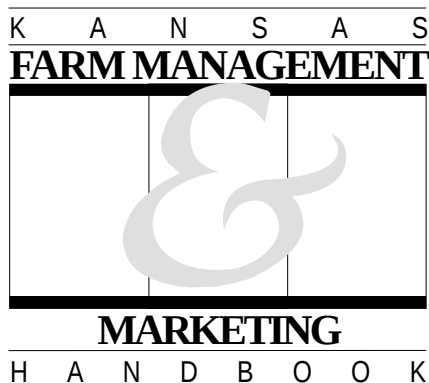




Livestock Building and Equipment Requirements

Department of Agricultural Economics



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Investment in Livestock-Production 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 expanded 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-266, *Beef Cow-Calf Enterprise*
MF-272, MF-2442, MF-2441, *Dairy enterprise guides*
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*
MF-292, *Farrow-to-Finish Swine*
MF-2153, *Farrow-to-Weaned Pig*
MF-2151, *Feeder Pig Nursery*
MF-2152, *Swine Finishing Barn*

The individual producer's livestock facility-equipment investment, and therefore costs, may differ from those used in these KSU cost return budgets.

Table 1. Building and Equipment Requirements — Swine Enterprises

FARROW TO FINISH SWINE OPERATION, (150 Sow — Confinement)	
BUILDINGS — IMPROVEMENTS	
Buildings:	
Gestation — 140 Sows @ \$450 Per Sow	\$ 63,000
Farrowing — 30 Sows @ \$2,000 Per Sow	60,000
Nursery — 530 Pigs @ \$110 Per Pig	58,300
Finishing — 1,020 Pigs @ \$140 Per Pig	142,800
Office, Site, etc.	<u>60,000</u>
TOTAL BUILDINGS — IMPROVEMENTS	\$384,100
EQUIPMENT	
Equipment:	
Gestation Building — Sow Equipment, Panels, Feeders — 140 Sows @ \$200 Per Sow	\$ 28,000
Farrowing Building — Sow Equipment, Farrowing Crates, Feeders — 30 Sows @ \$1000 Per Sow	30,000
Nursery Building — Pig Equipment, Panels, Feeders — 530 Pigs @ \$10 Per Pig	5,300
Finishing Building — Pig Equipment, Panels, Feeders — 1,020 Pigs @ \$25 Per Pig	<u>25,500</u>
TOTAL EQUIPMENT	\$88,800
TOTAL BUILDINGS — IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$472,900
TOTAL INVESTMENT PER SOW	\$ 3,153
TOTAL INVESTMENT PER LITTER	\$ 1,484
TOTAL INVESTMENT PER PIG SOLD	\$179.83
FARROW TO WEANED PIG OPERATION, (1,200 Sows — Confinement)	
BUILDINGS — IMPROVEMENTS	
Buildings:	
Gestation — 1,120 Sows @ \$450 Per Sow	\$ 504,000
Farrowing — 220 Sows @ \$2,000 Per Sow	440,000
Office, Site, etc.	<u>60,000</u>
TOTAL BUILDINGS — IMPROVEMENTS	\$ 1,004,000
EQUIPMENT	
Equipment:	
Gestation Building — Sow Equipment, Panels, Feeders — 1,120 Sows @ \$200 Per Sow	\$ 224,000
Farrowing Building — Sow Equipment, Farrowing Crates, Feeders — 220 Sows @ \$1000 Per Sow	<u>220,000</u>
TOTAL EQUIPMENT	\$ 444,000
TOTAL BUILDINGS — IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$1,448,000
TOTAL INVESTMENT PER SOW	\$1,207
TOTAL INVESTMENT PER LITTER	\$ 568
TOTAL INVESTMENT PER PIG SOLD	\$63.51

FEEDER PIG NURSERY

(1,200 Pigs — Total Confinement)	
BUILDINGS — IMPROVEMENTS	
Buildings:	
Nursery Building — 1,200 Pigs @ \$110 Per Pig	\$ 132,000
Office, Site, etc.	<u>15,000</u>
TOTAL BUILDINGS — IMPROVEMENTS	\$ 147,000
EQUIPMENT	
Equipment:	
Nursery Building — Pig Equipment, Panels, Feeders — 1,200 Pigs @ \$10 Per Pig	\$ 12,000
TOTAL BUILDINGS — IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$159,000
TOTAL INVESTMENT PER PIG SPACE	\$133
TOTAL INVESTMENT PER PIG SOLD	\$ 19.83
SWINE FINISHING BARN (1,200 Pigs — Total Confinement)	
BUILDINGS — IMPROVEMENTS	
Buildings:	
Finishing House — 1,200 Pigs @ \$140 Per Pig	\$ 168,000
Office, Site, etc.	<u>15,000</u>
TOTAL BUILDINGS — IMPROVEMENTS	\$ 183,000
EQUIPMENT	
Equipment:	
Finishing Building — Pig Equipment, Panels, Feeders — 1,200 Pigs @ \$25 Per Pig	\$ 30,000
TOTAL BUILDINGS — IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$213,000
TOTAL INVESTMENT PER PIG SPACE	\$178
TOTAL INVESTMENT PER PIG SOLD	\$ 65.85

Table 2. Building and Equipment Requirements — Beef

Cowherd and Dairy Enterprises

BEEF COW/CALF ENTERPRISE (Beef Cow and Calf — 200 Cows)	
BUILDINGS — IMPROVEMENTS	
Buildings:	
Shed (100 Cows) — 10 Sq. Ft. Per Cow @ \$7 Per Ft.	\$ 7,000
Electrical Service and Grading	<u>1,975</u>
	\$ 8,975
Feed Storage:	
Hay — 200 Tons @ \$45 Per Ton	\$ 9,000
Protein — One 7-Ton Bulk Bin	
@ \$2,100 Per Bin	<u>2,100</u>
	\$ 11,100
Corrals — Working Facilities:	
Working Corrals, Fencing, Equipment —	
665 Ft. @ \$6 Per Ft.	\$ 4,000
Holding Corrals, Feeding — 1,500 Ft.	
@ \$2 Per Ft.	<u>3,000</u>
	\$ 7,000
TOTAL BUILDINGS — IMPROVEMENTS	\$ 27,075
EQUIPMENT	
Equipment:	
Bale Handling Equipment	\$ 2,000
Hay Feeders	3,000
Waterers	2,000
Water System	4,000
Scraper	1,000
Pickup Truck (2/5)	4,700
Tractor (1/3)	4,000
Miscellaneous	<u>3,900</u>
TOTAL EQUIPMENT	\$ 24,600
TOTAL BUILDINGS — IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$ 51,675
TOTAL INVESTMENT PER HEAD	\$ 258.38
DAIRY ENTERPRISE MF-272 (100 Lactating Cows — 120 Cows Total)	
BUILDINGS — IMPROVEMENTS	
Buildings:	
Free Stall Barn	\$ 120,000
Hay Barn	5,280
Silage Bunker	30,791
Commodity Shed	5,876
Protein Bin	1,039
Milking Parlor (12 stalls, double 6)	156,000
Manure Storage	40,000
Electrical Service and Grading	<u>5,000</u>
TOTAL BUILDINGS — IMPROVEMENTS	\$363,986
EQUIPMENT	
Feed Handling, Processing Equipment,	
Tractors, Trailer, Pickups, etc.	\$80,000
TOTAL BUILDINGS — IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$443,986
TOTAL INVESTMENT PER LACTATING COW	\$4,440
TOTAL INVESTMENT PER COW IN HERD	\$3,700

DAIRY ENTERPRISE, MF-2441 (600 Lactating Cows — 720 Cow Total)	
BUILDINGS — IMPROVEMENTS	
Buildings:	
Free Stall Barn	\$ 630,000
Hay Barn	31,680
Silage Bunker	184,748
Commodity Shed	35,258
Protein Bin	6,233
Milking Parlor (24 stalls, double 12)	306,000
Manure Storage	228,000
Electrical Service and Grading	<u>20,000</u>
TOTAL BUILDINGS — IMPROVEMENTS	\$1,461,919
EQUIPMENT	
Feed Handling, Processing Equipment,	
Tractors, Trailer, Pickups, etc.	\$220,000
TOTAL BUILDINGS — IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$1,681,919
TOTAL INVESTMENT PER LACTATING COW	\$2,803
TOTAL INVESTMENT PER COW IN HERD	\$2,336
DAIRY ENTERPRISE, MF-2242 (2,400 Lactating Cows — 2,880 Cows Total)	
BUILDINGS — IMPROVEMENTS	
Buildings:	
Free Stall Barn	\$ 2,448,000
Hay Barn	126,720
Silage Bunker	738,990
Commodity Shed	141,032
Protein Bin	24,933
Milking Parlor (80 stalls, double 40)	1,000,000
Manure Storage	864,000
Electrical Service and Grading	<u>50,000</u>
TOTAL BUILDINGS — IMPROVEMENTS	\$5,443,675
EQUIPMENT	
Feed Handling, Processing Equipment,	
Tractors, Trailer, Pickups, etc.	\$450,000
TOTAL BUILDINGS — IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$5,883,675
TOTAL INVESTMENT PER LACTATING COW	\$2,452
TOTAL INVESTMENT PER COW IN HERD	\$2,043

Table 3. Building and Equipment Requirements — Sheep Enterprises

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 @ \$7 Per Sq. Ft.	\$ 42,000
@ \$7 Per Sq. Ft.	\$ 35,000	Electrical Service and Grading	<u>4,500</u>
Electrical Service and Grading	<u>5,000</u>		\$ 46,500
	\$ 40,000		
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	
	\$ 16,925	\$2,100 Per Bin	<u>2,100</u>
			\$ 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
\$1.50 Per Ft.	<u>7,500</u>		
	\$ 13,500		
TOTAL BUILDINGS — IMPROVEMENTS	\$ 70,425	TOTAL BUILDINGS — IMPROVEMENTS	\$ 57,600
EQUIPMENT		EQUIPMENT	
Equipment:		Equipment:	
Feed Handling	\$ 3,000	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	\$ 22,500		
		TOTAL BUILDINGS — IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$ 102,600
TOTAL BUILDINGS — IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$ 92,925	TOTAL INVESTMENT PER HEAD	\$ 102.60
TOTAL INVESTMENT PER EWE	\$ 185.85		

Table 4. 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.	
@ \$8 Per Sq. Ft.	\$ 4,000	@ \$8.00 Per Sq. Ft.	\$ 4,000
Electrical Service and Grading	<u>3,000</u>	Electrical Service and Grading	<u>3,000</u>
	\$ 7,000		\$ 7,000
Feed Storage:		Feed Storage:	
Grain (Dry) — 5,000 Bu. @ \$1.40 Per Bu.	\$ 7,000	Grain (Dry) — 16,000 Bu. @ \$1.50 Per Bu.	\$ 24,000
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		\$ 48,200
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.	
\$1.50 Per Ft.	<u>5,280</u>	\$1.50 Per Ft.	<u>6,000</u>
	\$ 11,180		\$ 11,900
TOTAL BUILDINGS — IMPROVEMENTS	\$ 44,380	TOTAL BUILDINGS — IMPROVEMENTS	\$ 67,100
EQUIPMENT		EQUIPMENT	
Equipment:		Equipment:	
Feed Wagon	\$ 10,000	Feed Wagon	\$ 10,000
Fenceline Feeder and Neckrail — 425 Ft.		Fenceline Feeder and Neckrail — 500 Ft.	
@ \$10 Per Ft.	4,250	@ \$10 Per Ft.	5,000
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 (½)	4,000
Miscellaneous	<u>1,250</u>	Miscellaneous	<u>2,100</u>
TOTAL EQUIPMENT	\$ 47,500	TOTAL EQUIPMENT	\$ 51,100
TOTAL BUILDINGS — IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$ 91,880	TOTAL BUILDINGS — IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$ 118,200
TOTAL INVESTMENT PER HEAD	\$ 184.00	TOTAL INVESTMENT PER HEAD	\$ 311.00

Table 4. Building and Equipment Requirements — Beef Cattle Feeding Enterprises (Continued)

FINISHING BEEF, MF-592 (500 Head — Silage)	
BUILDINGS — IMPROVEMENTS	
Buildings:	
Hospital Ward — 500 Sq. Ft. @ \$8.00 Per Sq. Ft.	\$ 4,000
Electrical Service and Grading	<u>3,000</u>
	\$ 7,000
Feed Storage:	
Grain (Dry) — 11,000 Bu. @ \$1.50 Per Bu.	\$ 16,500
Silage Bunker — 285 Tons @ \$20 Per Ton	5,700
Protein — Two 7-Ton Bulk Bins @ \$2,100 Per Bin	<u>4,200</u>
	\$ 26,400
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. @ \$1.50 Per Ft.	<u>6,000</u>
	\$ 11,900
TOTAL BUILDINGS — IMPROVEMENTS	\$ 45,300
EQUIPMENT	
Equipment:	
Feed Wagon	\$ 10,000
Fenceline Feeder and Neckrail — 500 Ft. @ \$10 Per Ft.	5,000
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	\$ 50,000
TOTAL BUILDINGS — IMPROVEMENTS/ EQUIPMENT INVESTMENT	\$ 95,300
TOTAL INVESTMENT PER HEAD	\$ 190.60

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