

Opportunities in Pork Production

Beginning Farmers Conference
February 3, 2007

Colin Johnson
Iowa Pork Industry Center
Iowa State University

What is the IPIC?

It is a unit of faculty, field specialists and staff at ISU that is designed to work across the Ag College departments of Animal Science, Ag Economics, Ag and Biosystems Engineering and the College of Vet Medicine in assisting technology transfer to the pork industry of Iowa

Beginning Farmer Conference

Mission of the IPIC

“To promote efficient pork production technologies in Iowa, maintain Iowa’s pork industry leadership and strengthen rural development efforts”

Beginning Farmer Conference

Think Iowa’s got pigs?

Beginning Farmer Conference

Denmark: 2.3 pigs/acre Iowa: .56 pigs/acre

	Iowa	Denmark
Pig inventory (million)	16.1	13.3
Sows	1.1	1.4
Pigs	15.0	11.9
Pig crop (million)	18.3	26.2
Live exports (million)	16.3	0
Live imports (million)	0	2.3
Annual production (million)	29.6	28.2
Annual slaughter (million)	29.8	22.9
Harvest weight (lbs)	268	227
Human population (million)	2.9	5.4
Area (sq miles)	56,240	16,629
Food suitable farmland (million acres)	26.8	5.7
Pig density (per acre)	0.56	2.30
(per sq mile)	388	1488

We’ve more room for pigs

- Feed grains
- Manure nutrients
- Harvest capacity
- Pig knowledge

Beginning Farmer Conference

Iowa Assets in the Pork Industry

- Tradition of a successful swine industry
- Abundant, high quality grain production
- Farmers who need valuable “nutrient resources”
- Packing industry
- Iowa State University and IPIC
- IPPA and NPPC
- Low cost pork production capability

Beginning Farmer Conference

Iowa Pork Production

- Currently farrow ~ 70% of pigs fed in state
 - import >8 million/yr (50% from Canada)
- Production shifting around the country (again)
 - Two plants recently announced closures (MS & Quebec)
 - Smithfield, Maple Leaf & others announced 10 yr phase in to group gestation
 - North Carolina won't see growth
- More production will move to Iowa
 - **Must be economically, socially and environmentally sustainable**

Beginning Farmer Conference

Iowa Pork Production

Growth in commodity production should be done via "Low Density Expansion"



2400 hd

Swine finishing model

- 2400 pigs, 45 – 270 lb
 - 2.4 turns = 5760 pigs/ year (140 days/ group)
 - Consume 1900 ton feed / yr
 - Corn from ~288 acres; soybeans from ~192
- Manure value
 - 19 lb N, 12 lb P₂O₅, 10 lb K₂O / space /yr
 - =22.3 ton /yr N, 14.4 ton P, 12 ton K (\$24,675 value)
 - \$.26/lb anhydrous, \$.27/lb phosphate, \$.22/lb potassium chloride)
 - Meets nutrient needs of 241ac corn /yr (170 #N)

10 pig spaces will supply 170 lbs N to fertilize 1 acre of corn

Beginning Farmer Conference

Profit in Pork Production?

Annual profits in the pork industry (per hd sold)

	farrow-finisher	farrow-feeder	feeder-finish	Base price (\$/hd)
1996	\$6.18	(\$5.03)	\$8.44	\$2.89
2001	\$13.67	\$10.65	(\$2.33)	\$45.99
2006	\$16.07	\$21.10	(\$10.92)	
lowest	(\$26.88) '98	(\$16.14) '98	(\$27.96) '98	\$46.40
highest	\$25.57 '05	\$24.86 '05	\$14.81 '04	
1996-2005	\$2.05	\$3.57	(\$7.68)	
Months profitable	54.2%	66.7%	33.3%	

[Fdr budget Feb'07.XLS](#)

Beginning Farmer Conference

What are the Opportunities?

What is Your Forte?

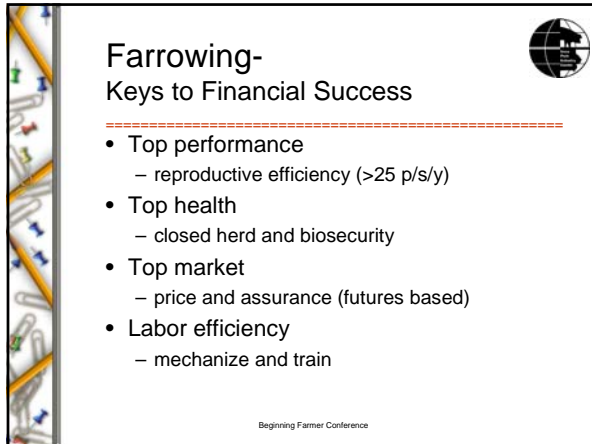
- Commodity production
- Niche based production
- Farrowing
- Farrow to finish
- Finishing
- Wean to finish
- Contract grower
- Allied business

Beginning Farmer Conference

Farrowing-Facts

- Shortage of weaned pigs in Iowa
 - 17.7% of US breeding herd, 1.08 mil (Dec '06)
 - 28.8% of US market hogs, 16.12 mil (Dec '06)
- >8 million feeder pigs imported
- Requires highly skilled management
- An economic generator

Beginning Farmer Conference



Farrowing- Keys to Financial Success

- Top performance
 - reproductive efficiency (>25 p/s/y)
- Top health
 - closed herd and biosecurity
- Top market
 - price and assurance (futures based)
- Labor efficiency
 - mechanize and train

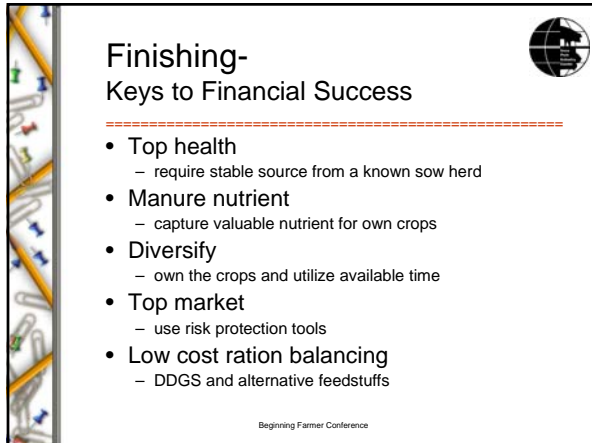
Beginning Farmer Conference



Finishing- Facts

- Capitalizes on feed availability
- Capitalizes on slaughter capacity
- Works well for crop farmer or part-time farmer
- Flexibility in risk and ownership structure
 - purchase ([Fdr budget Feb'07.XLS](#))
 - custom grower (contract production)
 - numerous arrangements available

Beginning Farmer Conference



Finishing- Keys to Financial Success

- Top health
 - require stable source from a known sow herd
- Manure nutrient
 - capture valuable nutrient for own crops
- Diversify
 - own the crops and utilize available time
- Top market
 - use risk protection tools
- Low cost ration balancing
 - DDGS and alternative feedstuffs

Beginning Farmer Conference



Attribute-based 'Niche Markets' Facts

- Based on:
 - production system (pasture reared)
 - eating quality (Berkshire, Duroc)
 - health perceptions (no subtherapeutics)
 - diet (organic)
 - a story (family farm)
- Demand in this area grows as the affluence of the consumer grows

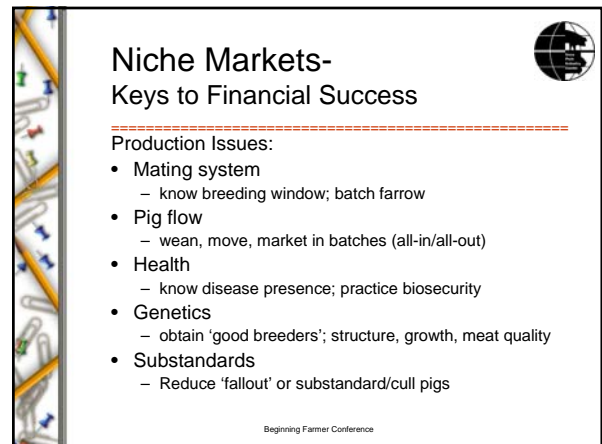
Beginning Farmer Conference



Niche Markets- Keys to Financial Success

- Have a Market
 - Location, quantity, products
- Know your market
 - Stability, culture
- Know your costs
 - Production (feed, labor)
 - Marketing (transportation, morbidity)

Beginning Farmer Conference



Niche Markets- Keys to Financial Success

Production Issues:

- Mating system
 - know breeding window; batch farrow
- Pig flow
 - wean, move, market in batches (all-in/all-out)
- Health
 - know disease presence; practice biosecurity
- Genetics
 - obtain 'good breeders'; structure, growth, meat quality
- Substandards
 - Reduce 'fallout' or substandard/cull pigs

Beginning Farmer Conference

Contract Finishing- The Facts

- Numerous source options available
 - Sow farm co-ops
 - Local independent producers
 - Grain co-ops
 - Integrators
- Wean-to-finish, nursery, or finish
- Construction costs are high
 - Tunnel vent or natural vent
- Manure is of great value (\$2.50/hd after application cost?)

Beginning Farmer Conference

“What does the cashflow look like”

- #1) _____
w/ no manure valued
- #2) _____
w/ manure valued

Beginning Farmer Conference

Contract Finishing- Cashflow example

- 2400 hd feeder to finish on ~2 acres
- \$220/space construction cost
- 7.5% interest; \$20,000 down
- Utilities:\$1.50/hd (\$8640/yr)
- Tax & Ins.: \$7560/yr
- Own labor
- Paid \$38/space (\$91,200/yr)

Beginning Farmer Conference

Contract Finishing- Cashflow example

Manure value

- 876,000 gal/yr (1 gal/space/day)
- Nutrient yld/space/yr: 19#N, 13#P, 10#K

N: 19# *2400 = 44,688 * \$.26 = \$11,619
 P: 12# *2400 = 28,800 * \$.27 = \$ 7,776
 K: 10# *2400 = 24,000 * \$.22 = \$ 5,280

Annual manure credit = \$24,675
 (\$16,791 after application cost, \$.01/gal)

N based plan: 262 acres (170#/ac); 524 in corn-soy rotation

Beginning Farmer Conference

Contract Finishing- Cashflow example

Manure value (cont.)

- Nutrient analysis (concentration) will vary from barn to barn, system to system
 - Feed, entry/exit wts, feeder/water management, other
- Value will vary depending on fertilizer values
- Transportation >2-3 miles decreases value
- Must inject
- MMP's are a good thing
- You need to capitalize with your own ground

Beginning Farmer Conference

Projected Budget & Cash Flow

IRAWA STATE UNIVERSITY
Iowa State University

Consulted: _____ Prepared for: LAG0007
 Address: _____ Address: _____
 Phone/Fax: _____ Phone/Fax: _____
 Email: _____ Email: _____

Notes

This farm is a 2400 head feeder to finish facility existing on ~2 acres
 Construction cost is estimated at \$220/space. \$2000 of cash is set aside for the operation with the remainder being the physical structure and equipment (\$17,000)
 Facility is purchased with a \$200,000 loan at 7.5% interest 15 yr depreciation
 \$2000 in cash and \$200,000 cash transferred to make advance

1. Utility usage estimated at \$1.50/hd * 2400hd * 3.4 acres = \$12,240/yr
 Manure handling estimated at \$6.00/1000gal as an average production of 375,000 gal/yr
 = \$2,250/yr
 = \$7,990/yr

2. 15% depreciation of \$200,000 = 27,000/yr
 \$2700 for 6 hrs / yr

3. Contract payment on pig space: \$38.00/space * 2400 space = \$91,200/yr (\$38,000/yr) (net)
 (net) is estimated provided for cash and 2.0 months 0.00/17.5

4. Manure credit: 176,000 gal production (1 gal/space/day)
 reduced carrying capacity: 16.5 lbs N, 13 lbs P205, 10 lbs K20
 N value: 16.5 lbs N/acre * 2.4 acres = 39.6 lbs N
 P value: 13 lbs P/acre * 2.4 acres = 31.2 lbs P
 K value: 10 lbs K/acre * 2.4 acres = 24.0 lbs K
 Annual manure credit = \$24,675
 Annual manure credit = \$24,675 after application cost (\$7,000/yr)

5. Total land requirements: N based plan would cover 262 acres of corn (65% N available, 170 lbs/acre)
 If P based application for corn production at a removal of 1.1 lbs/acre, would cover 400 acres (150 lbs/acre)
 = 400 acres of corn + 200 acres of soy + 200 acres of corn + 200 acres of soy = 800 acres of corn + 200 acres of soy

6. Other crop production, value, and yield is as an example here and should be adjusted to fit your specific information on your soil and needs as required for an accurate projection of output

Pig 80 grow-fin contract			
	Total \$	\$/Pig Cost	Least Cost
Income			
Feeder pigs:			
Market hogs:			
Breeding stock:			
pig space contract:	9100.00		
crop-fertilizer credit:	2465.00		
Total Gross Income:	11565.00		
Variable Costs			
Pig:			
Feed:			
Grain:			
Supplement:	1425.06		
Interest:	2400.00		
misc:			
Remaining variable costs:	1952.10		
Owner / Operator Wages	2330.06		
Total Variable Costs:	4282.16		
Fixed Costs			
Capital charge on investment:	40275.00		
Depreciation on breeding stock:	32210.00		
Remaining depreciation:	7500.00		
Remaining fixed costs:			
Total Fixed Costs:	80654.00		
Total Cost of Production:	85346.16		
Net Profit and Return to Management:	1247.84		
Return to Operator Labor & Mgmt.:	1247.84		
Return to Capital, Op. Labor, & Mgt.:	52746.94		
Hourly Return to All Labor & Mgt. (\$/hr):	13.32		
Overall Percent Return (%):	12.4%		
Return per \$100 of Feed Fed:	10.01M		

Developed Software Data (LSU) © 2012 Market hogs

Year 1-Projected Cashflow												
	Total	January	February	March	April	May	June	July	August	September	October	November
Income												
Pig	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pig space contract	9100.00	7583.33	7583.33	7583.33	7583.33	7583.33	7583.33	7583.33	7583.33	7583.33	7583.33	7583.33
crop & fertilizer credit	2465.00	205.42	205.42	205.42	205.42	205.42	205.42	205.42	205.42	205.42	205.42	205.42
Total Income	11565.00	7788.75	7788.75	7788.75	7788.75	7788.75	7788.75	7788.75	7788.75	7788.75	7788.75	7788.75
Expenses												
Pig	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feed	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Supplement	1425.06	118.75	118.75	118.75	118.75	118.75	118.75	118.75	118.75	118.75	118.75	118.75
Interest	2400.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00
misc	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Variable Costs	4282.16	351.75	351.75	351.75	351.75	351.75	351.75	351.75	351.75	351.75	351.75	351.75
Capital charge on investment	40275.00	3356.25	3356.25	3356.25	3356.25	3356.25	3356.25	3356.25	3356.25	3356.25	3356.25	3356.25
Depreciation on breeding stock	32210.00	2684.17	2684.17	2684.17	2684.17	2684.17	2684.17	2684.17	2684.17	2684.17	2684.17	2684.17
Remaining depreciation	7500.00	625.00	625.00	625.00	625.00	625.00	625.00	625.00	625.00	625.00	625.00	625.00
Total Fixed Costs	80654.00	6665.42	6665.42	6665.42	6665.42	6665.42	6665.42	6665.42	6665.42	6665.42	6665.42	6665.42
Total Cost of Production	85346.16	7017.17	7017.17	7017.17	7017.17	7017.17	7017.17	7017.17	7017.17	7017.17	7017.17	7017.17
Net Profit and Return to Management	1247.84	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58
Return to Operator Labor & Mgmt.	1247.84	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58
Return to Capital, Op. Labor, & Mgt.	52746.94	4422.26	4422.26	4422.26	4422.26	4422.26	4422.26	4422.26	4422.26	4422.26	4422.26	4422.26
Hourly Return to All Labor & Mgt. (\$/hr):	13.32	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
Overall Percent Return (%):	12.4%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Return per \$100 of Feed Fed:	10.01M	8.50M	8.50M	8.50M	8.50M	8.50M	8.50M	8.50M	8.50M	8.50M	8.50M	8.50M

Developed Software Data (LSU) © 2012 Market hogs

12 Year-Projected Cashflow												
	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Income												
Pig	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pig space contract	9100.00	7583.33	7583.33	7583.33	7583.33	7583.33	7583.33	7583.33	7583.33	7583.33	7583.33	7583.33
crop & fertilizer credit	2465.00	205.42	205.42	205.42	205.42	205.42	205.42	205.42	205.42	205.42	205.42	205.42
Total Income	11565.00	7788.75	7788.75	7788.75	7788.75	7788.75	7788.75	7788.75	7788.75	7788.75	7788.75	7788.75
Expenses												
Pig	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feed	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Supplement	1425.06	118.75	118.75	118.75	118.75	118.75	118.75	118.75	118.75	118.75	118.75	118.75
Interest	2400.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00
misc	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Variable Costs	4282.16	351.75	351.75	351.75	351.75	351.75	351.75	351.75	351.75	351.75	351.75	351.75
Capital charge on investment	40275.00	3356.25	3356.25	3356.25	3356.25	3356.25	3356.25	3356.25	3356.25	3356.25	3356.25	3356.25
Depreciation on breeding stock	32210.00	2684.17	2684.17	2684.17	2684.17	2684.17	2684.17	2684.17	2684.17	2684.17	2684.17	2684.17
Remaining depreciation	7500.00	625.00	625.00	625.00	625.00	625.00	625.00	625.00	625.00	625.00	625.00	625.00
Total Fixed Costs	80654.00	6665.42	6665.42	6665.42	6665.42	6665.42	6665.42	6665.42	6665.42	6665.42	6665.42	6665.42
Total Cost of Production	85346.16	7017.17	7017.17	7017.17	7017.17	7017.17	7017.17	7017.17	7017.17	7017.17	7017.17	7017.17
Net Profit and Return to Management	1247.84	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58
Return to Operator Labor & Mgmt.	1247.84	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58	104.58
Return to Capital, Op. Labor, & Mgt.	52746.94	4422.26	4422.26	4422.26	4422.26	4422.26	4422.26	4422.26	4422.26	4422.26	4422.26	4422.26
Hourly Return to All Labor & Mgt. (\$/hr):	13.32	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
Overall Percent Return (%):	12.4%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Return per \$100 of Feed Fed:	10.01M	8.50M	8.50M	8.50M	8.50M	8.50M	8.50M	8.50M	8.50M	8.50M	8.50M	8.50M

Developed Software Data (LSU) © 2012 Market hogs

Contract finishing- Considerations

- Know your contractor/ supplier of pigs
 - Financial history
 - Herd health history
 - Trust
 - Employee retention / job satisfaction
 - Accessibility of regional fieldman & vet service
 - Pigflow & space allotment
 - Other: genetics, feed, MMP assistance, lending assistance, long term plans
- Manure Value

Beginning Farmer Conference

Contract finishing- Considerations

- Understand your contract
- Read through it
 - whether written or verbal
- Length of contract & terms
- Payment terms
- Repair & maintenance

Beginning Farmer Conference

Contract finishing- Considerations

- Know what is required of you
 - Daily care
 - Variable costs/Utilities; LP gas
 - Vaccinations/treatments
 - Rendering
 - Insurance
 - Feed ordering
 - Biosecurity; powerwashing; loading, unloading
 - Liability for deathloss or pig shortage
 - Manure management

Beginning Farmer Conference


Closing Thoughts-
The Future Pork Industry

- More swine finishing in Iowa
- No gestation stalls
- Increased public scrutiny
- Cut costs, cut costs, cut costs
- People
- People
- People

} You are a great asset!

Beginning Farmer Conference

Sustainable pork production



Beginning Farmer Conference