



Economic Impact of Swine Operations

User Guide



National Pork Board

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Economic Impact of Swine Operations

Overview

This user guide provides guidance on how to complete the Economic Impact of Swine Operations spreadsheet tool. The Economic Impact of Swine Operations spreadsheet tool is designed to highlight the dynamic income and expense activities created by pork production farms. While it is known that swine farms are very diverse in their operations and regions of influence, it must be recognized that a great amount of economic activity is generated from new farm construction and daily operation. As a means to quantify these impacts, the spreadsheet tool provides categorical revenue and expense components that highlight significant economic impacts in the local and regional communities.

How to use

How to use guide

This guide provides instructions on how to use the Economic Impact of Swine Operations spreadsheet tool. The spreadsheet is organized into eight tabs which include:

- Instructions
- Grow-Finish Input
- Grow-Finish Summary
- Brdng (Breeding) Herd Input
- Brdng (Breeding) Finish Summary
- Manure Help Sheet
- Tax Help Sheet
- Resources

In this guide, each tab is supported by a section overview and instructions on how to complete the tab.

[Instructions](#) / [Grow-Finish Input](#) / [Grow-Finish Summary](#) / [Brdng Herd Input](#) / [Brdng Herd Summary](#) / [Manure help sheet](#) / [Tax help sheet \(IA\)](#) / [Resources](#)

General tips

Benchmarks are provided throughout the spreadsheet as guidelines for construction costs and annual inputs where potential for new operational growth is considered. All numbers utilized as benchmarks are estimates and should be viewed aptly. All inputs and resulting output are included as an annual expense or revenue.

Comments have been added to specific cells within the spreadsheet. These cells can be identified by a red corner in the upper right. Hover over these cells for more information.

Instructions

Overview

The first tab **Instructions** includes directions on how to use the overall spreadsheet. The instructions include general information on how to use the input, summary, manure help sheet and the tax help sheet tabs of the tool. This user guide is designed to give you more details for each of the specific tabs. The Instructions tab also includes contact information for the Iowa Pork Industry Center, as well as the authors of the spreadsheet.

Detailed Instructions



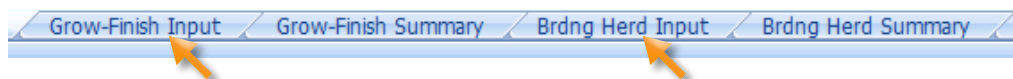
As mentioned in the directions at right, the first task is to complete the input sheet for your specific type of operation. The remaining tasks will be covered in more detail in the instructions for each tab.

The spreadsheet tool includes two separate worksheets: one for grow-finish operations and one for breeding herds.

Iowa Pork Industry Center
Swine Building Economic Impact
Version 1.11

How to use the program

- 1 - Go to the Input sheet for type of operation
- 2 - Enter your information into the Yellow and Blue boxes
Enter percentages into the blue boxes that represent the amount of money that remains in the local economy and a regional economy. Define what is considered "the local economy" and "regional economy" is user dependent. Every situation may be different.
- 3 - Place an "x" in the green boxes
At the bottom of the page is a series of statements with values after the statement. To the left of the statements check the desired boxes to appear on the Summary Sheet.
- 4 - Go to Summary Sheet for type of building and print.



Click on the tab that best fits your operation. If you have a breed-to-feeder, breed-to-finish or your operation is something in between, utilize the Breeding Herd Input tab. Simply add the cost of the nursery and/or grow/finish facilities in the "other facilities" line. This will be explained in more detail in the instructions for the Breeding Herd Tab. In addition, the feed utilization will require a total feed consumption per pig and average ration cost. Please also note that the pig feed is not included in the corn & soybean acre consumption calculation on the Breeding Herd Input worksheet. To obtain an estimate of the corn & soybean per acre consumption, use the Grow-Finish Input worksheet.

Further components to consider when calculating post-weaning production costs, would be to add costs in associated with labor and mortality management. These inputs which include sows and growing pigs will likely be outside the suggested benchmarks.

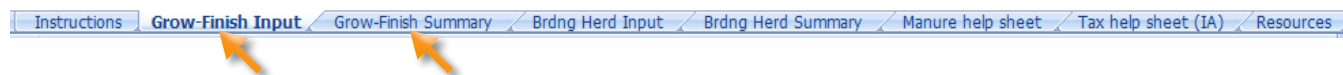
For planning purposes, realistic benchmarks are provided for most inputs. The wide variation in the benchmarks is to account for the diversity in operations and production systems. Anytime a per pig input is required but is unknown, you should utilize the benchmark or the whole farm cost. If the whole farm cost is used, then divide the whole farm cost by the number of pigs to obtain the per-pig input.

Grow Finish Input and Summary

Overview

This section includes information on how to use the Grow-Finish Input and Grow-Finish Summary section of the spreadsheet. Values entered into the input sheet will automatically calculate and populate the summary section.

How to use



The guide breaks the Grow-Finish Input tab into sections to help further clarify each objective. These sections include:

- General Information
- Short Term Impact
- Long Term Impact - Income
- Long Term Impact - Expenses
- Summary

Screen shots and details of each of these sections are included in the input explanations section of this guide. Remember, the instructions tab can help too.

Once completed, the Input Page may be printed; it contains in-depth income and expense details. The Input page can also serve as a good review document, as well as a guide for the correct understanding of inputs. **Remember to set print margins appropriately.**

Please follow the instructions below for the Grow-Finish Input tab.

Input Explanations

General Information

As you complete the worksheet, utilize the yellow boxes to enter in the requested data. It could be in the form of acres,

percentages, general text or dollars. Utilize the blue boxes to enter the percentage of dollars that will stay **locally**.

A screenshot of the 'Grow-Finish Input' worksheet. The top right corner has the 'Pork Checkoff' logo. The main area contains several input fields: 'Barn capacity' (2,400), 'Number of groups per year' (2.2), 'Total cost of construction or current value' (\$ 600,000), and 'Cost per pig space' (\$100-\$275, 5, 250). To the right, there's a 'Farm' section with fields for 'Farm' (Cyclone Pigs), 'Owner' (Cyclone Fans Inc.), 'Address' (Cys Roost, IA), 'Local' (4 county area), and 'Notes' (proposed 2400 wean-fin). Below this is a table with columns: 'Percent spent locally', 'Total', 'Amount remaining locally', and 'Amount remaining regionally'. An orange arrow points to the 'Notes' field.

Every region of the country will have a different definition of “local” dependent on size and structure of counties/state, population and distance from suppliers. Examples might include “60 miles radius,” “tri-county area,” “state,” etc. Regional impacts are considered everything outside of the “local” impact area.

Short Term Impact

This section asks for information concerning construction costs. If details of construction costs are known, complete the following categories to the best of your ability or utilize suggested benchmarks.

Clarification for each

category has been included below.

- **Excavation:** Work completed on a manure storage structure. If a lagoon was utilized, the cost will likely be above the 2-3% suggested benchmark. Note: Excavation includes any work completed to bring gravel or other materials brought to the site for construction of roads, etc.
- **Electrical & plumbing:** Both materials and labor
- **Cement:** Total cost of concrete, rebar, preparation and labor
- **Generator:** If applicable
- **Building:** Lumber, steel, materials, etc., as well as labor
- **Well:** Drilling, pumps, waterline, materials, installation
- **Slats, equipment, engineering, ventilation:** Gates, feeders, feed lines, waterers, bins, scales, fans/controllers, heaters, etc.
- **Permits:** Construction, water, environmental, manure management
- **Other:** Optional site items: i.e., incinerator, compost structure, power washer, trees, office and supplies/shower; any equipment dedicated to the operation such as a skid loader or tractor
- **Construction labor:** A significant portion of the construction cost is labor. A suggested benchmark is 25-30% of the total construction cost. Labor includes engineers, construction workers, equipment installers, delivery drivers, government (permit issuers) and a whole host of support jobs in sales, service and manufacturing, etc. The labor cost is not in addition to the construction cost, but is an estimate of the amount of labor cost attributed to total cost of the building.

Short Term impact					
Percent of total construction cost					
Excavation	2-3%	3%	100%	\$ 18,000	\$ 18,000 \$ -
Electrical, plumbing	4-5%	4%	90%	\$ 24,000	\$ 21,600 \$ 2,400
Cement	22-24%	23%	75%	\$ 138,000	\$ 103,500 \$ 34,500
Generator	4-5%	4%	100%	\$ 24,000	\$ 24,000 \$ -
Building	21-23%	22%	5%	\$ 132,000	\$ 6,600 \$ 125,400
Well	2-3%	2%	85%	\$ 12,000	\$ 10,200 \$ 1,800
Slats, equipment, engineering, ventilation	38-42%	41%	80%	\$ 246,000	\$ 196,800 \$ 49,200
Permits	1-2%	1%	10%	\$ 6,000	\$ 600 \$ 5,400
Other (incinerator, compost structure, power washer, ...)				\$ -	\$ - \$ -
Total %		100%			
Construction Total				\$ 600,000	\$ 381,300 \$ 218,700
Percent of total construction cost as labor					
	25-30%	26%	50%	\$ 156,000	\$ 78,000 \$ 78,000

Long-term Impact - Income

This section gathers income information. If there is an estimate (or history) of a per

pig income these can be entered as gross revenue or income. In the case of contract production, the annual income is known. Otherwise, the operations prior year income or projected income can be utilized.

Long Term impact					
Income					
Income by owner manager or barn rent <u>per pig space</u>		\$ 39	100%	\$ 92,400	\$ 92,400 \$ -
Gross revenue from pig sales <u>per pig</u>		\$ 133	0%	\$ 702,240	\$ - \$ 702,240
Manure value generated <i>Go to Manure help sheet.</i>	ISU	\$ 64,269	100%	\$ 64,269	\$ 64,269 \$ -
Gross Income Generated				\$ 858,909	\$ 156,669 \$ 702,240

Most operations value manure at the price of commercially available fertilizers. If known, enter the gross value or utilize the “manure worksheet” tab in the spreadsheet to determine value (see instructions on page 16 for how to use this tab). This value is dependent on manure analysis, storage type, application method, crop needs, and the value of commercial fertilizer.

Whether utilized on the owner's crop ground or sold, a value is generated and should be credited to the swine operation.

Long Term Impact - Expenses

The production of pigs requires the expenditures of many items. Clarification for the categories has been included below.

- **Utilities and insurance:**

If per pig space costs

are known for utilities and insurance, enter these. If unknown, you are encouraged to use the benchmarks that have been provided. If a total annual cost for the farm is known, then divide the total annual cost by the pig space capacity. Enter maintenance as a percent of your building cost.

$$(\text{Total Annual Cost} / \text{Pig Space Capacity} = \text{Cost Per Pig Space})$$

- **Maintenance:** Enter maintenance as a percent of your building cost.
- **Property taxes:** An operation's specific assessed value and the tax rate can be obtained from the property tax report or by request from the county assessor. These records are often available online if the owner name, site address, or property identification number is known. The line items of the property tax distribution may be helpful talking points as to the direct implications of tax revenue available to your county, township, schools, etc. Assessed value and tax rates vary greatly between states and counties. For Iowa, a "Tax Help Worksheet" is included (see page 17 for instructions on how to use this tab). Iowa assessed values are based on dimensions of the facility and manure storage structure. However, much variability exists amongst assessors so obtaining the operation's specific "property tax report" is ideal.

Additional line items from property tax revenue contribute to: local school districts, county budgets (roads, bridges, administration), Extension, community colleges, township budgets and assessors budget. Please enter the information if available into the corresponding cells.

Expenses									
Utilities <i>per pig space</i>	<i>\$1-\$2</i>	\$ 1.50	100%	\$ 3,600	\$ 3,600	\$ -			
Insurance <i>per pig space</i>	<i>\$1-\$2</i>	\$ 1.50	100%	\$ 3,600	\$ 3,600	\$ -			
Maintenance and upkeep (as percent of building cost)	<i>0.5%-1%</i>	0.50%	75%	\$ 3,000	\$ 2,250	\$ 750			
Property Tax									
Assessed value	<i>Go to state Tax help sheet</i>	62,363							
Tax rate <i>per thousand dollars of assessed value</i>		31.69028							
Total taxes paid per year				\$ 1,976					
School		52%	100%	\$ 1,028	\$ 1,028	\$ -			
County		38%	100%	\$ 751	\$ 751	\$ -			
Ag. Ext. and TB		1%	100%	\$ 20	\$ 20	\$ -			
NEICC		3%	25%	\$ 59	\$ 15	\$ 44			
Townships		3%	100%	\$ 59	\$ 59	\$ -			
Assessor		3%	100%	\$ 59	\$ 59	\$ -			
100% Tax Tot				\$ 1,976	\$ 1,932	\$ 44			

Expenses Continued...

- Pigs:** Enter in the purchase cost per pig. Utilize this space only if you purchased pigs. Leave it blank if you are a custom grower.
- Feed:** Whether purchased, produced on-farm, or delivered via contract production, a feed (grain) value is used. Corn grain and supplement (soybean meal and vitamin/mineral premix) use is tracked. If the main ingredients vary from corn and soybean meal, substitute appropriately. Enter usage on a per pig sold basis. Ingredient values should be included at current

Pigs									
Purchase cost per pig		\$ 34.00	100%	\$	179,520	\$	179,520	\$	-
Feed									
Corn bushels per pig	8-11.5	10.5							
Cost of corn		\$ 5.00	10%	\$	277,200	\$	27,720	\$	249,480
Corn acres consumed annually		175	0%		317		-		317
Supplement pounds per pig	11-12.5	110							
Cost of supplement		\$ 0.13	10%	\$	75,504	\$	7,550	\$	67,954
Soybeans acres consumed annually		40			323		-		323
Grind/mix delivery (\$/ton)	\$3-\$1.5	\$ 10.00	10%	\$	18,427	\$	1,843	\$	16,584
Feed Total				\$	371,131	\$	37,113	\$	334,018
Manure Management									
Annual fees (certifications, inspections, monitoring equipment)		\$ 1,000	80%	\$	1,000	\$	800	\$	200
Gallons (or tons) applied	Go to Manure help sheet: ISU	777,600							
Acres fertilized (application rate/acre)		4,000			194		-		
Application cost per gallon (or ton)		\$ 0.0175	80%	\$	13,608	\$	10,886	\$	2,722
Marketing									
Trucking cost per pig	\$2-\$4	\$ 2.00	50%	\$	10,560	\$	5,280	\$	5,280
Other per pig (brokerage, accounting, contract fees, etc)		\$ 1.00	0%	\$	5,280	\$	-	\$	5,280
Mortality									
Mortality management cost per pig space	\$0.50-\$1	\$ 0.50	0%	\$	1,200	\$	-	\$	1,200
Interest									
Interest rate		6.100%							
Dollars borrowed		\$ 540,000			\$4,586				
Lifetime interest [number of years financed]	1-15	15	80%	\$	285,489	\$	228,392	\$	57,098
Current year interest [current year in repayment]	1-15	1	80%	\$	32,940	\$	26,352	\$	6,588
Average annual interest			80%	\$	19,033	\$	15,226	\$	3,807
Labor									
Cost per space	\$5-\$10	\$ 7.00	90%	\$	16,800	\$	15,120	\$	1,680
Consulting fees per year (veterinarian, management hired)		\$ 500	50%	\$	500	\$	250	\$	250
Other									
Health care per pig (vaccines, treatment, etc.)	\$0.50-\$2		0%	\$	-	\$	-	\$	-
Bedding, supplies, rodent control, lawn care ... [per year]			90%	\$	-	\$	-	\$	-
Annual Expenses Total				\$	630,808	\$	275,577	\$	355,231

- market value, anticipated production cost or purchase cost. Utilize local yields to determine acres consumed annually. A benchmark of per head feed utilization is provided. If a separate grind, mix, delivery charge is known input it. If milling is done internally (on-farm), determine a cost for facilities, equipment, utilities/fuel, trucking and labor. The grow-finish diet input provides benchmarks of corn bushels and pounds of supplement fed per pig. It's important to understand the amount of corn bushels and supplement fed per pig is dependent on the recorded beginning and end weight of pigs. This is relevant when considering pig feed cost for pigs consuming a creep nursery or grow finish diet, as both of these diets are commonly requested on a cost per ton basis and total pounds consumed per pig. To calculate the consumption of crop acres, you must first determine a corn and soy meal based diet cost. If other ingredients are used, the acres of consumption are in error.
- Manure management:** Manure management generates both a revenue and cost. Often there are annual compliance or permit fees associated with manure production, storage and land application. If the costs of permits, certifications, inspections, or monitoring equipment are known, enter these. A volume of manure produced is dependent on the type of facility, phase of production, average pig inventory and weight, and feed/water management. (See "Manure Help Worksheet" to estimate volume of production. Instructions for how to use this tab are on page 16 of this guide) Application rates are justified by optimum economic efficiencies obtained within the crop rotation. If a custom applicator is hired, a cost per ton or gallon can be determined for the application. If the application is performed by the farm, value should be determined as the cost of a local applicators charge or as an expenditure for the depreciation of the tractor, equipment, fuel and time use for this activity.
- Marketing:** The primary cost(s) associated with marketing involves transportation of pigs to and from the farm. If trucking cost is known, enter it or if done internally, determine a cost for trucks, fuel and labor. Other costs associated with marketing may include: brokerage, accounting or management fees associated with buying or selling pigs, as well as buying inputs (i.e., feed)

- **Mortality management:** Whether composting, incinerating or rendering, annual costs associated with mortalities are common. Composting costs can include substrate materials, skid loaders and land applications, whereas; incinerating costs include fuel. Rendering fees include a per pig or per pick-up charge.
- **Interest:** Every operation has a cost of financing. For ownership loans enter the interest rate, amount borrowed, length of loan and current year in repayment. The current year, total lifetime, and average annual interest payments are then calculated. Calculations are based off a monthly repayment schedule. *For existing facilities, a current loan balance and years remaining may be entered.*
- **Labor:** People are employed in numerous aspects of the operation. Direct employment costs include the owner/operator or hired labor. This includes both full-time and part-time sources. Enter the labor cost per pig space. Part-time labor often includes power washing, load out, vaccinating, maintenance, lawn care, records, etc. Swine operations may also employ numerous external advisors throughout the year in the form of consultation and service fees. Consultation and service fees may include: veterinarians, nutritionists, engineers and extension. Enter the consulting fees as a per year cost.
- **Other:** Operation specific costs may include landscaping and lawn care, health care, bedding, supplies, utility tractor, equipment, etc. Extra space devoted to the operation such as home office and farm equipment should be included in either the construction costs or here in the “other” expenses category, if the expense is used and is depreciated as part of the swine operation. Annual operating loan expenses should also be included in this category.

Summary Sheet

At the end of the input section you will find a summary sheet. Selected inputs can be checked so that they appear on the printable “Grow Finish Summary.” Placing a check in the green boxes signals the desired boxes to appear on the summary sheet. Only those items checked in the input tab will show up on the summary sheet. Click on the “Go to Grow-Finish Summary” box to be automatically directed to the summary sheet.

Place an "x" in the green boxes for desired information to appear on the Summary sheet.		
<input checked="" type="checkbox"/>	Number of pigs housed	2,400
<input checked="" type="checkbox"/>	Cost of construction or current value	\$ 600,000
<input checked="" type="checkbox"/>	From the total cost of construction this amount adds to the local economy	\$ 381,300
<input checked="" type="checkbox"/>	From the total cost of construction this amount adds to the regional economy	\$ 218,700
<input checked="" type="checkbox"/>	From the construction cost this labor amount adds to the local economy	\$ 78,000
<input checked="" type="checkbox"/>	From the construction cost this labor amount adds to the regional economy	\$ 78,000
<input checked="" type="checkbox"/>	The gross revenue from swine farm operation adds to the local economy	\$ 92,400
<input checked="" type="checkbox"/>	The gross revenue from swine farm operation adds to the regional economy	\$ 702,240
<input checked="" type="checkbox"/>	The cost savings from nutrients utilized adds to the local economy	\$ 64,269
<input checked="" type="checkbox"/>	Insurance, utilities, maintenance and property taxes add to the local economy	\$ 11,426
<input checked="" type="checkbox"/>	The cost of nutrient application adds to the local economy	\$ 10,886
<input checked="" type="checkbox"/>	The cost of nutrient application adds to the regional economy	\$ 2,722
<input checked="" type="checkbox"/>	The nutrients produced fertilize this many acres each year	194
<input checked="" type="checkbox"/>	The number of acres needed to provide corn for this barn	317
<input checked="" type="checkbox"/>	The number of acres needed to provide soybean meal for this barn	323
<input checked="" type="checkbox"/>	The amount paid to a local feed supplier for grind, mix and delivery	\$ 1,843
<input checked="" type="checkbox"/>	The amount paid to a regional feed supplier for grind, mix and delivery	\$ 16,584
<input checked="" type="checkbox"/>	The amount of interest paid to local financial institutions in current year	\$ 26,352
<input checked="" type="checkbox"/>	The amount of interest paid to regional financial institutions in current year	\$ 6,588
<input checked="" type="checkbox"/>	Labor cost to remain in the local economy	\$ 15,120
<input checked="" type="checkbox"/>	Labor cost to remain in the regional economy	\$ 1,680
<input checked="" type="checkbox"/>	Total gross income remaining in the local economy each year	\$ 156,669
<input checked="" type="checkbox"/>	Total gross income remaining in the regional economy each year	\$ 702,240
<input checked="" type="checkbox"/>	Annual expenses that add to the local economy	\$ 275,577
<input checked="" type="checkbox"/>	Annual expenses that add to the regional economy	\$ 355,231

Go to
Grow-Finish
Summary

Summary Explanations

These components are those that are deemed most pertinent to your specific operation and display implications for the local and/or regional economies. If you would like to alter the selected inputs that appear on this tab, please return to the bottom of the “Grow-Finish Input” tab and select or de-select your desired summary items.



Grow-Finish Summary



There is a real need to grow rural economies. This growth needs to be environmentally, socially, and economically sustainable. This growth needs to be diverse, including components such as agriculture, manufacturing, construction, transportation, tourism, public services, energy, and retail marketing. One key to getting our best youth to stay in rural areas is to ensure that there are jobs and a high quality of life. In an agriculture state, rural land will be agronomic in nature, based on the growth of crops such as corn, soybeans and other emerging crops. An integrated crop/livestock industry has great potential to grow rural economies in a sustainable and profitable manner.

The farm at issue consists of the following details and adds value to the community in numerous ways as listed below.

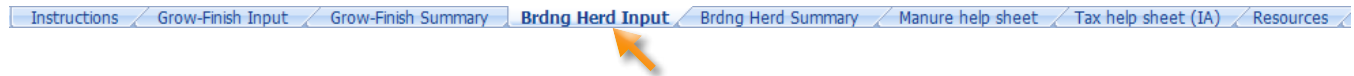
	Cyclone Pigs
• Number of pigs housed	2,400
• Cost of construction or current value	\$ 600,000
• From the total cost of construction this amount adds to the local	\$ 381,300
• From the construction cost this labor amount adds to the local	\$ 78,000
• From the construction cost this labor amount adds to the regional	\$ 78,000
• The gross revenue from swine farm operation adds to the local	\$ 92,400
• The cost savings from nutrients utilized adds to the local economy	\$ 64,269
• Insurance, utilities, maintenance and property taxes add to the local	\$ 11,426
• The cost of nutrient application adds to the local economy	\$ 10,886
• The nutrients produced fertilize this many acres each year	194
• The number of acres needed to provide corn for this barn	317
• The number of acres needed to provide soybean meal for this barn	323

Breeding Herd Input and Summary

Overview

This section includes information on how to use the Breeding Herd Input and Breeding Herd summary section of the spreadsheet. Values entered into the input sheet will automatically calculate and populate the summary section.

How to use



The guide breaks the Breeding Herd Input tab into sections to help further clarify each objective. These sections include:

- General Information
- Short Term Impact
- Long Term Impact - Income
- Long Term Impact - Expenses
- Summary

Screen shots and details of each of these sections are included in the input explanations section of this guide. Remember the instructions tab can help too.

Once completed, the Input Page may be printed; it contains in-depth income and expense details. The Input page can also serve as a good review document, as well as a guide for the correct understanding of inputs. **Remember to set print margins appropriately.**

Please follow the instructions below for the Breeding Herd Input tab.

Input Explanations

General Information

As you complete the worksheet, utilize the yellow boxes to enter in the requested data. It could be in the form of acres, percentages, general text or dollars. Utilize the blue boxes to enter the percentage of dollars that will stay **locally**.

Breeding Herd Input		Pork Checkoff	
Answer the statements below and enter numbers in the yellow boxes		Farm: <i>Cyclone Sows</i>	
Enter the percentage that will stay locally (0%-100%) in the blue boxes		Owner: <i>Cyclone Fans Inc.</i>	
		Address: <i>Cys Flcst, IA</i>	
		Local: <i>4 county area</i>	
		Notes: <i>proposed 3,000 sows</i>	
Breeding/gestation barn cost per space	\$ 593	Number of breeding/gestation spaces	2,520
Breeding/gestation equipment cost per space	\$ 243	Number of farrowing spaces	480
Total investment in breeding/gestation barn and equipm	\$ 2,106,720	Sow inventory	3,000
		Boar inventory	30
Farrowing barn cost per space	\$ 2,638	Replacement rate	45%
Farrowing equipment cost per space	\$ 1,213	Sow mortality rate	2%
Total investment in farrowing barn and equipment	\$ 1,848,480	Number of litters per sow per year	2.50
		Pigs sold per litter	8.50
Total investment in other facilities (GDU, nursery, finisher)	\$ -	Total number of pigs sold per year	57,375
Total investment in all facilities	\$ 3,955,200		
Cost per sow for all facilities and equipment	\$ 1,465		

Every region of the country will have a different definition of “local” dependent on size and structure of counties/state, population and distance from suppliers. Examples might include “60 miles radius,” “tri-county area,” “state,” etc. Regional impacts are considered everything outside of the “local” impact area.

Short Term Impact

This section asks for information concerning construction costs. If details of construction costs are known, complete the following categories to the best known ability or utilize suggested benchmarks.

Short Term impact						
Percent of total construction cost						
Excavation	2-3%	2%	80%	\$ 79,104	\$ 63,283	\$ 15,821
Electrical, plumbing	4-5%	5%	90%	\$ 197,760	\$ 177,984	\$ 19,776
Cement	22-24%	25%	100%	\$ 988,800	\$ 988,800	\$ -
Generator	2-5%	2%	100%	\$ 79,104	\$ 79,104	\$ -
Building	21-23%	21%	5%	\$ 830,592	\$ 41,530	\$ 789,062
Well	2-3%	3%	90%	\$ 118,656	\$ 106,790	\$ 11,866
Slats, equipment, engineering, ventilation	30-42%	40%	80%	\$ 1,572,192	\$ 1,257,754	\$ 314,438
Permits	1-2%	2.0%	10%	\$ 79,104	\$ 7,910	\$ 71,194
Other (incinerator, compost structure, power washer, ...)		0.25%	100%	\$ 9,888	\$ 9,888	\$ -
Total %		100%				
Construction Total				\$ 3,955,200	\$ 2,733,043	\$ 1,222,157
Percent of total construction cost as labor						
	25-30%	20%	50%	\$ 791,040	\$ 395,520	\$ 395,520
Sow herd investment (\$ per gilt, sow and boar)						
	\$	\$ 220	0%	\$ 600,600	\$ -	\$ 600,600

- **Excavation:** Work completed on a manure storage structure. If a lagoon was utilized, the cost will likely be above the 2-3% suggested benchmark. Note: Excavation includes any work completed to bring gravel or other materials brought to the site for construction of roads, etc.
- **Electrical & plumbing:** Both materials and labor
- **Cement:** Total cost of concrete, rebar, prep and labor
- **Generator:** If applicable
- **Building:** Lumber, steel, materials, etc. as well as labor
- **Well:** Drilling, pumps, waterline, materials, installation
- **Slats, equipment, engineering, ventilation:** Gates, feeders, feed lines, waterers, bins, scales, fans/controllers, heaters, etc.
- **Permits:** Construction, water, environmental, manure management
- **Other:** Optional site items: i.e., incinerator, compost structure, power washer, trees, office and supplies/shower; any equipment dedicated to the operation such as a skid loader or tractor
- **Construction labor:** A significant portion of the construction cost is labor. A suggested benchmark is 25-30% of the total construction cost. Labor includes engineers, construction workers, equipment installers, delivery drivers, government (permit issuers) and a whole host of support jobs in sales, service and manufacturing, etc. The labor cost is not in addition to the construction cost, but is an estimate of the amount of labor cost attributed to total cost of the building.

Long-term Impact Income

This section gathers income information. If there is an estimate (or

history) of a per pig income these can be entered as gross revenue or income. In the case of contract production, the annual income is known. Otherwise, the operations prior year income or projected income can be utilized.

Long Term impact					
Income					
Income by owner manager or barn rent per year				\$ -	\$ - \$ -
Average price per pig sold		\$ 34.00	100%	\$ 1,950,750	\$ 1,950,750 \$ -
Cull sow value per sow sold		\$ 120.00	100%	\$ 139,320	\$ 139,320 \$ -
Manure value generated	Go to Manure help sheet: ISU	\$ 60,221	100%	\$ 60,221	\$ 60,221 \$ -
Gross Income Generated				\$ 2,150,291	\$ 2,150,291 \$ -

Most operations value manure at the price of commercially available fertilizers. If known, enter the gross value or utilize the “manure worksheet” tab in the spreadsheet to determine the value (see instructions on page 16 for how to use this tab). This value is dependent on manure analysis, storage type, application method, crop needs, and the value of commercial fertilizer. Whether utilized on the owner’s crop ground or sold, a value is generated and should be credited to the swine operation.

Long Term Impact - Expenses

The production of pigs requires the expenditures of many items. Clarification for the categories has been included below.

- Utilities and insurance:**

If per pig space costs are known for utilities and insurance, enter these. If unknown, you are encouraged to use the benchmarks that have been provided. If a total annual cost for the farm is known, then divide by the pig space capacity as listed at the top of the input worksheet.

$$(\text{Total Annual/Pig Space Capacity} = \text{Pig Space Per Cost})$$

- Maintenance:** Enter maintenance as a percent of your building cost.
- Property taxes:** An operation's specific assessed value and the tax rate can be obtained from the property tax report or by request from the county assessor. These records are often available online if the owner name, site address, or property identification number is known. The line items of the property tax distribution may be helpful talking points as to the direct implications of tax revenue available to your county, township, schools, etc. Assessed value and tax rates vary greatly between states and counties. For Iowa, a "Tax Help Worksheet" is included (see page 17 for instructions on how to use this tab). Iowa assessed values are based on dimensions of the facility and manure storage structure. However, much variability exists amongst assessors so obtaining the operation's specific "property tax report" is ideal.

Additional line items from property tax revenue contribute to: local school districts, county budgets (roads, bridges, administration), Extension, community colleges, township budgets and assessors budget.. Please enter the information if available into the corresponding cells.

- Feed.** Whether purchased, produced on-farm, or delivered via contract production, a feed (grain) value is used. Corn grain and supplement (soybean meal and vitamin/mineral premix) use is tracked. If the main ingredients vary from corn and soybean meal,

Expenses					
Utilities <i>per pig sold</i>	\$1-\$2	\$ 1.00	100%	\$ 57,375	\$ 57,375 \$ -
Insurance <i>per pig sold</i>	\$0.10-\$0.20	\$ 0.15	100%	\$ 8,606	\$ 8,606 \$ -
Maintenance and upkeep (as percent of building cost)	1-2%	1.50%	75%	\$ 59,328	\$ 44,496 \$ 14,832
Property Tax					
Assessed value	<i>Go to state Tax help sheet: IA</i>	\$ 262,000			
Tax rate <i>per thousand dollars</i> of assessed value		\$ 31.69028			
Total taxes paid per year				\$ 8,303	
School		52%	100%	\$ 4,317	\$ 4,317 \$ -
County		38%	100%	\$ 3,155	\$ 3,155 \$ -
Ag. Ext. and TB		1%	100%	\$ 83	\$ 83 \$ -
NEICC		3%	10%	\$ 249	\$ 25 \$ 224
Townships		3%	100%	\$ 249	\$ 249 \$ -
Assessor		3%	100%	\$ 249	\$ 249 \$ -
		100%	Tax Tot	\$ 8,303	\$ 8,079 \$ 224

Feed					
Pounds of feed per sow	1600-2300#	1850			
Pounds of feed per pig sold					
Cost of corn (\$/bu)		\$ 5.00	50%	\$ 360,750	\$ 180,375 \$ 180,375
Cost of supplement (\$/ton) [or add 15% to cost of SBM]		\$ 220.00	50%	\$ 111,111	\$ 55,556 \$ 55,556
Cost of pig feed (\$/ton)		\$ 360.00	25%	\$ 10,328	\$ 2,582 \$ 7,746
Corn acres consumed by sow herd		175	50%	412	206 206
Soybean acres consumed by sow herd		40	50%	561	281 281
Grind/mix delivery (\$/ton)	\$0-\$1?	\$ 10	50%	\$ 25,539	\$ 12,770 \$ 12,770
			Feed Total	\$ 507,728	\$ 251,282 \$ 256,446
Manure Management					
Annual fees (certifications, inspections, monitoring equipment)		\$ 1,000	80%	\$ 1,000	\$ 800 \$ 200
Gallons [or tons] applied	<i>Go to Manure help sheet: ISU</i>	777,800			
Acres fertilized		4,000			194
Application cost per gallon [or ton]		\$ 0.0175	80%	\$ 13,608	\$ 10,886 \$ 2,722
Marketing					
Trucking cost per pig sold	\$0.40-\$0.60	\$ 0.50	50%	\$ 28,688	\$ 14,344 \$ 14,344
Other per pig sold (brokerage, accounting, contract fees, etc.)		\$ 0.50	50%	\$ 28,688	\$ 14,344 \$ 14,344
Mortality					
Mortality management cost per sow space	\$2-\$5	\$ 5.00	50%	\$ 15,000	\$ 7,500 \$ 7,500
Interest					
Interest rate		6.100%			
Dollars borrowed		\$ 1,605,186		\$13,632	
Lifetime interest [number of years financed]	1-20	15	80%	\$ 848,636	\$ 678,909 \$ 169,727
Current year interest [current year in repayment]	1-20	1	80%	\$ 97,916	\$ 78,333 \$ 19,583
Average annual interest			80%	\$ 56,576	\$ 45,261 \$ 11,315
Labor					
Cost per pig sold	\$5-\$10	\$ 7.00	90%	\$ 401,625	\$ 361,463 \$ 40,163
Consulting fees per pig sold (veterinary, nutrition, ...)	\$0.25-\$0.75	\$ 0.50	50%	\$ 28,688	\$ 14,344 \$ 14,344
Breeding/genetics					
Boar/semen cost per litter	\$10-\$16	\$ 13.00	0%	\$ 87,750	\$ - \$ 87,750
Replacement gilt cost [per mature gilt]	\$175-\$250	\$ 220.00	0%	\$ 267,300	\$ - \$ 267,300
Other					
Health care <i>per pig sold</i> (vaccines, treatment, etc.)	\$0.50-\$2.50			\$ -	\$ - \$ -
Bedding, supplies, rodent control, lawn care ... [per year]				\$ -	\$ - \$ -
			Annual Expenses Total	\$ 1,570,261	\$ 838,779 \$ 731,482

substitute appropriately. Enter usage on a per pig sold basis. Ingredient values should be included at current market value, anticipated production cost or purchase cost. Utilize local yields to determine acres consumed annually. A benchmark of per head feed utilization is provided. If a separate grind, mix, delivery charge is known input it. If milling is done internally (on-farm), determine a cost for facilities, equipment, utilities/fuel, trucking and labor. The pre-determined sow diet is based on an 80% corn utilization and 20% supplement use across the annual breeding/gestation/lactation cycle. If the farm specific diet differs significantly from this, adjust either volume or cost accordingly. When considering pig feed cost (creep, nursery, grow-finish diets), these diets are requested on a cost per ton basis and total pounds consumed per pig. The consumption of crop acres is figured with a corn and soy meal based diet. If other ingredients are used, the acres of consumption are in error.

- **Manure management.** Manure management generates both a revenue and cost. Often there are annual compliance or permit fees associated with manure production, storage and land application. If the costs of permits, certifications, inspections, or monitoring equipment are known, enter these. A volume of manure produced is dependent on the type of facility, phase of production, average pig inventory and weight, and feed/water management. (See “Manure Help Worksheet” to estimate volume of production. Instructions for how to use this tab are on page 16 of this guide) Application rates are justified by optimum economic efficiencies obtained within the crop rotation. If a custom applicator is hired, a cost per ton or gallon can be determined for the application. If the application is performed by the farm, value should be determined as the cost of a local applicators charge or as an expenditure for the depreciation of the tractor, equipment, fuel and time use for this activity
- **Marketing.** The primary cost(s) associated with marketing involve transportation of pigs to and from the farm. If trucking cost is known, enter it or if done internally, determine a cost for trucks, fuel and labor. Other costs associated with marketing may include: brokerage, accounting or management fees associated with buying or selling pigs, as well as buying inputs (i.e., feed)
- **Mortality management:** Whether composting, incinerating or rendering, annual costs associated with mortalities are common. Composting costs can include substrate materials, skid loaders and land applications, whereas; incinerating costs include fuel., Rendering fees include a per pig or per pick-up charge.
- **Interest:** Every operation has a cost of financing. For ownership loans enter the interest rate, amount borrowed, length of loan and current year in repayment. The current year, total lifetime, and average annual interest payments are then calculated. Calculations are based off a monthly repayment schedule. For existing facilities, a current loan balance and years remaining may be entered.
- **Labor:** People are employed in numerous aspects of the operation. Direct employment costs include the owner/operator or hired labor. This includes both full-time and part-time sources. Enter the labor cost per pig space. Part-time labor often includes power washing, load out, vaccinating, maintenance, lawn care, records, etc. Swine operations may also employ numerous external advisors throughout the year in the form of consultation and service fees. Consultation and service fees may include: veterinarians, nutritionists, engineers and extension. Enter the consulting fees as a per year cost.
- **Other:** Operation specific costs may include landscaping and lawn care, health care, bedding, supplies, utility tractor, equipment, etc. Extra space devoted to the operation such as home office and farm equipment should be included in either the construction costs or here in the “other” expenses category, if the expense is used and is depreciated as part of the swine operation. Annual operating loan expenses should also be included in this category.

Summary Sheet

At the end of the input section you will find a summary sheet. Selected inputs can be checked so that they appear on the printable “Breeding Herd Summary.” Placing a check in the green boxes signals the desired boxes to appear on the summary sheet. Only those items checked in the input tab will show up on the summary sheet. Click on the “Go to Breeding Herd Summary” box to be automatically directed to the summary sheet

Place an "x" in the green boxes for desired information to appear on the Summary sheet.		
<input checked="" type="checkbox"/>	Number of sows housed	2,700
<input checked="" type="checkbox"/>	Cost of construction or current value	\$ 3,955,200
<input checked="" type="checkbox"/>	From the total cost of construction this amount adds to the local economy	\$ 2,733,043
<input checked="" type="checkbox"/>	From the total cost of construction this amount adds to the regional economy	\$ 1,222,157
<input checked="" type="checkbox"/>	From the construction cost this labor amount adds to the local economy	\$ 395,520
<input checked="" type="checkbox"/>	From the construction cost this labor amount adds to the regional economy	\$ 395,520
<input checked="" type="checkbox"/>	The gross revenue for sow farm operation adds to the local economy	\$ 2,090,070
<input checked="" type="checkbox"/>	The gross revenue for sow farm operation adds to the regional economy	\$ -
<input checked="" type="checkbox"/>	The cost savings from nutrients utilized adds to the local economy	\$ 60,221
<input checked="" type="checkbox"/>	Insurance, utilities, maintenance and property taxes add to the local economy	\$ 118,556
<input checked="" type="checkbox"/>	The cost of nutrient application adds to the local economy	\$ 10,886
<input checked="" type="checkbox"/>	The cost of nutrient application adds to the regional economy	\$ 2,722
<input checked="" type="checkbox"/>	The nutrients produced fertilize this many acres each year	194
<input checked="" type="checkbox"/>	The number of acres needed to provide corn for the sow herd	412
<input checked="" type="checkbox"/>	The number of acres needed to provide soybean meal for the sow herd	561
<input checked="" type="checkbox"/>	The amount paid to local feed supplier for grind, mix and delivery	\$ 12,770
<input checked="" type="checkbox"/>	The amount paid to a regional feed supplier for grind, mix and delivery	\$ 12,770
<input checked="" type="checkbox"/>	The amount of interest paid to local financial institutions in current year	\$ 78,333
<input checked="" type="checkbox"/>	The amount of interest paid to regional financial institutions in current year	\$ 19,583
<input checked="" type="checkbox"/>	Labor cost to remain in the local economy	\$ 375,806
<input checked="" type="checkbox"/>	Labor cost to remain in the regional economy	\$ 54,506
<input checked="" type="checkbox"/>	Total gross income remaining in the local economy each year	\$ 2,150,291
<input checked="" type="checkbox"/>	Total gross income remaining in the regional economy each year	\$ -
<input checked="" type="checkbox"/>	Annual expenses that add to the local economy	\$ 838,779
<input checked="" type="checkbox"/>	Annual expenses that add to the regional economy	\$ 731,482

Go to
Breeding Herd
Summary

Summary Explanations

Instructions	Grow-Finish Input	Grow-Finish Summary	Brdng Herd Input	Brdng Herd Summary	Manure help sheet	Tax help sheet (IA)	Resources
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These components are those that are deemed most pertinent to your specific operation and display implications for the local and/or regional economies. If you would like to alter the selected inputs that appear on this tab, please return to the bottom of the “Breeding Herd Input” tab and select or de-select your desired summary items.

Breeding Herd Summary		
<p>There is a real need to grow rural economies. This growth needs to be environmentally, socially, and economically sustainable. This growth needs to be diverse, including components such as agriculture, manufacturing, construction, transportation, tourism, public services, energy, and retail marketing. One key to getting our best youth to stay in rural areas is to ensure that there are jobs and a high quality of life. In an agriculture state, rural land will be agronomic in nature, based on the growth of crops such as corn, soybeans and other emerging crops. An integrated crop/livestock industry has great potential to grow rural economies in a sustainable and profitable manner.</p> <p>The farm at issue consists of the following details and adds value to the community in numerous ways as listed below.</p>		
		Cyclone Sows
• Number of sows housed	\$	2,700
• Cost of construction or current value	\$	3,955,200
• From the total cost of construction this amount adds to the local economy	\$	2,733,043
• From the total cost of construction this amount adds to the regional	\$	1,222,157
• From the construction cost this labor amount adds to the local economy	\$	395,520
• From the construction cost this labor amount adds to the regional	\$	395,520
• The gross revenue for sow farm operation adds to the local economy	\$	2,090,070
• The gross revenue for sow farm operation adds to the regional economy	\$	-
• The cost savings from nutrients utilized adds to the local economy	\$	60,221
• Insurance, utilities, maintenance and property taxes add to the local	\$	118,556
• The cost of nutrient application adds to the local economy	\$	10,886
• The cost of nutrient application adds to the regional economy	\$	2,722
• The nutrients produced fertilize this many acres each year		194
• The number of acres needed to provide corn for the sow herd		412
• The number of acres needed to provide soybean meal for the sow herd		561
• The amount paid to local feed supplier for grind, mix and delivery	\$	12,770
• The amount paid to a regional feed supplier for grind, mix and delivery	\$	12,770
• The amount of interest paid to local financial institutions in current year	\$	78,333
• The amount of interest paid to regional financial institutions in current year	\$	19,583
• Labor cost to remain in the local economy	\$	375,806
• Labor cost to remain in the regional economy	\$	54,506
• Total gross income remaining in the local economy each year	\$	2,150,291
• Total gross income remaining in the regional economy each year	\$	-

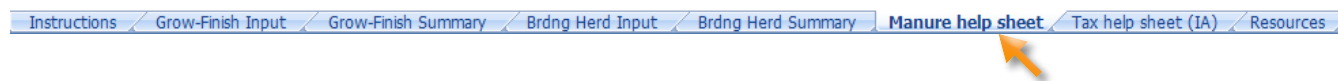
Manure Help Sheet

Overview

This section includes information on how to use the Manure Help Sheet section of the spreadsheet.

How to use

Manure value is categorized as a value generated/ "savings" credit to the farm enterprise. If it is sold as income, this should be added to the ownership income stream within the summary.



Manure Help Sheet

		Value, \$/lb.													
Manure value		N	P ₂ O ₅	K ₂ O											
		\$ 0.55	\$ 0.65	\$ 0.55											

MANAGEMENT SYSTEM
LIQUID, PIT

	# head capacity	N	P ₂ O ₅	K ₂ O	days building full	total manure produced (gals.)	Value, \$/nutrient			Total Value, \$	
							N	P ₂ O ₅	K ₂ O		
6 Wean-Finish (dry)	1120	49	40	29	0.9	360	362,880	\$ 5,790	\$ 9,405	\$ 5,798	\$ 25,002
9 Farrow-nursery ^a	220	27	23	22	2.2	360	174,240	\$ 2,587	\$ 2,605	\$ 2,308	\$ 7,301
3 Grow-finish, 150 lbs. (dry feed)	-	50	42	30	1.2	360	-	\$ -	\$ -	\$ -	\$ -
10 User Values #3	-	22	22	20	2.5	360	-	\$ -	\$ -	\$ -	\$ -
Totals						532,120	\$ 12,967	\$ 12,040	\$ 7,896	\$ 32,002	

MANAGEMENT SYSTEM
LIQUID, PIT

	N	P ₂ O ₅	K ₂ O	gals./day
1 Nursery, 25 lbs.	35	20	20	0.2
2 Grow-finish, 150 lbs. (wet/dry)	50	40	45	0.9
3 Grow-finish, 150 lbs. (dry feed)	50	42	30	1.2
4 Grow-finish, 150 lbs. (earthen storage)	32	22	20	1.2
5 Wean-Finish (wet/dry)	56	38	43	0.7
6 Wean-Finish (dry)	49	40	29	0.9
7 Gestation, 400 lbs.	25	25	25	3
8 Sow and litter ^a , 450 lbs.	25	20	15	3.5
9 Farrow-nursery ^a	27	23	22	2.2
10 Farrow-finish ^a	44	32	24	9.4
11 User Values #1	22	22	20	2.5
12 User Values #2	22	22	20	2.5
13 User Values #3	22	22	20	2.5

^a Sow and litter figures are per farrowing space.
^a Farrow-nursery figures are per sow in breeding herd and include one farrowing sow, five gestation sows and nine nursery pig spaces.
^a Farrow-finish figures are per sow in breeding herd and include one farrowing sow, five gestation sows, nine nursery and 36 finishing spaces.

Source: Managing Manure Nutrients for Crop Production, PM 1811 Iowa State University Extension

The instructions tab of the spreadsheet has step by step instructions. Use these steps to fill out the Manure Help Sheet.

How to use the Manure help sheet

- 1 - Go to the Manure help sheet
- 2 - Enter the price of N, P₂O₅, and K₂O in \$ per pound.
- 3 - Go to the yellow boxes.

Select the type of barn (from drop down menu) for determining the nutrient value. In the box to the right of the drop down menu enter the number of head in the barn at one time capacity. Enter zero when no pigs are in a building. Enter the number of days the building is full. If manure test results are available, change manure values and volume appropriately.

- 4 - Transfer manure values to the Input sheet.

Tax Help Sheet

Overview

This section includes information on how to use the Tax Help Sheet section of the spreadsheet.

How to use

Instructions Grow-Finish Input Grow-Finish Summary Brdng Herd Input Brdng Herd Summary Manure help sheet **Tax help sheet (IA)** Resources

This section provides support for Iowa based facilities. In addition to the screen shot above, there are also look up tables to aid in the completion of this section. Use these tables to complete the Tax Help Sheet.

Iowa Tax Help Sheet	
Quick-calc:	
Length of building	150
Width of building	100
Square feet of building	15,000
Needed Input: (select closest answer from pull down list)	
Square feet of building	8,000
Type of building	Gestation
Value as estimated by assessor	\$ 203,200
Quick-calc:	
Pit length	200
Pit width	50
Pit depth	8 assumed
Square feet of pit area	10,000
Needed Input: (select closest answer from pull down list)	
Pit width	> 36 ft
Square foot of area of pit	3,000
Deduct polution control exemptior	\$ 23,550
Estimated assesed value of building	\$ 44,913
Number of buildings	3
	\$ 134,738

transfer this value to the "Assessed value" a Property Tax expense input

The instructions tab of the spreadsheet has step by step instructions. Use these steps to fill out the Tax Help Sheet.

How to use the Tax help sheet **ONLY APPLICABLE TO IOWA**

- 1 - Go the the Tax help sheet.
- 2 - Enter the length and width of the building.
- 3 - Select the number closest to the square feet of your building. (drop down menu)
- 4 - Select the type of building. (drop down menu)
- 5 - Enter the pit length and pit width. (Pit depth is set at 8 feet)
- 6 - Select the pit length and pit width. (drop down menu)
- 7 - Transfer the estimated tax assesed value to the Input sheet.

Resources

Overview

This section includes information on how to use the Resources section of the spreadsheet.

How to use

Instructions	Grow-Finish Input	Grow-Finish Summary	Brdng Herd Input	Brdng Herd Summary	Manure help sheet	Tax help sheet (IA)	Resources
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The Resources area provides links to available support of the completion of the Swine Building Impact Spreadsheet. Click on the links in the tab to be directed to additional support.

Resources for Economic Impact of Swine Farms

<http://www.oznet.ksu.edu/library/agec2/mf2153.pdf>

Farrow-to-Weaned Pig Cost-Return Budget. Farm Management Guide MF-2153

Department of Agricultural Economics — www.agmanager.info

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Swine Nutrition Specialist

Swine Specialist

Farm Management

College of Veterinary Medicine

<http://www.oznet.ksu.edu/library/agec2/mf292.pdf>

Farrow to Finish Swine Cost-Return Budget. Farm Management Guide MF-292.

Department of Agricultural Economics — www.agmanager.info

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