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Pork Production Systems with Business Analysis: The Low-Investment, Low-Intensity Confinement System (2 Groups of Sows Farrow-to-Finish)

Michigan State University

Cooperative Extension Service

Authors:

James R. Foster, Purdue University

Ronald L. Plain, University of Missouri

Kenneth A. Foster, Purdue University

Reviewers:

Michael Brumm, University of Nebraska

Allan Lines, Ohio State University

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Authors

Ronald L. Plain, University of Missouri
James R. Foster, Purdue University
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Low-Intensity System . . . What It Is and Where It Fits

This farrow-to-finish system is characterized by buildings simple in design, with a minimum of environmental control and labor-saving devices. Farrowings are usually four times a year and scheduled to avoid the peak labor periods for crop production. A popular farrowing sequence in the Corn Belt is December, February, June, and August.

Low-investment, low-intensity fits best on crop farms where hog production would serve as a secondary enterprise to utilize excess seasonal labor and other underused resources, such as feed, buildings, fences, and materials handling equipment. However, because the system does require permanent buildings, management should be willing to make a long-term commitment to hog production.

Advantages

- Low-investment, low-intensity systems often "employ" abandoned facilities (chicken houses, dairy stables, concrete slabs, fencing) that otherwise have no alternative use. Such "free" resources can give this production system a considerable fixed cost advantage over other systems that require new, specialized buildings and sophisticated equipment.
- Because the buildings are simple in design and have few, if any, automatic devices, they usually can be constructed or remodeled using farm labor; and they do not need a skilled mechanic to keep them in operation.
- Facility investments per square foot and per hog capacity are low compared to more intensive systems. Therefore, management is better able to schedule around peak crop demands.
- Many of the production tasks can be performed by unskilled labor.

Disadvantages

- Hogs in open-front buildings may require either bedding or supplemental heat in the winter to maintain acceptable levels of performance. Bedding is scarce and expensive in some communities and, of course, is not compatible with the handling of manure as a liquid.
- A low-investment, low-intensity system has a relatively high labor requirement—from 50% to 100% greater per hog produced than with slotted-floor, environmentally regulated systems. And many of the activities (e.g., manure scraping and bedding) are tedious and disagreeable.
- The system usually employs exposed concrete slabs, which may cause control problems for flies, odors, and runoff.
- Hog performance will suffer relative to high-investment systems, especially in adverse weather.

Developing a Production Management Calendar

Because a low-intensity swine enterprise usually is secondary to crop production, most producers seasonalize it around their cropping plans. Therefore, it is important to develop a calendar of management activities so one can forecast, by months, the needs for various resources—especially labor.

Table 1 presents a calendar for an enterprise where farrowing is scheduled for December and February, and for June and August.

The figures on Line 8 of Table 1 are estimates of the percentage distribution of labor over 12 months. Shift these figures in one direction or another if your farrowing dates are different.

Line 11 is an estimate of the total hours of labor needed per month. To arrive at these figures, first multiply number of sows

Table 1. Calendar of management activities for a low-intensity system (example: 25 litters each in December, February, June, and August).

Line	Activity	Example	Month												Comments		
			J	F	M	A	M	J	J	A	S	O	N	D			
1.	Select replacement gilts	Jan., May, July, Nov.	●					●			●				●		To provide greatest selection, choose gilts before selling any slaughter hogs.
2.	Buy boars	Jan, May, July	●					●			●						Boars should be on the farm at least 2 months before the breeding season and be at least 9-months old when mating begins.
3.	Vaccinate gilts and sows	Group A Mar. 25, Sept. 25				●									●		Vaccinate for erysipelas and leptospiriosis 15 to 30 days before breeding. Vaccinate gilts with porcine parvovirus 6 weeks and 2 weeks before breeding. Consider vaccination for rhinitis, TGE, and E. coli.
		Group B Jan. 25, July 25	●												●		
4.	Breed	Group A Apr. 11-May 8 Oct. 12-Nov. 8					●	●								●	Expose sows to the boars for 4-week period.
		Group B Feb. 9-Mar. 8 Aug. 11-Sept. 7		●	●										●	●	
5.	Farrow	Group A Feb. & Aug.		●											●		Although this example schedules farrowings in Dec., Feb., June and Aug. (to avoid Corn Belt crop planting and harvesting conflicts), your farrowings might be during four other months, provided each group of sows is kept on a 6-month interval. Castrate when pigs are 7-10 days old.
		Group B June & Dec.							●						●		
6.	Wean	Group A Mar. 15-Apr. 11 Sept. 12-Oct. 9				●	●								●	●	Plan for 4- to 5-week weaning. Vaccinate for erysipelas at this time. To keep sows on the 6-month farrowing schedule, skip one heat period before rebreeding those sows which farrowed early.
		Group B Jan. 12-Feb. 8 July 13-Aug. 9	●	●											●	●	
7.	Sell market hogs	Dec.-Mar. June-Sept.				●			●					●		●	Animals should reach slaughter weight at 6-7 months of age.
8.	Percentage distribution of labor	100%	10	11	9	6	5	9	8	9	10	6	5	12			Labor needs vary widely. Efficient large-volume producers report a labor requirement of 25 hours per sow or 1 2/3 hours per hog produced. Low-investment producers should use about 33 hours per sow. However, both figures ignore the indirect labor spent in planning, keeping records, maintaining the farmstead, etc. For relatively small enterprises (50 sows or less), this indirect labor may add 10-15 %.
9.	Number of sows	50															
10.	Hours of labor per sow*	33															
11.	Hours of labor per month	1,650	165	181	149	99	82	148	132	149	165	99	83	198			

*The sow is the unit around which the discussion in this publication is built. A sow unit denotes a mature female in production and includes a supporting cast of boars, replacement gilts, and progeny in various stages of growth. Approximately 14.76 market hogs will be sold each year per sow unit.

(Line 9) by estimated hours of labor per sow (Line 10). Then distribute the total labor across the months in accordance with your percentage distribution on Line 8.

Management from Pre-Breeding to Finishing

Managers of this system frequently are under considerable pressure to neglect their hogs during the busy seasons of crop production. To avoid situations that result in poor pig performance, the operator should: (1) do the best to schedule labor-intensive activities (e.g., farrowing) out of conflict with cropping; (2) be prepared to recruit extra help when cropping demands are greatest; (3) design buildings and select equipment that minimize daily chore labor (e.g., avoid floors that need daily scraping or feeders that need daily filling); and (4) build a margin for error into the system by providing adequate square footage for animals in all stages of the life cycle.

Following are proven management suggestions for each phase of low-intensity farrow-to-finish.

Pre-Breeding

Develop a definite plan for breeding herd replacements and follow it. As a suggestion, add gilts at each breeding period so that, over 12 months (4 breeding periods), 50% of the sow herd is replaced.

Breeding

Although this system utilizes relatively low-cost buildings, there is still considerable penalty for having unused space. Be sure to breed enough females. If all boars are not replaced yearly, provide enough breeding pens for gilts to be separated from sows and for the sow herd to be split, so that mating will not occur between mature boars and their progeny and a rotational breeding plan can be followed. Commercial producers also should consider alternative crossbreeding programs including the purchase of replacement gilts. These crossbreeding programs are discussed in PIH-39, Crossbreeding Systems for Commercial Pork Production.

Plan on a 4-week breeding period, with one boar expected to service 10 females. However, because of the risk of buying a nonbreeder or having one incapacitated by injury, we recommend purchasing one boar for each 10 females to be bred in a group plus one extra boar.

Remove the boars at the end of the 4-week breeding period. The result will be a shorter farrowing season, which has several advantages: (1) lowers incidence of baby pig diseases; (2) encourages closer supervision of sows during farrowing; and (3) helps avoid stragglers, which cause problems throughout the growing-finishing phase.

Gestation

Most low-intensity producers maintain the breeding herd on pasture or in dirt lots. High-quality legume pasture, if available, can be used to replace up to 50% of the grain and supplement needs during gestation. An acre of good pasture will accommodate about eight sows.

Farrowing

A typical low-intensity farrow-to-finish operation utilizes a central farrowing house, which might be a converted dairy stable or other buildings, or possibly a pull-together building on a concrete slab. The example in this publication (Table 4) includes a 20-sow farrowing house to be used by two groups of 25 sows each. With such a building, cleaning chores can be minimized by turning the sows out twice a day for feed and water.

Nursery

Sows are moved with their litters to a sow-and-pig nursery when pigs are 2 to 4 weeks of age and have not yet begun to produce large quantities of manure. Although this practice reduces daily chore labor, one disadvantage of using a sow-pig nursery is pig injury or loss due to overlaying and robbing. The following suggestions will help minimize the problem:

1. Do not move a sow and her litter to the nursery until the pigs are at least 10 days old.
2. Plan on no more than 3 sows and litters per nursery pen.
3. Arrange groupings so that range in age of pigs sharing a common pen is less than one week.
4. Provide a comfortable creep area to discourage pigs from sleeping with the sows.

The sow-and-pig nursery is usually designed so it can accommodate pigs weighing as much as 100-150 lb. This becomes necessary when farrowings are scheduled at irregular intervals (e.g., December and February, and then June and August). The nursery quarters are practically identical to the finishing facility except for smaller pens and provision of a creep area. Optimum age to wean under this system is 4 to 5 weeks.

Growing-Finishing

Quarters for growing-finishing hogs usually are simple, open-front buildings with outside feeding floors. Provisions must be made to control flies and odors, and to contain runoff from the feeding floor.

The challenge in designing and managing a low-investment finishing facility is (1) to provide a warm, dry, comfortable sleeping area that requires a minimum of bedding and/or labor, and (2) to "teach" the hogs to keep that area clean and to deposit manure where it can be easily removed. This means careful consideration given to design features such as size and shape of pens; position of solid and open partitions; location of feed, water, and sleeping area; and to management practices concerning space allowance, control of drafts, and toilet training.

The number of pigs per pen in a growing-finishing unit should not exceed 75, and they should be relatively uniform in size (none more than 20% above or below the average weight of the group).

Performance Standards and Production Requirements

Skilled and conscientious herdsman have been able to achieve high levels of animal performance with this system. Table 2 shows performance standards and estimates of annual production for a 50-sow herd (2 groups of 25 sows farrowing every 6 months.)

Feeding Recommendations

Estimates of total annual feed needed to produce 768 market-weight hogs from 50 sows farrowing are given in Table 3.

Facility Needs and Costs

Table 4 lists a typical set of facilities for a 50-sow low-investment, low-intensity, farrow-to-finish system, along with an estimate of their cost when new. The last column is for your investment estimates.

In developing a budget (see next section), facilities should be classified for estimating overhead expenses. While a separate category for each depreciable item would give greatest accuracy, an acceptable degree of precision can be achieved merely by dividing "facilities" into two groups—items

Table 2. Performance standards for a 50 sow (100 litter) low-intensity system.

Item	Standard	Annual results
Conception rate	Gilts 80% Sows 90%	100 litters
Live pigs farrowed/litter	10	1,000 pigs farrowed
Pigs weaned/litter	8	800 pigs weaned
Mortality from weaning to market	4%	768 pigs reaching 245 lb.
Gilts kept for replacement annually	30	738 market hogs sold
Rate of gain	245-lb market animal at 6-7 mo.	193,000 lb total gain*
Feed conversion (including sow herd)	4 lb feed/lb gain	772,000 lb total feed

*Gross weight produced equals total pounds sold minus purchase weight of boars.

Table 3. Annual feed requirements (breeding herd and pigs) for a 50-sow low-intensity system.

Type of feed	Annual amount
Grain	614,900 lb (10,980 bu corn)
Sow supplement	27,600 lb
Grower-finisher supplement	117,600 lb
Creep ration	12,000 lb (15 lb/pig)

of 15 years (italicized in Table 4); everything else is classified as "equipment" with a shorter depreciable life (8 years) and a higher maintenance charge.

Table 5 shows the investment costs of the facilities listed in Table 4 according to this depreciable-life classification. These figures are the ones used to calculate the figures in the overhead expenses section of our low-investment budget (Table 6).

Developing a Budget

Table 6 lists estimates of the various items of cost and return for a 50-sow (farrowing) enterprise, and are shown on both a total enterprise and a sow-unit basis (see Table 1 footnote).

Using the last column, modify the figures in Table 6 to describe your situation.

Income (Section A)

This annual budget assumes each sow unit farrows at 6-month intervals with 16 pigs weaned annually, of which 14.76 market hogs are sold at 245 lb each plus breeding stock sales. It also assumes boars are kept an average of 16 months; hence, a boar depreciation charge (boar purchase minus boar receipts) of \$17.55 per sow or about \$1.14 per pig marketed.

Direct Costs (Section B)

These are the costs readily assigned to the enterprise, the major one being feed. In Table 6 the feed bill is broken into two categories: feed grain (corn equivalent) and purchased feed (supplement and creep). If using a feed grain other than corn, calculate the requirements on the basis of these conversions: 1 bushel (bu) of corn or milo equals 2 bu oats, or .9 bu wheat, or 1.1 bu barley.

There are no charges for land use, even though the land is needed for buildings and for the dirt lots where the land used

by the hog enterprise has no alternative use. This may not be the case on your farm, however; you may have opportunity to cash rent this land or to profitably use it for crop production. If so, the hogs must "match" the best alternative use; and a charge for the land at that best-use rate should be made when you adapt Table 6 to your situation.

Overhead Expenses (Section C)

Classified as "overhead" are the cost of labor and the cost of owning capital items. The hogs should pay a wage equal to what this particular labor can demand elsewhere.

As listed in the budget, the ownership charge for capital items is an estimate of the total of depreciation, interest, maintenance costs, taxes and insurance. The overhead charge includes 9% for interest, 0.5% for property taxes and 0.4% for insurance.

When developing your figures for Table 6, remember that the sample budget assumes that all the facilities (15- and 8-year depreciable items) listed in Tables 4 and 5 must be purchased. In your situation, however, some of those facilities may already be available (e.g., an abandoned building suitable for conversion to a farrowing unit); and you may already be incurring ownership costs (e.g., depreciation, taxes, and insurance) merely because they are there. In estimating the contribution of low-investment hog production to your total business, the charge for such fixed resources (the ones already available) should be set at their opportunity value rather than the annual ownership charge shown in Table 6.

Average annual investment in breeding stock was estimated at \$238 per sow unit. On average, the breeding herd was assumed to include 4 boars, 44 sows and 16 replacement gilts. Boar value was figured at the average of the buying and selling price; females were figured at market price.

The term "operating inventory" was used for the investment in market or nonbreeding animals on hand. The investment in those was assumed to be the direct cost of producing them. It includes such items as feed, veterinary, and fuel; it does not include overhead. The figure is \$21,250 on average for this 50-sow production unit.

Budget Summary (Section D)

Net return to management is the return after all expenses, including an interest charge on the money invested and a \$6 per hour labor charge.

Per hour return to labor and management is the dollar return per hour after all expenses except labor.

Return on investment is the percent return to the enterprise after all expenses except interest.

Table 4. Facilities investment for a 50-sow, low-intensity system (25 females farrowing December and June; 25 farrowing February and August).*

Item	Size & description	Units needed	Cost per unit	Total investment	Your figures
Part A. Farrowing facilities—20 sow central house (sows turned out twice daily)					
Building	22 ft x 55 ft	1,210 sq ft	\$7.50	\$9,075.00	\$ _____
Farrowing crates		20	100.00	2,000.00	_____
Waterers	4 hole, frost proof	1	250.00	250.00	_____
Feeders	20 hole, 40 bu	1	750.00	750.00	_____
Heating devices	Space heater + heat lamps	--	--	550.00	_____
Feeding floor for sows	22 ft x 25 ft	550 sq ft	2.00	1,100.00	_____
Outside fencing	Hog panels	90 ft	3.00	270.00	_____
Total				\$13,995.00	\$ _____
Part B. Farrowing-nursery facilities—25 litter capacity sow and pig unit					
Building	20 ft x 80 ft pole	1,600 sq ft	\$6.00	\$9,600.00	\$ _____
Exposed concrete slab	20 ft x 80 ft	1,600 sq ft	2.00	3,200.00	_____
Heat lamps and attachments		25	12.00	300.00	_____
Waterers	2 hole, frost proof	12	140.00	1,680.00	_____
Feeders	Convertible creep-grower	24	250.00	6,000.00	_____
Sow troughs	6 ft	12	20.00	240.00	_____
Fencing, gates	Hog panels	460 ft	3.00	1,380.00	_____
Total				\$22,400.00	\$ _____
Part C. Growing-finishing facilities—200 hog capacity open front with exposed slab					
Building	20 ft x 72 ft pole	1,440 sq ft	\$6.00	\$8,640.00	\$ _____
Exposed concrete slab	20 ft x 72 ft	1,440 sq ft	2.00	2,880.00	_____
Waterers	4 hole, frost proof	4	250.00	1,000.00	_____
Feeders	20 hole, 75 bu	2	800.00	1,600.00	_____
Partitions and gates	Hog panels	235 ft	3.00	705.00	_____
Total				\$14,825.00	\$ _____
Part D. Breeding herd facilities—60 females (16 gilts, 44 sows) portable buildings on permanent dirt lots					
Sow shelters	10 ft x 14 ft	6	\$430.00	\$2,580.00	\$ _____
Feeding fence	Wooden	120 ft	4.00	480.00	_____
Waterers	2 hole, frost-proof	6	140.00	840.00	_____
Concrete feeding slab	7 ft x 20 ft	6	280.00	1,680.00	_____
Fencing	Woven wire	150 rods (16.5 ft/rod)	12.00	1,800.00	_____
Total				\$7,380.00	\$ _____
Part E. Supporting equipment^o					
Feed and manure handling & misc. equip.	--	--		\$15,000.00	\$ _____
Land					
Part F. Facilities investment summary					
Total facilities investment				\$73,600.00	_____
Investment per sow farrowing				1,472.00	_____
Investment per hog produced yearly				95.83	_____

*The dollar figures represent an estimate of the cost of these items in mid-1993.

^oA hog enterprise of the type described here is likely found on a multi-enterprise farm and thus shares equipment with other enterprises. We have charged this operation with 75% of the investment in a portable grinder-mixer, front-end loader, high pressure pump, and dry manure spreader; and with 100% of the investment in the bulk tanks for supplement storage, loading chute, and hog holder. No investment in trucks or tractors was figured, but their use is charged to the hogs on an hourly or per mile basis in Table 6.



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Table 5. Facility investment by major depreciation classifications.

Depreciable life	For 50 sows		Per sow	
	Our example	Your figures	Our example	Your figures
15 years	\$40,555*	\$_____	\$811.10	\$_____
8 years	33,045	_____	660.90	_____
Total	\$73,600	\$_____	\$1,472.00	\$_____

*Sum of italicized items in Table 4.

Total cost per 100 lb of market hog is calculated by subtracting a credit for breeding animals sold from total expenses, then dividing this solution by the hundredweight of market hogs sold. Compare this number with your expected market price.

Estimating Monthly Cash Flow Requirements

While the budget in Table 6 estimates type and amount of income and expenses for low-investment, low-intensity hog production, it does not reflect when income is realized or expenses incurred. Therefore, before committing oneself to such a system, the operator should estimate costs and returns on a month-to-month basis to see if and when financial problems might arise and to make provisions to meet them.

The two main reasons why you might want to prepare a cash flow projection are: (1) to show the cash demands in the start-up period, when a new enterprise is launched or sows are added to an existing enterprise (Table 7); and (2) to determine the seasonal pattern of receipts and expenses in a normal year of operation (Table 8).

Notice that the last line of Table 7—"cumulative cash flow"—is carried forward and continued on the last line of Table 8 to give a two year cash flow picture for a new enterprise. In our 50 sow farrow-to-finish example, the worst cash flow situation occurs in November of the start-up year, 11 months after launching the enterprise. At this time, the manager must be prepared to cover expenses that exceed receipts by \$37,224 (or approximately \$744 per sow unit) either by borrowing or by dipping into savings.

Cumulative cash flow remains negative through half of the second year of operation. In other words, it takes 1 1/2 years for the enterprise to digest the start-up expense and cost of obtaining breeding stock. Midway through the second year, cash flows become positive. This is what can be used to reward labor and management and to pay for buildings and equipment.

Once established, the low-intensity, farrow-to-finish system has a relatively favorable cash-flow pattern. In only 4 months (April, May, October and November) of a normal year would one expect expenses to exceed that month's receipts. The December cumulative cash flow figure in Table 8 of \$29,363 is the normal year's net return after paying production expenses, excluding labor and capital costs.

In Table 7, purchase of initial breeding stock is treated as a cash expenditure, even though this item probably would be financed with a note payable over more than one year. It is included here, however, to show the timing as well as the size of the expenditure. Both Tables 7 and 8 assume that labor will not be a cash expense item but will be provided by the farm family.

In developing a cash flow budget, one may want to add several expense items to indicate debt servicing obligations and/or planned outlays for new capital items. These lines would be labeled:

1. Interest payment on existing debt.
2. Principal payments on existing debt.
3. Downpayments on purchase of new capital items.

Effect of Performance and Price Variation on Returns

For those who produce market hogs, the major sources of risk are poor production performance, a drop in hog prices, and a rise in feed ingredient prices.

Any hog enterprise must be sufficiently well-funded to withstand one adverse year without danger of bankruptcy. Tables 9 and 10 show the year-to-year variation in returns that might be expected in the normal operation of a low-investment farrow-to-finish enterprise.

Performance

To reflect the consequences of variation in performance, feed conversions were varied 15% above and below the mean. Feed conversion (lb of feed per 100 lb of gain) was chosen as the overall index of animal performance, since it is affected by such things as conception rate, litter size and herd health.

Market Price

Tables 9 and 10 present estimates of the annual price likely to prevail. The high (\$53/100 lb) and low (\$35) figures approximate the swing in prices that might be expected in a hog cycle. During a four year period, a producer might anticipate one low price year, one high price year, and two years of average prices.

Table 9 reports returns above cash costs. This is the amount of money available to service debt, buy new capital items, and reward labor and management. Compare these figures to the final cumulative cash flow figures at the bottom of Table 8.

Table 10 reports return to labor and management after all other costs have been met, including depreciation and a return on average investment. The costs of supplying capital items (depreciation and interest) have been changed here but not in Table 9. Compare these figures to the sum of line C.2 and line D.1 in Table 6.

Feed Ingredient Prices

Feed represents approximately 63% of total production costs of a low-investment, low-intensity system. To produce 100 lb of liveweight gain requires 320 lb of feed grain (5 3/4 bu of corn) and 80 lb of purchased feed. Therefore, a \$0.10 per bu increase in the price of corn adds \$0.57 to production cost per 100 lb of gain; a \$20 per ton increase in the price of purchased feeds adds \$0.80 to your break-even price.

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Table 6. Estimated budget for a 50-sow, 2-litter low-intensity system.

Item	One sow		50 sows		Your figures
A. Income					
1. Market hogs (245 lb @ \$47.00/100 lb)	\$1,699.61	738 head =	\$84,980.50		\$ _____
2. Sows (425 lb @ \$40.00/100 lb)	81.60	24 head =	4,080.00		_____
3. Nonbreeders (300 lb @ \$44.00/100 lb)	13.20	5 head =	660.00		_____
4. Boars (450 lb @ \$35.00/100 lb)	9.45	3 head =	472.50		_____
5. Gross income	<u>\$1,803.86</u>		<u>\$90,193.00</u>		\$ _____
B. Direct costs					
1. Feed					
a) Corn equivalent (\$2.50/bu)	219.6 bu = \$549.00	10,980 bu =	\$27,450.00		\$ _____
b) Purchased feed (15¢/lb)	3,144 lb = <u>471.60</u>	157,200 lb =	<u>23,580.00</u>		_____
c) Total feed	1,020.60		51,030.00		\$ _____
2. Veterinary and medicine	27.00		1,350.00		_____
3. Boar purchase (@ \$450.00)	27.00	3 head =	1,350.00		_____
4. Marketing	32.00		1,600.00		_____
5. Power, fuel and equipment repair	72.00		3,600.00		_____
6. Miscellaneous (bedding, supplies)	<u>24.00</u>		<u>1,200.00</u>		_____
7. Total direct costs	<u>\$1,202.60</u>		<u>\$60,130.00</u>		\$ _____
8. Income over direct costs (A.5-B.7)	\$601.26		\$30,063.00		\$ _____
C. Overhead expenses					
1. Investment overhead					
a) 15 year depreciable facilities (16.1%)	\$811.10 = \$130.59	\$40,555 =	\$6,529.36		\$ _____
b) 8 year depreciable facilities (22.0%)	660.90 = 145.40	33,045 =	7,269.90		_____
c) Breeding stock (9.9%)	238.00 = 23.56	11,900 =	1,178.10		_____
d) Operating inventory (9.9%)	425.00 = <u>42.08</u>	21,250 =	<u>2,103.75</u>		_____
e) Total investment overhead	\$341.63		\$17,081.00		\$ _____
2. Labor (\$6.00/hr)	33 hrs = <u>198.00</u>	1650 hrs =	<u>9,900.00</u>		_____
3. Total overhead expenses	<u>\$539.63</u>		<u>\$26,981.00</u>		\$ _____
D. Summary					
1. Net return to management (B.8-C.3)	\$61.64		\$3,082.00		\$ _____
2. Per hour return to labor and management			\$7.87		_____
3. Return on investment (excluding land)			11.89%		_____
4. Total cost per 100 lb of market hog			\$44.94		_____

Table 7. Estimated cash flow for a 50 sow farrow-to-finish operation — start-up year.*

Item	TOTAL	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Estimated Cash Receipts													
Market Hogs	\$21245												\$21245
Nonbreeder Gilts	1188					396			396			396	
Cull Sows	840								420		420		
Total Estimated Cash Receipts	\$23273	\$0	\$0	\$0	\$0	\$396	\$0	\$0	\$816	\$0	\$420	\$396	\$21245
Estimated Cash Expenses													
Purchased Feed	\$12606	\$199	\$184	\$377	\$369	\$354	\$538	\$1100	\$1621	\$2175	\$1917	\$2003	\$1769
Grain*	13777	219	201	423	412	391	461	828	1494	2163	2276	2624	2285
Veterinary & Medicine	860					78	156	157	156	78		78	157
Boar Purchase@450	1350	1350											
Gilt Purchase@\$200	13000	6000		5600				800		600			
Marketing	260					15			30		15	15	185
Power, Fuel, Utilities & Repair	1585		45	55	55	75	145	155	165	185	205	215	285
Misc (bedding & supplies)	415		15	15	15	15	15	40	50	60	60	60	70
Insurance	150		40					110					
Total Estimated Cash Expenses	\$44,003	\$7,768	\$485	\$6,470	\$851	\$928	\$1,315	\$3,190	\$3,516	\$5,261	\$4,473	\$4,995	\$4,751
Net Monthly Cash Flow**		(7,768)	(485)	(6,470)	(851)	(532)	(1,315)	(3,190)	(2,700)	(5,261)	(4,053)	(4,599)	16,494
Cumulative Cash Flow **		(7,768)	(8,253)	(14,723)	(15,574)	(16,106)	(17,421)	(20,611)	(23,311)	(28,572)	(32,625)	(37,224)	(20,730)

*Grain is charged at a corn equivalent of \$2.50/bu.

**Parentheses () indicate negative values.

* Does not include principal or interest payments.

Table 8. Estimated cash flow for a 50-sow farrow-to-finish operation—normal operating year.*

Item	TOTAL	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Estimated Cash Receipts													
738 Mkt Hogs @245													
lb @ \$47/100 lb	\$84981	\$10623	\$10623	\$10622			\$10623	\$10623	\$10622	\$10623			\$10622
Cull Sows, 24 @425													
lb @ \$40/100 lb	4080	510	510	510			510	510	510	510			510
Nonbreeding Gilts, 5 @													
300 lb @ \$44/100 lb	660		132			132		132		132		132	
Boars, 3 @450 lb													
@ \$35/100 lb	472		157				158			157			
Total Estimated Cash Receipts	\$90193	\$11133	\$11422	\$11132	\$0	\$132	\$11291	\$11265	\$11132	\$11422	\$0	\$132	\$11132
Estimated Cash Expenses													
Purchased Feed	\$23580	\$1748	\$2127	\$2174	\$1913	\$2031	\$1796	\$1774	\$2151	\$2173	\$1914	\$2007	\$1772
Grain*	27450	1912	2352	2164	2288	2661	2313	1928	2396	2180	2300	2650	2306
Veterinary & Medicine	1350	156	158	83		86	88	220	222	220	32		85
Boar Purchase 3 @ \$450	1350	450				450		450					
Marketing	1600	185	190	185	10	20	190	197	195	202	10	15	201
Power, Fuel, Utilities & repair	3600	360	335	320	285	280	270	270	270	280	295	310	325
Misc (bedding & supplies)	1200	135	130	100	100	100	100	95	95	95	90	75	85
Insurance & Taxes	700	175						225					300
Total Estimated Cash Expenses	\$60,830	\$5,121	\$5,292	\$5,026	\$4,596	\$5,628	\$4,757	\$5,159	\$5,329	\$5,150	\$4,641	\$5,057	\$5,074
Net Monthly Cash Flow**		6,012	6,130	6,106	(4,596)	(5,496)	6,534	6,106	5,803	6,272	(4,641)	(4,925)	6,058
Cumulative Cash Flow		6,012	12,142	18,248	13,652	8,156	14,690	20,796	26,599	32,871	28,230	23,305	29,363
Cumulative Cash Flow from start	(20,730)	(14,718)	(8,588)	(2,482)	(7,078)	(12,574)	(6,040)	66	5,869	12,141	7,500	2,575	8,633

*Grain is charged at a market value of \$2.50/bu of corn.

**Parentheses () indicate negative values.

* Does not include principal or interest payments.

Table 9. Estimated returns above cash cost over a range of market hog prices and production rates for a 50-sow enterprise.

Market hog price, 100 lb	Animal performance level*		
	High	Medium	Low
\$53	\$48,532	\$40,877	\$33,223
\$47	\$37,018	\$29,363	\$21,709
\$41	\$25,504	\$17,849	\$10,195
\$35	\$13,990	\$ 6,335	(\$ 1,319)

*Feed conversions were varied 15% above and below the mean of 400 lb feed/100 lb gain.

Table 10. Estimated returns to labor and management over a range of market hog prices and performance levels for a 50-sow enterprise.

Market hog price, 100 lb	Animal performance level*		
	High	Medium	Low
\$53	\$32,151	\$24,496	\$16,842
\$47	\$20,637	\$12,982	\$ 5,328
\$41	\$ 9,123	\$ 1,468	(\$ 6,187)
\$35	(\$ 2,391)	(\$10,046)	(\$17,701)

*Feed conversions were varied 15% above and below the mean of 400 lb feed/100 lb gain.