



Calculating Production Costs to Determine Your Bottom Line

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Starting Point: Goal is to Make a Profit

- Pork production can be a very enjoyable career
- But we live in a 'capitalist' society, we still have to support our family
- This requires, over a period of time, that pork production makes a profit
- History has shown that Iowa is a great place to raise pigs and prosper

Pork Production has Changed Over the Past Years



- At one time, the pork producer ran a diversified business (multiple crops, multiple livestock species) and could just focus on raising pigs and crops
- Now, all of agriculture, all businesses have changed
- “Wal-Mart” effect

Pork Production has Changed Over the Past Years



- Consumer demands an acceptable quality commodity product, at the lowest price
- So as price lowers, the pork producer has taken the brunt of the effect
- Smaller profit margins per unit of production have demanded the need for more business skills and orientation



Effect on Pork Production (and Pork Producers)

- If the profit per pig is smaller, then the production unit must be larger to generate the same profit for the producer
- The producer must also be more 'efficient' at pork production
- Specialization can enhance efficiency
- Result = shift away from diversified farms



New Demands on Pork Producer

- Larger size to capture efficiencies
- More specialized production skills
- More management skills (now manage people and pigs)
- More business orientation
- Use of computer technology
- Need for software to manage the farm, manage the business, for decision making and analysis



Today's Discussion

- Focus on cost of production components that influence profit
- Also, consider the production performance of the farm (higher performance lowers per unit cost)
- Package this so the producer can apply their 'farm specific' information so analysis and decisions can apply better



Cost of Production Comes From Multiple Components

- **Feed costs:**
 - *function of feed price, feed conversion, pigs marketed/year, mortality rate, growth rate,*
- **Non-feed costs:**
 - *Fixed (facilities, etc), Variable (ins., util., supplies, repairs, taxes, etc), Professional fees (mgt, acct.), Vet/Medicine, Labor, Breeding/Genetic costs, death losses, Trucking, and more*



How Do You Measure ?

- **Feed costs:** *function of feed price, feed usage, feed conversion, and pigs marketed/sow/year*
 - Business records, computerized sow management systems and spreadsheets
- **Non-feed costs:** *Labor, Fixed (facilities, etc), Variable (ins., util., supplies, repairs, taxes, etc), Professional fees (mgt, acct.), Vet/Medicine, Breeding/Genetic costs, death losses, Trucking, and more*
 - *Business records*



Bottom Line

- In order for the producer to objectively examine their cost of production and performance,
- You must have these records in a usable format
- And access to 'decision making' tools that allow for farm specificity



Pig Profit Tracker

Pig COP/Profit Estimator

- Excel spreadsheet
- Enter production information
 - Farrowing from sow management system
 - Post-weaning from spreadsheet summary
- Enter cost of production estimates for primary component of costs (per pig)
- Enter feed component prices of interest
- Enter anticipated market return
- Program estimates the net profit/loss per pig
- Can change inputs to see impact on net profit



Inputs From Records



Pig Profit Tracker

Breed - Finish v.3.0

Farm Scenario:

Pigs farrowed
April 2008

IOWA STATE UNIVERSITY - Iowa Pork Industry Center - (515) 294-4103, www.ipic.iastate.edu

1/19/09

Inputs	Corn price (\$/bu)	5.00	Weaning wt (lb)	13	Litters/sow/year	2.3
	SBM (\$/ton)	350.00	Sale/marketing wt (lb)	270	Pigs weaned/litter	9
	VTM (\$/ton)	624.00	Wean - Finish F:G (lb, live)	2.85	Replacement cost (\$/gilt)	150.00
	Additive (\$/lb)	2.00	Wean - Finish mortality (%)	8.00	Cull sow sale weight (lb)	450
	Carcass dress (%)	74.5	Avg death loss wt (lb)	100	Annual replacement rate (%)	50
					Sow mortality rate (%)	8



Inputs From Records

Farrowing		\$ / pig weaned	
Gilt Dev purchase cost/female genetics			\$ 3.62
Breeding cost/ semen & boars			\$ 1.65
Vet / Medicine			\$ 1.22
Labor			\$ 3.90
Fixed (building, taxes, rent, pymt etc)			\$ 2.30
Variable (ins, util, repairs, misc.)			\$ 6.25
Management / accounting fees			\$ 1.00
GMD average cost per ton	(\$/ton)	12.00	\$ 0.67
Cull sow value	(\$/lb)	0.26	\$ (2.37)
Total non-feed costs			\$ 18.24



Inputs From Records

Farrowing				
	Lact. (days)	Days/yr	Daily (lb)	Total (lb)
Lactation	19	44	12.3	537
Gestation		321	5.5	1766
Total >>	Sow feed per sow per year			2304
	Sow feed per pig weaned			111
	%	Lb / pig	\$ / lb	\$ / pig
◀ Corn	71.00%	79.0	\$ 0.09	\$ 7.05
SBM	25.50%	28.4	\$ 0.18	\$ 4.97
VTM	3.30%	3.7	\$ 0.31	\$ 1.15
Additive	0.20%	0.2	\$ 2.00	\$ 0.45
Total feed cost per pig weaned				\$ 13.61
		Lb / pig	\$ / lb	\$ / pig
Prewean Pig Feed		1	\$ 0.50	\$ 0.50
Total SEW pig feed cost				\$ 14.11



Inputs From Records

Post-Weaning to Finish		\$ / pig
Death loss		\$ 3.00
Vet / Medicine		\$ 2.10
Labor		\$ 2.60
Fixed (building, taxes, rent, pymt etc)		\$ 10.20
Variable (ins, util, repairs, misc.)		\$ 16.75
Management / accounting fees		\$ 1.50
Trucking		\$ 3.00
GMD average cost per ton	(\$/ton) 12.00	\$ 4.39
Other		\$ -
Total non-feed costs		\$ 43.54



Inputs From Records

Post-Weaning to Finish

	% age	Lb / pig	\$ / lb	\$ / pig
Corn	76.58%	560.9	\$ 0.09	\$ 50.08
SBM	21.00%	153.8	\$ 0.18	\$ 26.92
VTM	2.27%	16.6	\$ 0.31	\$ 5.19
Additive	0.15%	1.1	\$ 2.00	\$ 2.20
Paylean etc. \$/hd				\$ -
Total		732.5		\$ 84.38

Cost per head-- summary breakdown

	Farrowing	Wean-Fin	Total
Total feed cost	\$ 14.11	\$ 84.38	\$ 98.50
Total non-feed cost	\$ 18.24	\$ 43.54	\$ 61.78
Total >>	\$ 32.35	\$ 127.93	\$ 160.28



Outputs From Spreadsheet

Miscellaneous Outputs

Farrowing corn (bu/hd)	1.41	}	11.43
Finishing corn (bu/hd)	10.02		
Wean-finish +deads F:G (lb)			2.76
Feed cost + deads (\$/hd/day)			2.55
Wean-finish feed (\$/ton)			230.41
Pre-wean feed (\$/ton)			251.35



Outputs From Spreadsheet

Profit/loss

	\$/cwt carcass	per head
Income - (6-mo expected price)	\$ 67.00	\$ 134.77
Expense - Feed	\$ 48.97	\$ 98.50
- Non-feed		\$ 61.78
Total	\$ 79.68	\$ 160.28
Profit/loss	\$ (12.68)	\$ (25.51)
<i>Profit/loss attributed to farrowing</i>		\$ (5.15)
<i>Profit/loss attributed to finishing</i>		\$ (20.36)

Scenarios To Examine Using Pig Profit Tracker®



- Current situation at your farm
- Effect of increasing reproductive rate
- Renting new facilities with higher cost, but better performance
- Raising market weight but with higher feed conversion rate
- Effect of improving a performance trait
- Effect of 'locking in' inputs and/or return



Demonstrate Pig Profit Tracker

- Available at www.ipic.iastate.edu
- Iowa Pork Industry Center
- 800-808-7675



Scenarios Shown in Talk

- Start with assumptions in “Estimated Returns from Farrow-Finish hogs in Iowa, born April 2008
- Use assumptions for pigs born in Jan 2009 (lower feed costs, higher market price)
- Show impact of increasing reproductive rate (20.7 PSY to 24.0 PSY)



Scenarios Shown in Talk

- Show change if replacement gilt price was increased (\$150 to \$200)
- Show change if sow mortality increased (8 to 10%)
- Show change if annual replacement rate increased (50 to 60%)
- Show change if FCR was improved (2.85 to 2.75)



Scenarios Shown in Talk

- Show change if producer leases older WF facilities at a lower cost (10.20 fixed to 8.20 fixed), but FCR changed from 2.75 to 2.90
- Show change if added Paylean at a cost of \$2/head, but FCR improved from 2.90 to 2.80
- Show change if WF mortality increased from 8 to 9%



Pig Profit Tracker

Farm Scenario:

Breed - Finish v.3.0

IOWA STATE UNIVERSITY - Iowa Pork Industry Center - (515) 294-4103, www.ipic.iastate.edu 1/19/09

Inputs	Corn price (\$/bu)	5.00	Weaning wt (lb)	13	Litters/sow/year	2.3
	SBM (\$/ton)	350.00	Sale/marketing wt (lb)	270	Pigs weaned/litter	9
	VTM (\$/ton)	624.00	Wean - Finish F:G (lb, live)	2.85	Replacement cost (\$/gilt)	150.00
	Additive (\$/lb)	2.00	Wean - Finish mortality (%)	8.00	Cull sow sale weight (lb)	450
	Carcass dress (%)	74.5	Avg death loss wt (lb)	100	Annual replacement rate (%)	50
					Sow mortality rate (%)	8

Farrowing		\$ / pig weaned		Post-Weaning to Finish		\$ / pig	
Gilt Dev purchase cost/female genetics		\$ 3.62		Death loss		\$ 3.00	
Breeding cost/ semen & boars		\$ 1.65		Vet / Medicine		\$ 2.10	
Vet / Medicine		\$ 1.22		Labor		\$ 2.60	
Labor		\$ 3.90		Fixed (building, taxes, rent, pymt etc)		\$ 10.20	
Fixed (building, taxes, rent, pymt etc)		\$ 2.30		Variable (ins, util, repairs, misc.)		\$ 16.75	
Variable (ins, util, repairs, misc.)		\$ 6.25		Management / accounting fees		\$ 1.50	
Management / accounting fees		\$ 1.00		Trucking		\$ 3.00	
GMD average cost per ton (\$/ton)	12.00	\$ 0.67		GMD average cost per ton (\$/ton)	12.00	\$ 4.39	
Cull sow value (\$/lb)	0.26	\$ (2.37)		Other		\$ -	
Total non-feed costs		\$ 18.24		Total non-feed costs		\$ 43.54	

Farrowing				Post-Weaning to Finish				
Lact. (days)	Days/yr	Daily (lb)	Total (lb)	% age	Lb / pig	\$ / lb	\$ / pig	
Lactation	19	44	12.3	537	Corn	76.58%	560.9 \$ 0.09 \$ 50.08	
Gestation		321	5.5	1766	SBM	21.00%	153.8 \$ 0.18 \$ 26.92	
Total >>	Sow feed per sow per year			2304	VTM	2.27%	16.6 \$ 0.31 \$ 5.19	
	Sow feed per pig weaned			111	Additive	0.15%	1.1 \$ 2.00 \$ 2.20	
	%	Lb / pig	\$ / lb	\$ / pig	Paylean etc. \$/hd		\$ -	
Corn	71.00%	79.0	\$ 0.09	\$ 7.05	Total	732.5	\$ 84.38	
SBM	25.50%	28.4	\$ 0.18	\$ 4.97	Cost per head-- summary breakdown			
VTM	3.30%	3.7	\$ 0.31	\$ 1.15		Farrowing	Wean-Fin	Total
Additive	0.20%	0.2	\$ 2.00	\$ 0.45	Total feed cost	\$ 14.11	\$ 84.38	\$ 98.50
Total feed cost per pig weaned				\$ 13.61	Total non-feed cost	\$ 18.24	\$ 43.54	\$ 61.78
	Lb / pig	\$ / lb	\$ / pig		Total >>	\$ 32.35	\$127.93	\$160.28
Prewean Pig Feed	1	\$ 0.50	\$ 0.50					
Total SEW pig feed cost				\$ 14.11				

Miscellaneous Outputs				Profit/loss		
Farrowing corn (bu/hd)	1.41	} 11.43		\$/cwt carcass	per head	
Finishing corn (bu/hd)	10.02			Income - (6-mo expected price)	\$ 67.00	\$134.77
Wean-finish +deads F:G (lb)	2.76		Expense - Feed	\$ 48.97	\$ 98.50	
Feed cost + deads (\$/hd/day)	2.55		- Non-feed		\$ 61.78	
Wean-finish feed (\$/ton)	230.41		Total	\$ 79.68	\$160.28	
Pre-wean feed (\$/ton)	251.35		Profit/loss	\$ (12.68)	\$ (25.51)	
			Profit/loss attributed to farrowing		\$ (5.15)	
			Profit/loss attributed to finishing		\$ (20.36)	

April 2008 Example



Pig Profit Tracker

Farm Scenario:

Breed - Finish v.3.0

IOWA STATE UNIVERSITY - Iowa Pork Industry Center - (515) 294-4103, www.ipic.iastate.edu 1/19/09

Inputs	Corn price (\$/bu)	4.05	Weaning wt (lb)	13	Litters/sow/year	2.3
	SBM (\$/ton)	315.00	Sale/marketing wt (lb)	270	Pigs weaned/litter	9
	VTM (\$/ton)	624.00	Wean - Finish F:G (lb, live)	2.85	Replacement cost (\$/gilt)	150.00
	Additive (\$/lb)	2.00	Wean - Finish mortality (%)	8.00	Cull sow sale weight (lb)	450
	Carcass dress (%)	74.5	Avg death loss wt (lb)	100	Annual replacement rate (%)	50
					Sow mortality rate (%)	8

Farrowing		\$ / pig weaned		Post-Weaning to Finish		\$ / pig	
Gilt Dev purchase cost/female genetics		\$ 3.62		Death loss		\$ 3.00	
Breeding cost/ semen & boars		\$ 1.65		Vet / Medicine		\$ 2.10	
Vet / Medicine		\$ 1.22		Labor		\$ 2.60	
Labor		\$ 3.90		Fixed (building, taxes, rent, pymt etc)		\$ 10.20	
Fixed (building, taxes, rent, pymt etc)		\$ 2.30		Variable (ins, util, repairs, misc.)		\$ 16.75	
Variable (ins, util, repairs, misc.)		\$ 6.25		Management / accounting fees		\$ 1.50	
Management / accounting fees		\$ 1.00		Trucking		\$ 3.00	
GMD average cost per ton (\$/ton)	12.00	\$ 0.67		GMD average cost per ton (\$/ton)	12.00	\$ 4.39	
Cull sow value (\$/lb)	0.26	\$ (2.37)		Other		\$ -	
Total non-feed costs		\$ 18.24		Total non-feed costs		\$ 43.54	

Farrowing				Post-Weaning to Finish				
Lact. (days)	Days/yr	Daily (lb)	Total (lb)	% age	Lb / pig	\$ / lb	\$ / pig	
Lactation	19	44	12.3	537	Corn	76.58%	560.9 \$ 0.07 \$ 40.57	
Gestation		321	5.5	1766	SBM	21.00%	153.8 \$ 0.16 \$ 24.23	
Total >>	Sow feed per sow per year			2304	VTM	2.27%	16.6 \$ 0.31 \$ 5.19	
	Sow feed per pig weaned			111	Additive	0.15%	1.1 \$ 2.00 \$ 2.20	
	%	Lb / pig	\$ / lb	\$ / pig	Paylean etc. \$/hd		\$ -	
Corn	71.00%	79.0	\$ 0.07	\$ 5.71	Total	732.5	\$ 72.18	
SBM	25.50%	28.4	\$ 0.16	\$ 4.47	Cost per head-- summary breakdown			
VTM	3.30%	3.7	\$ 0.31	\$ 1.15		Farrowing	Wean-Fin	Total
Additive	0.20%	0.2	\$ 2.00	\$ 0.45	Total feed cost	\$ 12.28	\$ 72.18	\$ 84.45
Total feed cost per pig weaned				\$ 11.78	Total non-feed cost	\$ 18.24	\$ 43.54	\$ 61.78
	Lb / pig	\$ / lb	\$ / pig		Total >>	\$ 30.51	\$ 115.72	\$ 146.23
Prewean Pig Feed	1	\$ 0.50	\$ 0.50					
Total SEW pig feed cost				\$ 12.28				

Miscellaneous Outputs				Profit/Loss			
Farrowing corn (bu/hd)	1.41	} 11.43			\$/cwt carcass	per head	
Finishing corn (bu/hd)	10.02			Income - (6-mo expected price)	\$ 75.00	\$ 150.86	
Wean-finish +deads F:G (lb)	2.76		Expense - Feed	\$ 41.98	\$ 84.45		
Feed cost + deads (\$/hd/day)	2.18		- Non-feed		\$ 61.78		
Wean-finish feed (\$/ton)	197.08		Total	\$ 72.70	\$ 146.23		
Pre-wean feed (\$/ton)	218.63		Profit/loss	\$ 2.30	\$ 4.63		
			Profit/loss attributed to farrowing		\$ 0.97		
			Profit/loss attributed to finishing		\$ 3.66		

Jan 2009
farrowed example



Summary

- Producer needs to accurately know their cost of production (total + components)
- Producer needs to accurately know their herd performance (total + components)
- This requires a combination of records
 - Business records
 - Sow management system records
 - Post-weaning performance records

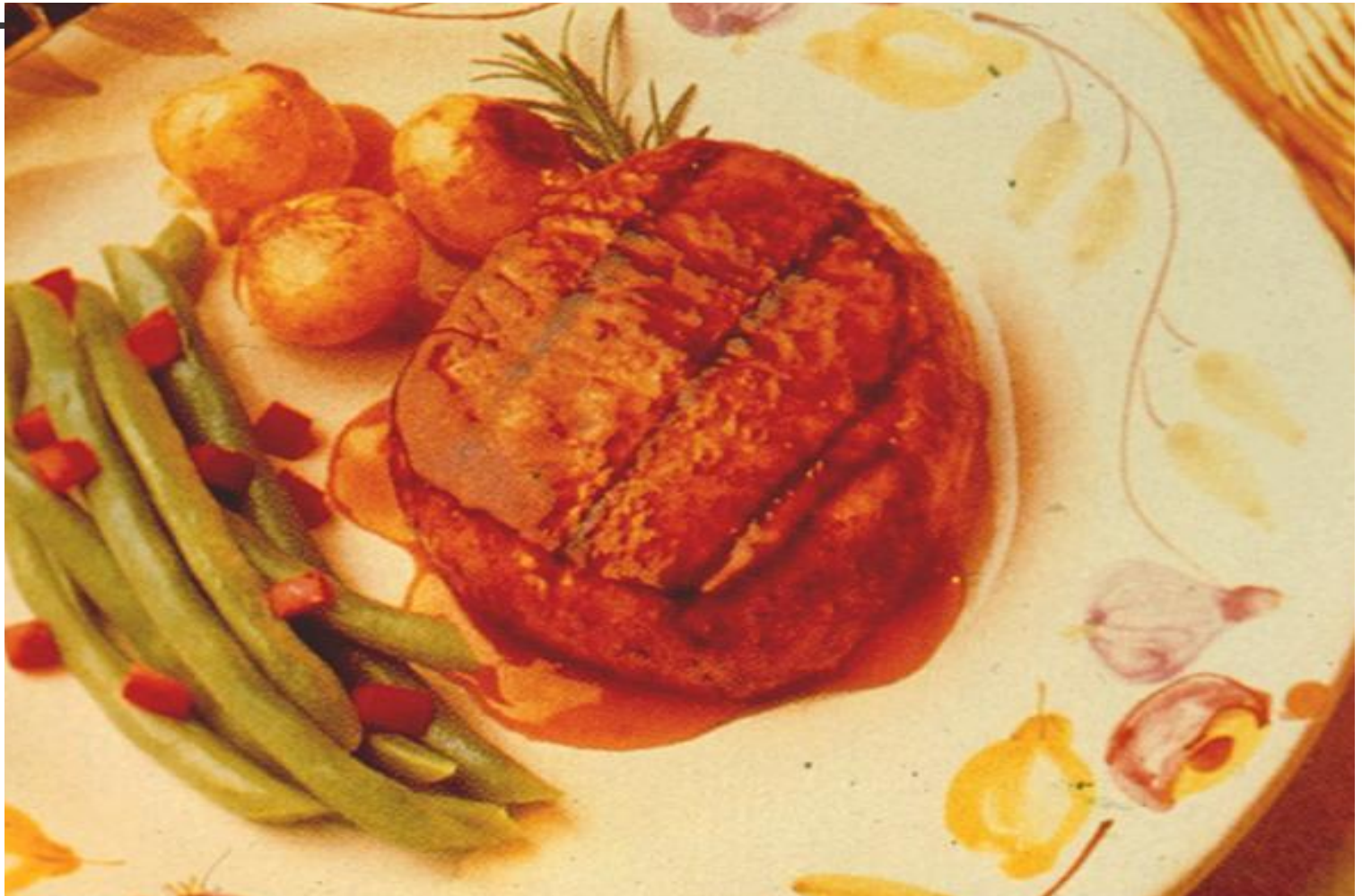


Summary

- Analysis of these records using 'decision' based software tools will allow the producer to
 - Consider different options concurrently that individually influence profit,
 - So the producer can see the impact on profit or loss
- Accuracy of any software is dependent on the accuracy of the information used in the analysis



Thank You For Your Attention



Iowa Pork Industry Center