



Livestock Building and Equipment Requirements

Department of Agricultural Economics



Kansas State University Agricultural Experiment Station and Cooperative Extension Service

Larry N. Langemeier
Extension Agricultural Economist
Farm Management Studies

James P. Murphy
Extension Agricultural Engineer

Investment in Labor-Saving Facilities

Some producers assume that the use of labor-saving facilities will minimize their livestock production problems. Studies conducted indicate:

1. The manager, rather than the system or type of facilities used, determines the success of a livestock enterprise.
2. A high level of performance can offset the higher costs of most systems.

Capital Requirements

Capital invested in livestock facilities varies greatly from enterprise to enterprise and from producer to producer. One needs to calculate all the costs, and finalize the facility design, before beginning construction.

A trend toward higher facility-equipment investment and lower labor requirements has occurred. Yet the key questions that need to be answered regarding the financing of a new or expanding livestock facility-equipment investment are:

1. How much will the cost of production increase or decrease?
2. Will additional income be generated?
3. Will additional funds be available for other investments and/or family living?
4. What effect will the new investment have on the total farm business?

Building and Equipment Requirements

The building and equipment requirements outlined are the systems used for the following KSU Farm Management Livestock Guides:

- MF-272, *Dairy Enterprise*
- MF-421, *Farm Ewe Flocks—Once a Year Lambing*
- MF-634, *Finishing Feeder Lambs*
- MF-600, *Drylot Backgrounding of Beef*
- MF-592, *Finishing Beef*
- MF-593, *Drylot Backgrounding and Finishing Beef*

Your livestock facility-equipment investment, and therefore costs, may differ from these used in these KSU cost-return budgets.

Building and equipment requirements also are provided for the following livestock systems:

- Farrow to finish swine operations
- Farrowing and marketing feeder pigs
- Finishing feeder pigs
- Beef cow/calf enterprise

Table 1. Building and Equipment Requirements—Swine Enterprises

FARROW TO FINISH SWINE OPERATIONS, (240 Litters—Two Litters—Confinement)

BUILDINGS—IMPROVEMENTS

Buildings:	
Gestation—70 Sows @ \$150 Per Sow	\$ 10,500
Farrowing—35 Sows @ \$1,000 Per Sow	35,000
Nursery—280 Pigs @ \$25 Per Pig	7,000
Finishing—420 Pigs @ \$55 Per Pig	23,100
Electrical Service and Grading	6,000
	\$ 81,600

Feed Storage:	
Grain (Dry)—12,000 Bu. @ \$1.20 Per Bu.	\$ 14,400
Protein—Two 7-Ton Bulk Bins	
@\$2,100 Per Bin	4,200
	\$ 18,600

Fences, Concrete:	
¹ Livestock Handling Fences	\$ 3,000
	\$ 3,000

TOTAL BUILDINGS—IMPROVEMENTS **\$103,200**

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Table 1. Building and Equipment Requirements—Swine Enterprises (Continued)

(Continued)		(Continued)	
EQUIPMENT			
Equipment:		Feed Processing Center (Portable	
Gestation Building—Sow Equipment, Panels,		Mix-Grinder)	10,000
Feeders—70 Sows @ \$150 Per Sow	\$ 10,500	Cleaning Facilities	1,000
Farrowing Building—Sow Equipment,		Water System	2,000
Farrowing Crates, Feeders—35 Sows		Manure Disposal System (Tank Wagon)	8,000
@ \$800 Per Sow	28,000	Pickup (1½)	4,000
Nursery Building—Pig Equipment, Panels,		Miscellaneous	500
Feeders—280 Pigs @ \$50 Per Pig	14,000		
Finishing Building—Pig Equipment, Panels,		TOTAL EQUIPMENT	<u>\$ 78,000</u>
Feeders—420 Pigs @ \$70 Per Pig	29,400		
Feed Processing Center (Portable		TOTAL BUILDINGS—IMPROVEMENTS/	
Mix-Grinder)	10,000	EQUIPMENT INVESTMENT	\$146,400
Cleaning Facilities	1,000		
Water System	2,000	TOTAL INVESTMENT PER LITTER	\$ 610.00
Manure Disposal System (Tank Wagon)	8,000		
Pickup (½)	4,000		
Miscellaneous	<u>1,100</u>		
TOTAL EQUIPMENT	\$108,000		
TOTAL BUILDINGS—IMPROVEMENTS/			
EQUIPMENT INVESTMENT	\$211,200		
TOTAL INVESTMENT PER LITTER	\$ 880.00		
¹ Fencing and concrete for sows and pigs included in building cost.			
FARROWING AND MARKETING FEEDER PIGS,		FINISHING FEEDER PIGS	
(240 Litters—Two Litters—Confinement)		(1,000 Pigs, 2,750 Per Year—Total Confinement)	
BUILDINGS—IMPROVEMENTS		BUILDINGS—IMPROVEMENTS	
Buildings:		Buildings:	
Gestation—70 Sows @ \$150 Per Sow	\$ 10,500	Finishing House—1,000 Pigs @ \$55 Per Pig	\$ 55,000
Farrowing—35 Sows @ \$1,000 Per Sow	35,000	Electrical Service and Grading	<u>1,500</u>
Nursery—280 Pigs @ \$25 Per Pig	7,000		\$ 56,500
Electrical Service and Grading	<u>4,950</u>		
	\$ 57,450		
Feed Storage:		Feed Storage:	
Grain (Dry)—2,500 Bu. @ \$1.50 Per Bu.	\$ 3,750	Grain (Dry)—9,000 Bu. @ \$1.30 Per Bu.	\$ 11,700
Protein—Two 7-Ton Bulk Bins		Protein—Two 7-Ton Bulk Bins	
@ \$2,100 Per Bin	<u>4,200</u>	@ \$2,100 Per Bin	<u>4,200</u>
	\$ 7,950		\$ 15,900
Fences, Concrete:		Fences, Concrete:	
¹ Livestock Handling Fences	<u>\$ 3,000</u>	Livestock Handling Fences	\$ 1,850
	\$ 3,000		\$ 1,850
TOTAL BUILDINGS—IMPROVEMENTS	\$ 68,400	TOTAL BUILDINGS—IMPROVEMENTS	\$ 74,250
EQUIPMENT		EQUIPMENT	
Equipment:		Equipment:	
Gestation Building—Sow Equipment, Panels,		Finishing Building—Pig Equipment,	
Feeders—70 Sows @ \$150 Per Sow	\$ 10,500	Panels, Feeders—1,000 Pigs @ \$70 Per Pig	\$ 70,000
Farrowing Building—Sow Equipment,		Feed Processing Center (Portable	
Farrowing Crates, Feeders—35 Sows		Mix-Grinder)	10,000
@ \$800 Per Sow	28,000	Cleaning Facilities	1,000
Nursery Building—Pig Equipment, Panels,		Water System	1,000
Feeders—280 Pigs @ \$50 Per Pig	14,000	Manure Disposal System (Tank Wagon)	8,000
		Pickup (¾)	3,200
		Miscellaneous	<u>300</u>
		TOTAL EQUIPMENT	\$ 93,500
		TOTAL BUILDINGS—IMPROVEMENTS/	
		EQUIPMENT INVESTMENT	\$167,750
		TOTAL INVESTMENT PER PIG	\$ 61.00

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Table 2. Building and Equipment Requirements—Beef Cowherd, Dairy, and Sheep Enterprises

BEEF COW/CALF ENTERPRISE (Beef Cow and Calf—150 Cows)		DAIRY ENTERPRISE, MF-272 (100 Cows—Hay, Drylot)	
BUILDINGS—IMPROVEMENTS		BUILDINGS—IMPROVEMENTS	
Buildings:		Buildings:	
Shed—10 Sq. Ft. Per Cow @ \$5 Per Ft.	\$ 5,000	Free Stall Shelter—120 Stalls @ \$300 Per Stall	\$ 36,000
Electrical Service and Grading	<u>1,975</u>	Yearling Heifer Shelter—50 Head @ \$200 Per Head	10,000
	\$ 6,975	Calf Shelter—50 Head @ \$200 Per Head	10,000
Feed Storage:		Electrical Service and Grading	<u>6,000</u>
Hay—200 Tons @ \$45 Per Ton	\$ 9,000		\$ 62,000
Protein—One 7-Ton Bulk Bin @ \$2,100 Per Bin	<u>2,100</u>		
	\$ 11,100	Feed Storage:	
Corrals—Concrete:		Hay—700 Tons @ \$45 Per Ton	\$ 31,500
Working Corrals, Fencing, Equipment— 665 Ft. @ \$6 Per Ft.	\$ 4,000	Grain (Dry)—10,000 Bu. @ \$1.30 Per Bu.	13,000
Holding Corrals, Feeding—1,500 Ft. @ \$2 Per Ft.	3,000	Protein—Two 7-Ton Bulk Bins @ \$2,100 Per Bin	<u>4,200</u>
Concrete—25 Sq. Ft. Per Cow @ \$1.25 Per Ft.	<u>3,125</u>		\$ 48,700
	\$ 10,125	Corrals—Concrete:	
TOTAL BUILDINGS—IMPROVEMENTS	\$ 28,200	Fencing, Holding Corrals—1,665 Ft. @ \$6 Per Ft.	\$ 10,000
EQUIPMENT		Fencing, Handling Corrals—2,500 Ft. @ \$2 Per Ft.	5,000
Equipment:		Concrete—40 Sq. Ft. Per Cow \$1.25 Per Ft.	<u>5,000</u>
Bale Handling Equipment	\$ 2,000		\$ 20,000
Range Cube Delivery System	3,000	TOTAL BUILDINGS—IMPROVEMENTS	\$130,700
Hay Feeders	3,000	EQUIPMENT	
Waterers	2,000	Equipment:	
Water System	4,000	Milking Barn Parlor (8 Stalls) and Bulk Cooler	\$70,000
Manure Loader	2,500	Feed Processing Center	20,000
Manure Spreader	8,000	Feed Distribution System	10,000
Scraper	1,000	Water System	5,000
Pickup Truck (¾)	3,200	Manure Storage System—\$100 Per Cow	10,000
Truck (½)	6,000	Manure Spreader	8,000
Tractor (⅓)	3,000	Tractor, Scraper	10,000
Miscellaneous	<u>1,900</u>	Pickup (½)	4,000
TOTAL EQUIPMENT	\$ 39,600	Miscellaneous	<u>2,300</u>
		TOTAL EQUIPMENT	\$139,300
TOTAL BUILDINGS—IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$ 67,800	TOTAL BUILDINGS—IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$270,000
TOTAL INVESTMENT PER HEAD	\$ 452.00	TOTAL INVESTMENT PER HEAD	\$2,700.00

Table 2. Building and Equipment Requirements—Beef Cowherd, Dairy, and Sheep Enterprises (Continued)

FARM EWE FLOCKS, MF-421 (500 Ewes—Fall and Winter Lambs—Hay and Silage— Not Confinement)		FINISHING FEEDER LAMBS, MF-634 (1,000 Head—Drylot, Confinement)	
BUILDINGS—IMPROVEMENTS		BUILDINGS—IMPROVEMENTS	
Buildings:		Buildings:	
Ewe and Lamb Shelter—5,000 Sq. Ft.		Shed—6 Sq. Ft. Per Lamb @ \$5 Per Sq. Ft.	\$ 30,000
@ \$5 Per Sq. Ft.	\$ 25,000	Electrical Service and Grading	<u>3,900</u>
Electrical Service and Grading	<u>3,325</u>		\$ 33,900
	\$ 28,325		
Feed Storage:		Feed Storage:	
Grain (Dry)—2,500 Bu. @ \$1.50 Per Bu.	\$ 3,750	Grain (Dry)—2,500 Bu. @ \$1.50 Per Bu.	\$ 3,750
Silage Bunker—400 Tons @) \$20 Per Ton	8,000	Hay—50 Tons @ \$45 Per Ton	2,250
Hay—115 Tons @ \$45 Per Ton	<u>5,175</u>	Protein—One 7-Ton Bulk Bin	<u>2,100</u>
	\$ 16,925		\$ 8,100
Corrals—Concrete:		Corrals—Concrete:	
Fencing, Loading Chute—1,000 Ft.		Fencing, Holding Chute—1,500 Ft.	
@ \$6 Per Ft.	\$ 6,000	\$2 Per Ft.	<u>\$ 3,000</u>
Concrete, Fenceline Feeder—10 Ft. Per Ewe			\$ 3,000
\$1.25 Per Ft.	<u>6,250</u>		
	\$ 12,250		
TOTAL BUILDINGS—IMPROVEMENTS	\$ 57,500	TOTAL BUILDINGS—IMPROVEMENTS	\$ 45,000
EQUIPMENT		EQUIPMENT	
Equipment:		Equipment:	
Forage Wagon	\$ 8,000	Self Feeders—10 Feeders	
Grain Bunks for Lambs—500		@ \$2,000 Per Feeder	\$ 20,000
@ \$10 Per Bunk	5,000	Hay Feeding Rack—500 Ft. @ \$3 Per Ft.	1,500
Water System 2,000		Watering System	5,000
Tractor, Loader (Prorated)	2,500	Tractor, Scraper, Loader (Prorated)	10,000
Manure Spreader (Prorated)	6,500	Manure Spreader	6,000
Scraper Blade	1,000	Pickup (¼)	2,000
Pickup (¼)	2,000	Miscellaneous	<u>500</u>
Miscellaneous	<u>500</u>	TOTAL EQUIPMENT	\$ 45,000
TOTAL EQUIPMENT	\$ 27,500		
TOTAL BUILDINGS—IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$ 85,000	TOTAL BUILDINGS—IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$ 90,000
TOTAL INVESTMENT PER EWE	\$ 170.00	TOTAL INVESTMENT PER HEAD	\$ 90.00

Table 3. Building and Equipment Requirements—Beef Cattle Feeding Enterprises

DRYLOT BACKGROUNDING OF BEEF, MF-600 (500 Head—Silage)		DRYLOT BACKGROUNDING AND FINISHING BEEF, MF-593 (380 Head—Silage)	
BUILDINGS—IMPROVEMENTS		BUILDINGS—IMPROVEMENTS	
Buildings:		Buildings:	
Hospital Ward—500 Sq. Ft.		Hospital Ward—500 Sq. Ft.	
@ \$6 Per Sq. Ft.	\$ 3,000	@ \$6.30 Per Sq. Ft.	\$ 3,150
Electrical Service and Grading	<u>3,000</u>	Electrical Service and Grading	<u>3,000</u>
	\$ 6,000		\$ 6,150
Feed Storage:		Feed Storage:	
Grain (Dry)—5,000 Bu. @ \$1.40 Per Bu.	\$ 7,000	Grain (Dry)—16,000 Bu. @ \$1.10 Per Bu.	\$ 17,650
Silage Bunker—750 Tons @ \$20 Per Ton	15,000	Silage Bunker—1,000 Tons @ \$20 Per Ton	20,000
Protein—Two 7-Ton Bulk Bins		Protein—Two 7-Ton Bulk Bins	
@ \$2,100 Per Bin	<u>4,200</u>	@ \$2,100 Per Bin	<u>4,200</u>
	\$ 26,200		\$ 41,850
Corrals—Concrete:		Corrals—Concrete:	
Fencing, Holding Corrals—1,600 Ft.		Fencing, Holding Corrals—1,600 Ft.	
@ \$2 Per Ft.	\$ 3,200	@ \$2 Per Ft.	\$ 3,200
Fencing, Working Corrals, Loading		Fencing, Working Corrals, Loading	
Chute—450 Ft. @ \$6 Per Ft.	2,700	Chute—450 Ft. @ \$6 Per Ft.	2,700
Concrete, Fenceline Feeder—3,520 Sq. Ft.		Concrete, Fenceline Feeder—4,000 Sq. Ft.	
\$1.25 Per Ft.	<u>4,400</u>	\$1.25 Per Ft.	<u>5,000</u>
	\$ 10,300		\$ 10,900
TOTAL BUILDINGS—IMPROVEMENTS	\$ 42,500	TOTAL BUILDINGS—IMPROVEMENTS	\$ 58,900
EQUIPMENT		EQUIPMENT	
Equipment:		Equipment:	
Feed Wagon	\$ 8,000	Feed Wagon	\$ 8,000
Silage Loader	3,000	Silage Loader	3,000
Fenceline Feeder and Neckrail—425 Ft.		Fenceline Feeder and Neckrail—500 Ft.	
@ \$10 Per Ft.	4,250	@ \$10 Per Ft.	5,000
Handling Equipment	3,000	Handling Equipment	3,000
Water System	2,000	Water System	2,000
Tractor, Scraper, Loader (Prorated)	10,000	Tractor, Scraper, Loader (Pro-Rated)	10,000
Manure Spreader	8,000	Manure Spreader	8,000
Feed Processing Center	10,000	Feed Processing Center	10,000
Pickup (¼)	2,000	Pickup (1/2)	4,000
Miscellaneous	<u>1,250</u>	Miscellaneous	<u>2,100</u>
TOTAL EQUIPMENT	\$ 51,500	TOTAL EQUIPMENT	\$ 55,100
TOTAL BUILDINGS—IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$ 94,000	TOTAL BUILDINGS—IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$ 114,000
TOTAL INVESTMENT PER HEAD	\$ 188.00	TOTAL INVESTMENT PER HEAD	\$ 300.00

Table 3. Building and Equipment Requirements — Beef Cattle Feeding Enterprises (Continued)

FINISHING BEEF, MF-592 (500 Head — Silage)	
BUILDINGS — IMPROVEMENTS	
Buildings:	
Hospital Ward — 500 Sq. Ft. @ \$6 Per Sq. Ft.	\$ 3,000
Electrical Service and Grading	<u>3,000</u>
	\$ 6,000
Feed Storage:	
Grain (Dry)—11,000 Bu. @ \$1.20 Per Bu.	\$ 13,200
Silage Bunker—285 Tons @ \$20 Per Ton	5,700
Protein— Two 7-Ton Bulk Bins @ \$2,100 Per Bin	<u>4,200</u>
	\$ 23,100
Corrals—Concrete:	
Fencing, Holding Corrals—1,600 Ft. @ \$2 Per Ft.	\$ 3,200
Fencing, Working Corrals, Loading Chute—450 Ft. @ \$6 Per Ft.	2,700
Concrete, Fenceline Feeder—4,000 Sq. Ft. @ \$1.25 Per Ft.	<u>5,000</u>
	\$ 10,900
TOTAL BUILDINGS—IMPROVEMENTS	\$ 40,000
EQUIPMENT	
Equipment:	
Feed Wagon	\$ 8,000
Silage Loader	3,000
Fenceline Feeder and Neckrail—500 Ft. @ \$10 Per Ft.	5,000
Handling Equipment	3,000
Water System	2,000
Tractor, Scraper, Loader (Prorated)	10,000
Manure Spreader	8,000
Feed Processing Center	10,000
Pickup (1/3)	2,640
Miscellaneous	<u>2,360</u>
TOTAL EQUIPMENT	\$ 54,000
TOTAL BUILDINGS—IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$ 94,000
TOTAL INVESTMENT PER HEAD	\$ 188.00

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Kansas State University Agricultural Experiment Station and Cooperative Extension Service

MF-940

October 1998

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File code: Farm Management 2