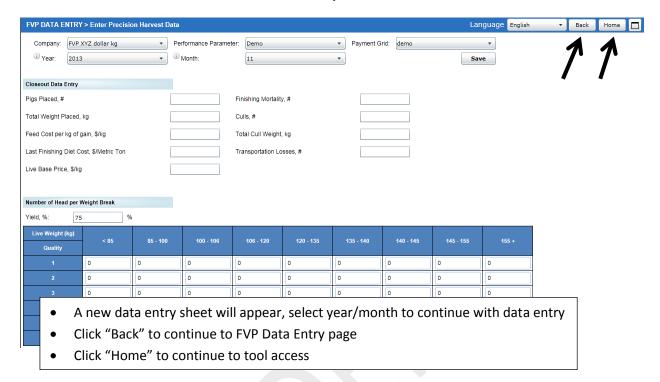
Step 4



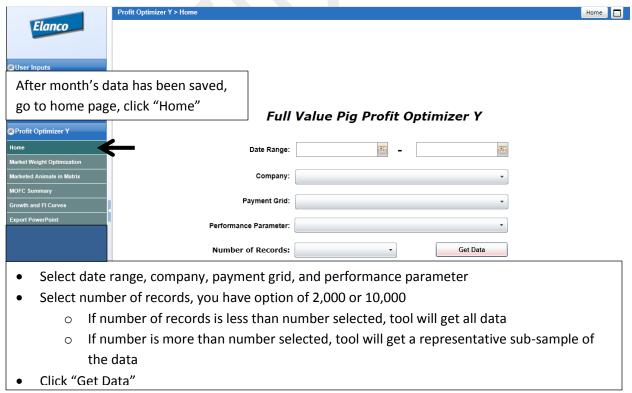




Step 6

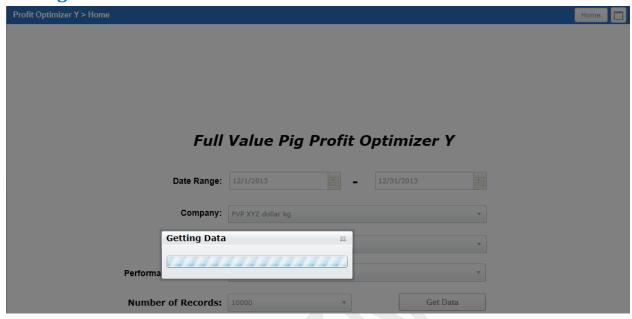


Select Data to Pull





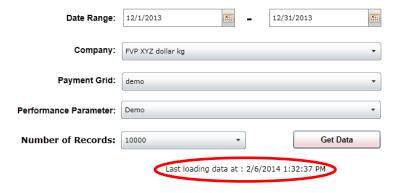
Pulling Data from Elanco Database



Data Pulled Successfully from Elanco



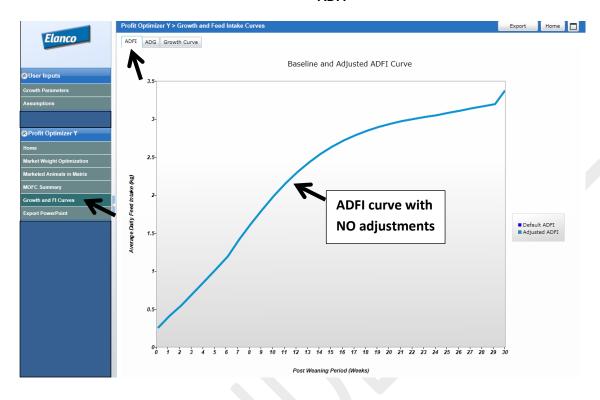
Full Value Pig Profit Optimizer Y



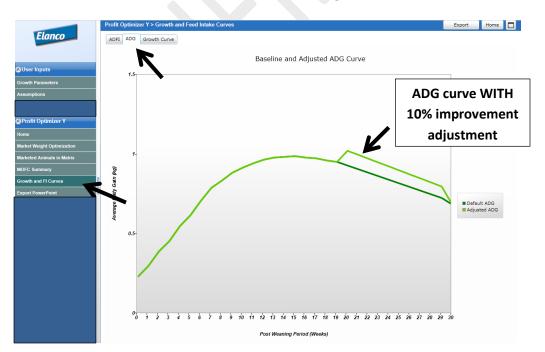


Growth Curve Metrics

ADFI

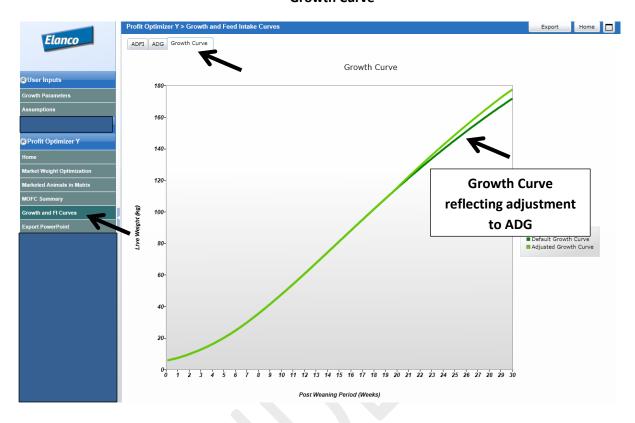


ADG

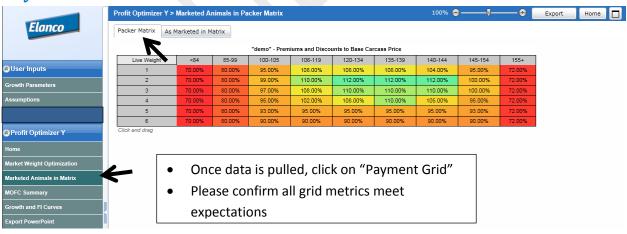




Growth Curve

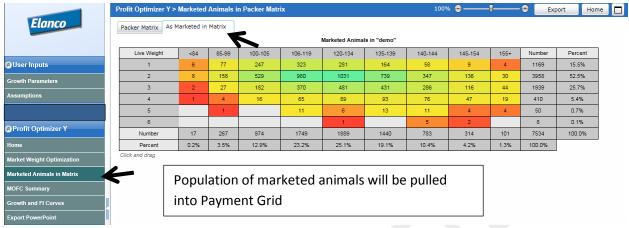


Payment Grid

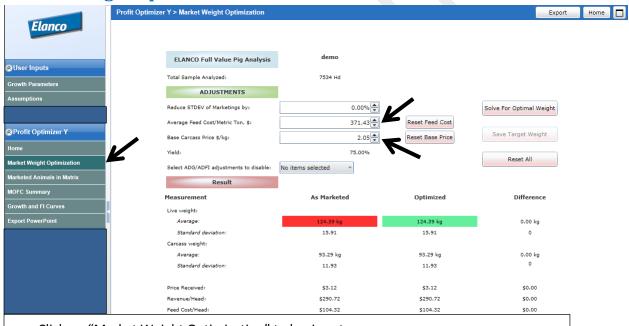








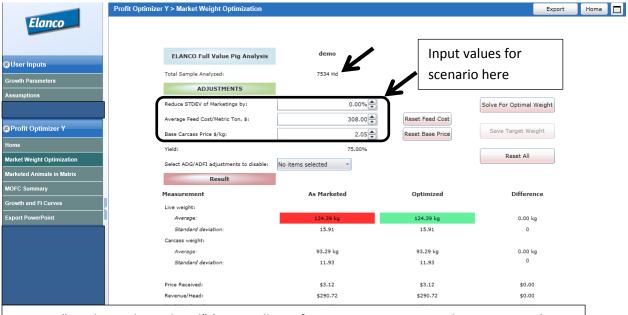
Market Weight Optimization



- Click on "Market Weight Optimization" to begin setup
- "Average Feed Cost/Metric Ton" will be populated as weighted average from growth parameter "Post Weaning Feed Diets"
- Base <u>Carcass</u> Price will be populated from the "Assumptions" setup



Market Weight Optimization – Current

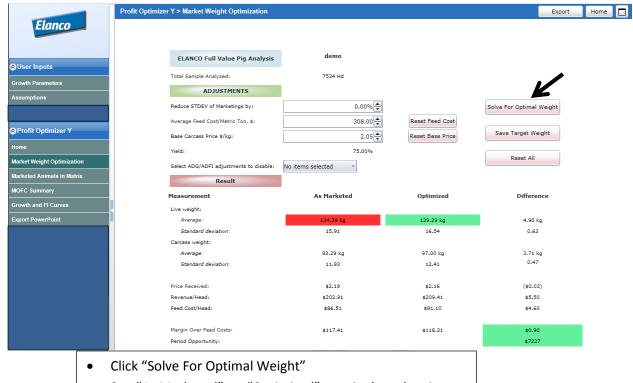


- See "Total Sample Analyzed" (notice all pigs from January represented since <10,000)
- Begin entering values for your scenario

Summary of Current Conditions

Parameter	Values
Market conditions	
Average feed cost / Metric Ton, \$	\$308.00
Base carcass price, \$/kg	\$2.05
Yield, %	75.00%
Base live price, \$/kg	\$1.54
Market weight	
Average, kg	124.39 kg
Standard deviation, kg	15.91 kg
Return over feed cost, \$/pig	\$117.41





Market Weight Optimization - Solve for Optimal Weight

• See "As Marketed" vs. "Optimized" metrics based on inputs

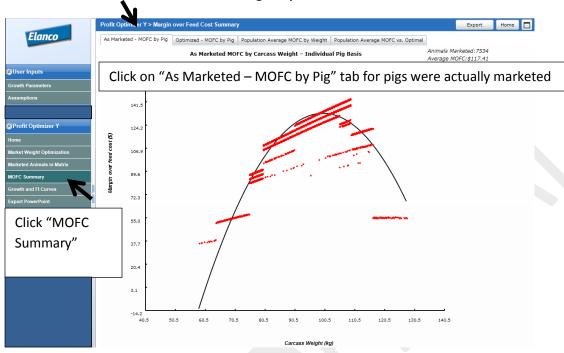
How does Profit Optimizer Y solve for optimal weight?

- Utilizes the population of pigs (2,000 or 10,000 pigs)
- Keeps CV of carcass weight the same, but will adjust standard deviation of carcass weight based on the new mean
- Calculates average margin over feed cost for the population of pigs on 1 kg intervals for carcass weights of 68 to 118 kg (plus or minus 25 kg of the average carcass weight)
 - As the average live weight changes, growth rate, feed intake, carcass yield, and lean percentage are adjusted
- Identifies the average live weight of the population that maximizes MOFC, which is the profit
 optimizing weight

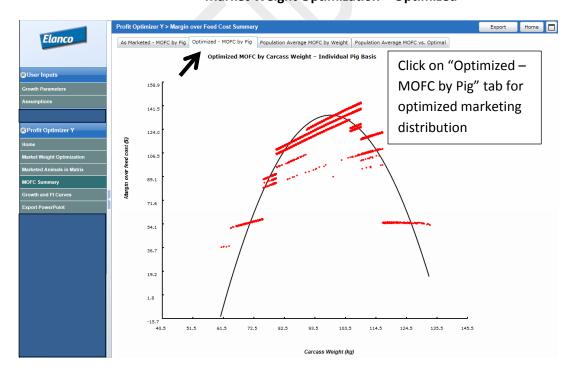


Margin Over Feed Cost Summary

Market Weight Optimization - As Marketed

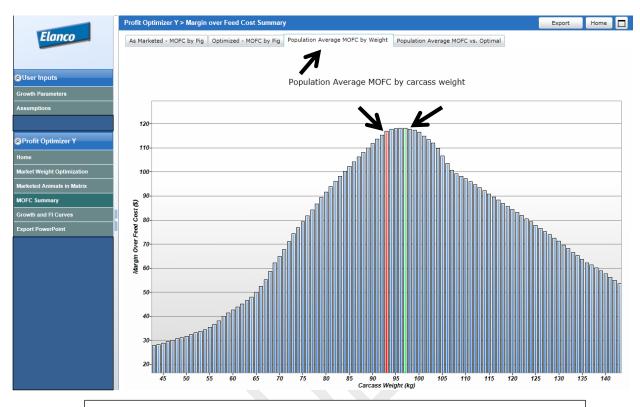


Market Weight Optimization – Optimized





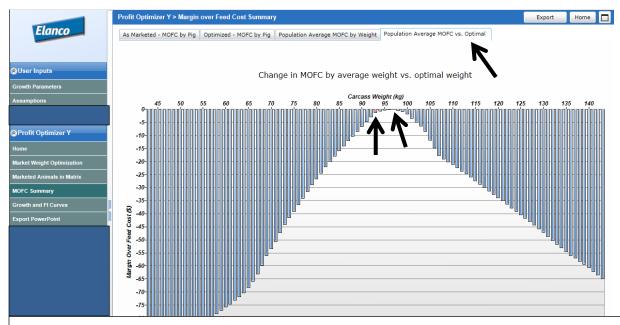
Market Weight Optimization – Population Avg MOFC by Weight



- Click "Population Average MOFC by Weight"
- Red bar = MOFC for "As Marketed"
- Green bar = MOFC for "Optimized"
- All other bars represent MOFC by shifting population in 1 kg increments



Market Weight Optimization – Population Avg MOFC vs. Optimal



- Click "Population Average MOFC vs. Optimal"
- Red bar = difference in MOFC for "As Marketed" vs. "Optimized"
- No bar = "Optimized" or value is "0"
- All other bars represent difference in MOFC vs. Optimal by shifting population in 1 kg increments

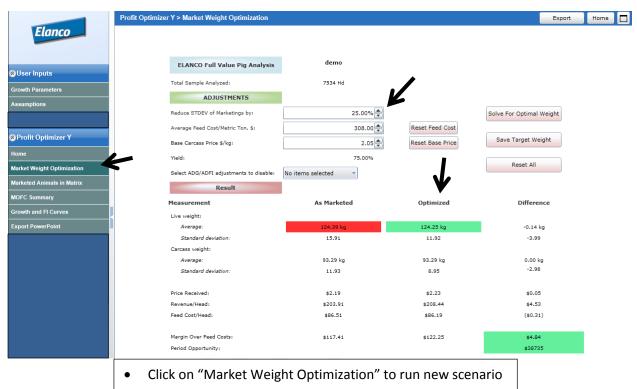
Summary of Market Weight Optimization

Parameter	Current	Optimized
Market conditions		
Average feed cost / Metric Ton, \$	\$308.00	\$308.00
Base carcass price, \$/kg	\$2.05	\$2.05
Yield, %	75.00%	75.00%
Base live price, \$/kg	\$1.54	\$1.54
Market weight		
Average, kg	124.39 kg	129.29 kg
Standard deviation, kg	15.91 kg	16.54 kg
Return over feed cost, \$/pig	\$117.41	\$118.31



Market Weight Optimization

Improve Standard Deviation by 25%



- Let's improve STDEV of live weight by 25%
- See changes in calculations



How does Profit Optimizer Y reduce standard deviation?

Example 1

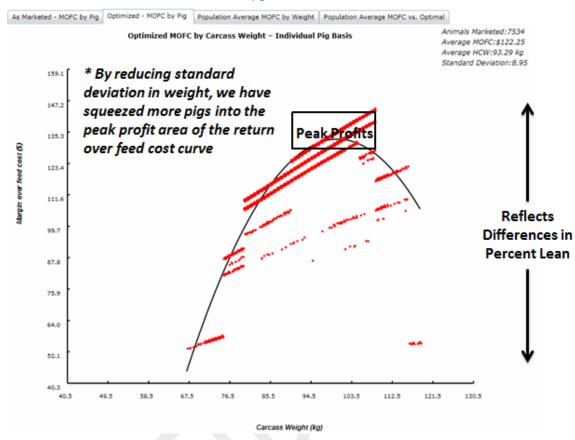
- Calculates the difference between each observation and the mean
 - Mean = 124.39 kg; individual observation = 130.00 kg
 - Mean difference = -5.61 kg
- Difference from the mean is multiplied by the adjustment (25%)
 - \circ -5.61 kg x 0.25 = -1.40 kg closer to the mean
- Adjusted difference is then added/subtracted to the observation
 - o 130.00 kg 1.40 kg = 128.60 kg
- The adjusted weight (128.60 kg) is then adjusted for carcass yield

Example 2

- Calculates the difference between each observation and the mean
 - Mean = 124.39 kg; individual observation = 110.00 kg
 - o Mean difference = 14.39 kg
- Difference from the mean is multiplied by the adjustment (25%)
 - o 14.39 kg x 0.25 = 3.60 kg closer to the mean
- Adjusted difference is then added/subtracted to the observation
 - \circ 110.00 kg + 3.60 kg = 113.60 kg
- The adjusted weight (113.60 kg) is then adjusted for carcass yield



Standard Deviation Reduced 25%

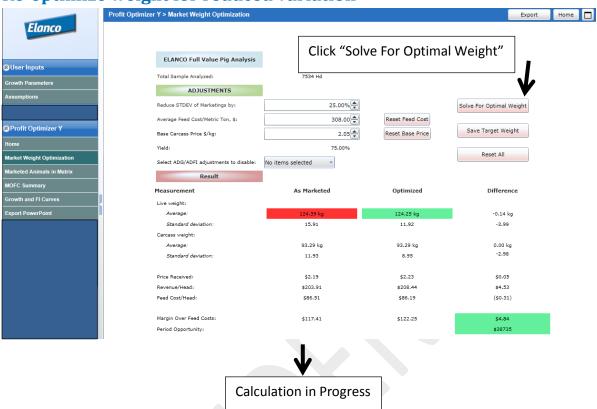


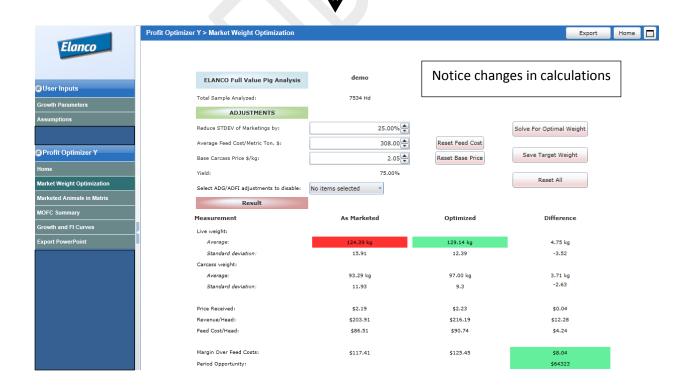
Summary of Analyses

Parameter	Current Scenario	Solved for Optimal	Reduce Standard Deviation by 25%
Market conditions			
Average feed cost / Metric Ton, \$	\$308.00	\$308.00	\$308.00
Base carcass price, \$/kg	\$2.05	\$2.05	\$2.05
Yield, %	75.00%	75.00%	75.00%
Base live price, \$/kg	\$1.54	\$1.54	\$1.54
Market weight			
Average, kg	124.39 kg	129.29 kg	124.25 kg
Standard deviation, kg	15.91 kg	16.54	11.92 kg
Return over feed cost, \$/pig	\$117.41	\$118.31	\$122.25
Change from current, \$/pig		\$0.90	\$4.84



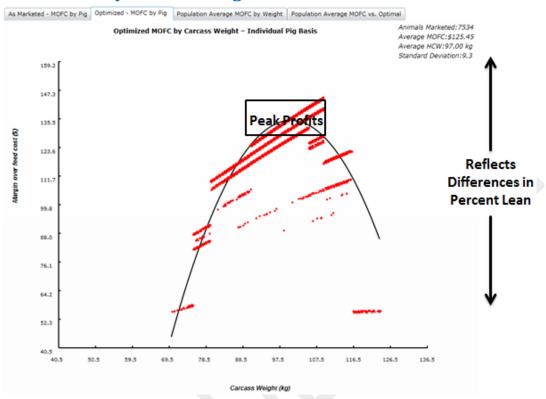
Re-optimize weight for reduced variation







Optimized MOFC by Carcass Weight

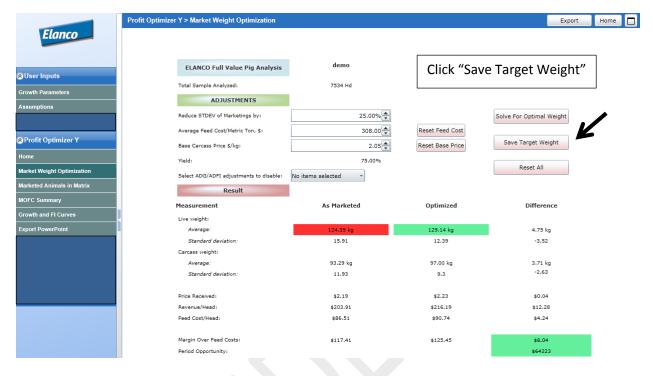


Summary of Analyses

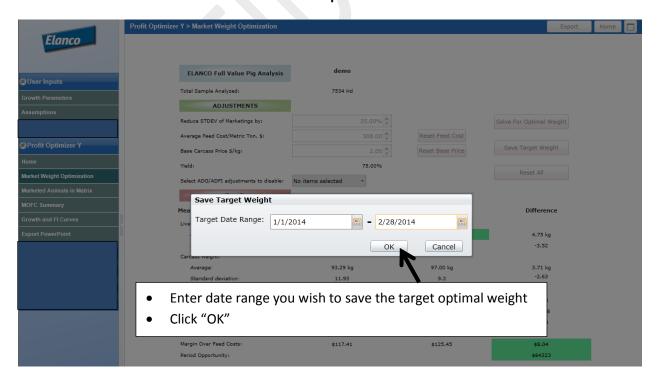
Parameter	Current Scenario	Solved for Optimal	Reduce Standard Deviation by 25%	Re-optimize with 25% reduction in Std. Dev.
Market conditions				
Average feed cost / Metric Ton, \$	\$308.00	\$308.00	\$308.00	\$308.00
Base carcass price, \$/kg	\$2.05	\$2.05	\$2.05	\$2.05
Yield, %	75.00%	75.00%	75.00%	75.00%
Base live price, \$/kg	\$1.54	\$1.54	\$1.54	\$1.54
Market weight				
Average, kg	124.39 kg	129.29 kg	124.25 kg	129.14 kg
Standard deviation, kg	15.91 kg	16.54	11.92 kg	12.39 kg
Return over feed cost, \$/pig	\$117.41	\$118.31	\$122.25	\$125.45
Change from current, \$/pig		\$0.90	\$4.84	\$8.04



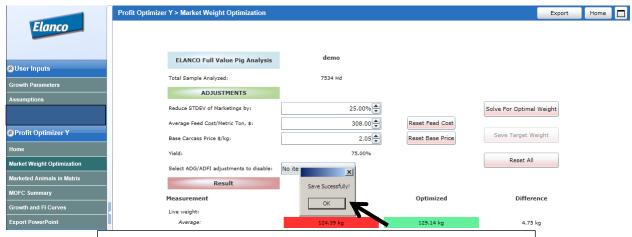
Market Weight Optimization - Setting the Target



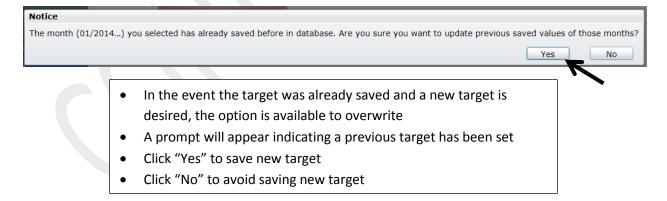
Step 2







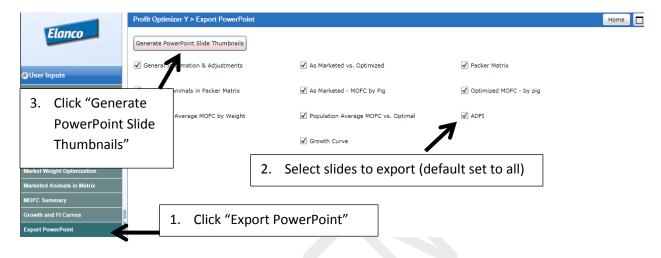
- Set target success prompt will populate, click "OK"
- This will allow the "Optimized" target weight to be saved in tool
- · Optimized target can be resaved if desired



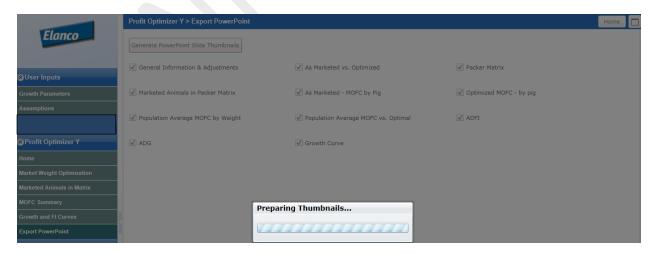


Export to Power Point

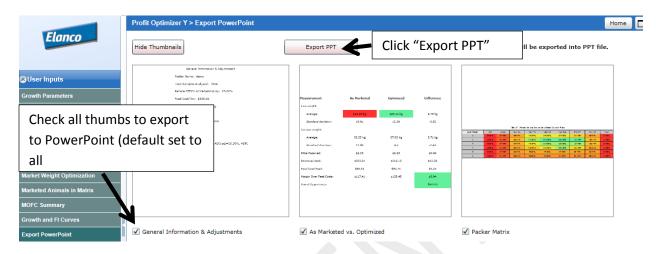
Step 1

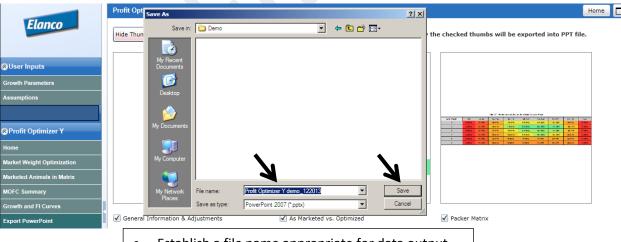


Step 2



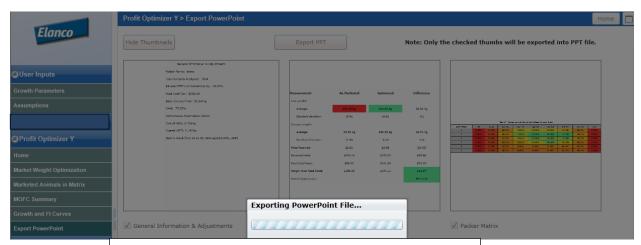






- Establish a file name appropriate for data output
- Click "Save"





- Once file is exported, go to folder where file is saved
- Open PowerPoint file to review presentation

