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

- Breed - Finish
- Pigs farrowed April 2008
- Inputs from records:
  - Pigs farrowed: 200
  - Average pig weight: 250 lbs
  - Feed conversion: 2.9
  - Feed price: $1.50/lb
  - Market price: $2.50/lb
  - Death loss: 5%
  - Litter size: 12
  - Labor costs: $10/hour
  - Equipment costs: $50,000
  - Replacement cost: $100/baby
  - Veterinary costs: $500
  - Miscellaneous costs: $200

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Inputs From Records

**Farrowing**  
$ / pig weaned

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gilts, Dwe purchase cost/female genetics</td>
<td>2.82</td>
</tr>
<tr>
<td>Breeding cost/ semen &amp; boars</td>
<td>1.85</td>
</tr>
<tr>
<td>Vet / Medicine</td>
<td>1.22</td>
</tr>
<tr>
<td>Labor</td>
<td>3.90</td>
</tr>
<tr>
<td>Fixed (building, taxes, rent, pymt etc)</td>
<td>2.30</td>
</tr>
<tr>
<td>Variable (ins, utl, repairs, misc.)</td>
<td>8.35</td>
</tr>
<tr>
<td>Management / accounting fees</td>
<td>1.00</td>
</tr>
<tr>
<td>GMD average cost per ton ($)/ton</td>
<td>12.00</td>
</tr>
<tr>
<td>Cull sow value</td>
<td>0.28</td>
</tr>
</tbody>
</table>

Total non-feed costs $ 18.24

Outputs From Spreadsheet

**Profit/Loss**

| Income - (B-mg expected price) | $67.99 | $134.77 |
| Expense - Feed                 | $49.97 | $39.50  |
| - Non-feed                     |        | $61.70  |
| Total                          | $79.88 | $180.28 |

Profit/Loss

| Profit/Loss attributed to farrowing | $6.16  |
| Profit/Loss attributed to finishing| $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

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%

Demonstrate Pig Profit Tracker

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

Example

*Image of Pig Profit Tracker*
Inputs
- Corn price ($/bu): 4.05
- Weaning wt (lb): 20.7
- Litters/sow/year: 2.3
- SBM ($/ton): 315.00
- Sale/marketing wt (lb): Pigs weaned/litter 9
- VTM ($/ton): 624.00
- Wean - Finish F:G (lb, live): Replacement cost ($/gilt) 150.00
- Additive ($/lb): 2.00
- Wean - Finish mortality (%): Cull sow sale weight (lb) 450
- Carcass dress (%): 74.5
- Avg death loss wt (lb): Annual replacement rate (%): 50
- Sow mortality rate (%): 8

Gilt Dev purchase cost/female genetics: 3.62 $    Death loss 3.00 $
- Breeding cost/ semen & boars: 1.65 $
- Vet / Medicine: 1.22 $    Labor: 3.90 $
- 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

ices per sow per year
- Total >
- Total non-feed costs: 18.24 $   43.54 $

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