

LIVESTOCK ENTERPRISES — RESOURCE REQUIREMENTS

David P. Miller
 Area Extension Agent
 Farm Management
 Belle Valley Area

OSU Cooperative Extension Service
 The Ohio State University

FARM MANAGEMENT HANDBOOK

When considering the addition or expansion of a livestock enterprise, utilizing the budgeting process is the simplest and easiest method to examine the potential profit/loss of the enterprise and its effect on the overall business. A budget forces the manager to examine resource requirements, such as feed needs and cost, needed building space and equipment, the labor required for the enterprise, etc. All of this should take place on paper prior to investing the first dollar.

Resource requirements used for livestock enterprises can be gleaned from many sources. The following tables were developed from the Ohio Livestock Enterprise Budgets, the Midwest Plan Service Equipment Books, Managing the Small Swine Herd in Ohio, Keeping a Small Beef Herd in Ohio and Raising a Small Flock of Sheep in Ohio, all of which are available in your local County Extension office. Feed and labor requirements, expense standards and investment standards are only estimates to be used for budgeting purposes. As the budgeting process progresses, these estimates will need to be adapted and fine-tuned to fit the particular operation using the above mentioned publications and the farmer's financial and production records.

LIVESTOCK SPACE REQUIREMENTS

These space requirements and design recommendations are from the Midwest Plan Service and are based on currently popular types of buildings and equipments.

BEEF CATTLE

FEEDLOT, sq. ft./head

20' in barn and	Lot surfaced, cattle have
30' in lot	free access to shelter
50'	Lot surfaced, no shelter

150'-800'	Lot unsurfaced except around waterers, along bunks and open-front buildings, with a connecting strip
20'-25'	Sunshade

BUILDINGS WITH FEEDLOTS, sq. ft./head

20'-25'	600 lbs. to market
15'-20'	Calves to 600 lbs.
1/2 ton/head	Bedding

COLD CONFINEMENT BUILDINGS, sq. ft./head

30'	Solid floor, bedded
17'-18'	Solid floor, flushing flume
17'-18'	Totally or partly slotted
100'	Calving pen
1 pen/12 cows	Calving space

WATERERS

40 head/available water space in drylot

Corrals

600 lbs.	600-1200 lbs.	1200 + lbs.
- - - - -sq. ft./head- - - - -		
14'	17'	20' Holding
6'	10'	12' Crowding

FEEDERS, in./head along feeder

All animals eat at once:

18"-22"	Calves to 600 lbs.
22"-26"	600 lbs. to market
26"-30"	Mature cows
14"-18"	Calves

Feed always available:

4"-6"	Hay or silage
3"-4"	Grain or supplement
6"	Grain or silage
1 space/5 calves	Creep or supplement

Bunk throat height

Up to 18" for calves, 22" for feeders and mature cows

Use 30" height only if hogs will run with cattle

Bunk width

48" if fed from both sides of bunk

54"-60" if bunk is divided by mechanical feeder

18" bottom width if fed from one side of bunk

ISOLATION & SICK PENS

40-50 sq. ft./head

Pens for 2%-5% of herd

MOUNDS

25 sq. ft./head Minimum

HOGSFEEDER AND WATERER SPACE

Self-feeders: one space/5 pigs

Supplement feeders: one space/15 pigs

Sow feeders: 10'/sow self-feed, 2'/sow all fed at once

Waterers: one space/20 to 25 pigs

BUILDING FLOOR SPACE

Sows and boars: 15 to 20 sq. ft.

Pigs starting through finishing:

12 to 60 lbs. - 4 sq. ft.

60 to 125 lbs. - 6 sq. ft.

125 to market - 8 sq. ft.

100 to market: 5 sq. ft. under roof, + 13 sq. ft. on outside paved lot

Sow and litter:

26 sq. ft.: slotted floor, full confinement

32 sq. ft. inside + 42 sq. ft. outside for indoor-outdoor paved lot

PASTURE SPACE

10 gestating sows/acre

7 sows with litters/acre

50 to 100 growing-finishing pigs/acre depending on fertility

SLOT WIDTHS, in slotted floors

New-born pigs ¹	3/8" and 1"
12 to 60 lbs. ²	3/4" to 1"
60 to market	1"
Sows and Boars	1" to 1-1/4"

1 Cover slots during farrowing; 1" wide slots behind sows, 3/8" elsewhere.

2 3" width preferred over wider slats.

SHADE SPACE

15 to 20 sq. ft./sow

20 to 30 sq. ft./sow and litter

4 sq. ft./pig to 100 lbs.

6 sq. ft./pig over 100 lbs.

FLOOR AND LOT SLOPES

Slotted floors: usually flat

Farrowing, solid floors:

1/2" to 3/4"/ft. without bedding

1/4" to 1/2"/ft. with bedding

Finishing: 1/2" to 3/4"/ft.

Paved lots: 1/4" to 1"/ft.

Paved feeding floors:

Indoors: 1/4"/ft. minimum

Outdoors: 1"/ft.

Building alleys:

1/2"/ft. cross slope for crown

1/10" to 1/4"/ft. to drain

Gutters and pits:

1"/25' to 1"/100' to drains

1.5% slope for flush gutters

DAIRY CATTLERecommended Stall Barn Dimensions

<u>ALLEY WIDTH</u>	
Flat manager-feed alley	5'8"-6'6"
Feed alley with step manager	4'0"-4'6"
Service alley with barn cleaner	6'0"
Cross alley ¹	4'6"

MANAGER WIDTH

Cows under 1200 lbs.	20"
Cows 1200 lbs. or more	24"-27"

GUTTERS

Width ²	16" or 18"
Depth, stall side	11"-16"
Depth, alley side	11"-14"

¹ Taper the end stalls inward 6" at the front for added turning room for a feed cart.

² Or as required for barn cleaner.

Free Stall Dimensions

<u>CALVES</u>	<u>WIDTH x LENGTH</u>
6 weeks to 4 months	2'0" x 4'6"
5 to 7 months	2'6" x 5'0"
<u>HEIFERS</u>	
8 months to freshening	3'0" x 5'6"
<u>COWS (average herd weight)</u>	
1000 lbs.	3'6" x 6'10"
1200 lbs.	3'9" x 7'0"
1400 lbs.	4'0" x 7'0"
1600 lbs.	4'0" x 7'6"

TYPICAL FREE STALL ALLEY WIDTHS

Feeding alley between a bunk and the front of a stall row 9'-10'

Feeding alley between a bunk and the back of stall row 10'-12'

Resting alley between the backs of two stall rows:

Solid Floors	8'-10'
Slotted floors	6'- 9'

COW STALL PLATFORM SIZES

Use electric cow trainers

	<u>Stanchion Stalls</u>		<u>Tie Stalls</u>	
<u>Cow Weight</u>	<u>Width</u>	<u>Length</u>	<u>Width</u>	<u>Length</u>
< 1200 lbs.	4'0"	5'6"	4'0"	5'9"
1400 lbs.	4'6"	5'9"	4'6"	6'0"
> 1600 lbs.	Not recommended		5'0"	6'6"

SLAT SPACING

Elevated calf stalls: 3/4" between 1 x 2"s on edge

Calves, wide slats: 1-1/4" slot

Cows, wide slats: 1-1/2" to 1-3/4" slot

FEEDERS, in./head along feeder

All animals eat at once:

18"-22", calves to 600 lbs.

22"-26", heifers

26"-30", mature cows

Feed always available:

4"-6", hay or silage

Bunk capacity:

1 to 1-1/2 cu. ft./ft. of bunk length min. for animals fed twice daily

Bunk throat height

Up to 16" for calves, 20" for heifers, 24" for mature cows, 30" for mature cows on unscrapped, flat apron.

Bunk widths

48" if fed from both sides of bunk
54"-60" if bunk is divided by mechanical feeder
18" bottom width if fed from one side of bunk

WATERERS

40 head/available water space in confinement.

Pave at least a 10' apron around waterers.

SHEEPFEEDER SPACEGroup-fed:

16"-20"/ewe
9"-12"/feeder lamb

Self-fed:

10"-12" silage, 8"-10" hay/ewe
3"-4"/feeder lamb

Lamb creep space:

1-1/2 to 2 sq. ft./lamb

WATERER SPACEPer automatic bowl

40-50 ewes or ewes with lambs
50-75 feeder lambs

Per ft. of tank perimeter

15-25 ewes or ewes with lambs
25-40 feeder lambs

LAMBING PENS (jugs) 4' x 4' x 30"

or 4-1/2' x 4-1/2' x 36"; provide
grain and water

SHELTER SPACEOpen-front building with lot:

10-12 sq. ft./ewe
12-16 sq. ft./ewe and lambs
6-8 sq. ft./feeder lamb

Lot:

25-40 sq. ft./ewe
25-40 sq. ft./ewe and lambs
15-20 sq. ft./feeder lamb

Solid Floor (confinement):

12-16 sq. ft./ewe
15-20 sq. ft./ewe and lamb
8-10 sq. ft./feeder lamb

Slotted floor confinement:

8-10 sq. ft./ewe
10-12 sq. ft./ewe and lamb
4-5 sq. ft./feeder lamb

NURSERY PENS for 2 to 4 day old lambs before
putting into group pens:

About 16' x 16' for 20 ewes and 30 lambs.

Detailed construction data and livestock building plans are available through the Midwest Plan Service, Extension Agricultural Engineers and your local County Extension office. Please refer to these plans for further detailed information.

FEED BUDGET STANDARDS FOR LIVESTOCK^{1/}

	Bushels Corn Equivalent	Lbs. Supplement	Tons Corn Silage	Tons Grass Silage	Tons Hay	Pasture Tons, Hay Equivalent
Dairy Cows:						
13,000 lbs. milk	50	410	3.2	1.7	1.6	-
15,000 lbs. milk	68	680	3.2	1.7	1.6	-
17,000 lbs. milk	85	1030	3.2	1.7	1.6	-
Dairy Replacement, Birth to 24 Months	43	340	6.0	-	3.5	-
Dairy Goat:						
1,500 lbs. milk	16	150	-	-	.8	-
1,700 lbs. milk	18	170	-	-	.8	-
Beef Cows & Calves - Spring Calving	-	-	-	-	2.3	3.5
Beef Cows & Calves - Fall Calving	-	-	-	-	4.0	2.7
Steer Calves on Pasture 180-200 lbs. Gain	-	-	-	-	-	1.5
Cattle Feeding:						
Yearling Steer - 650-1050 lbs.	26	275	4.2	-	-	-
Steer Calves - 450-1050 lbs.	35	375	4.5	-	-	-
Heifer Calves - 450-900 lbs.	26	280	3.4	-	-	-
Sow & 2 Litters - 14 Pigs - 50 lbs.						
Confinement Facilities	49	1100	-	-	-	-
Low Investment Facilities	50	1150	-	-	-	-
Gilt & 1 Litter - Pasture Farrowing	44	450	-	-	-	-
Hog Finishing - 50-220 lbs.						
Confinement-High Investment	9.3	104	-	-	-	-
Low Investment	9.6	107	-	-	-	-
Pasture	10.2	109	-	-	-	-
Ewe & Lambs - 125% Early Lambing	7.5	35	-	-	.25	.5
Feeder Lamb - 70-100 lbs.	2	15	-	-	.1	-
Poultry:						
1,000 Layers - Confinement			900 cwt. - Purchased Feed			
1,000 Broilers - Confinement			78 cwt. - Purchased Feed			
1,000 Turkeys - Confinement			620 cwt. - Purchased Feed			

^{1/} From 1981 Ohio Livestock Budgets

EXPENSE, INVESTMENT & LABOR STANDARDS FOR LIVESTOCK - 1981

	Feed Expense ¹	Operating Expense ²	Equipment Investment	Facilities Investment	Hours of Labor
Dairy Cow					
13,000 lbs.	\$ 719	\$ 272	\$ 800	\$ 1650	60
15,000 lbs.	817	301	800	1650	60
17,000 lbs.	923	332	800	1650	60
Dairy Replacement	717	161	45	220	30
Dairy Goat:					
1,500 lbs.	194	98	75	150	10
1,700 lbs.	201	99	75	150	10
Beef Cows & Calves - Spring Calving	160	36	-	300	6
Beef Cows & Calves - Fall Calving	254	38	-	300	6
Steer Calves on Pasture - 180-200 lbs. Gain	30	18	-	100	2
Cattle Feeding:					
Yearling Steers 650-1050 lbs.	260	26	150	150	3
Steer Calves 450-1050 lbs.	312	31	120	150	4
Heifer Calves 450-900 lbs.	234	26	120	150	4
Sow & Two Litters - 14 Pigs @ 50 lbs.:					
High Investment	344	138	640	530	21
Low Investment	356	145	275	250	26
Gilt & One Litter - Pasture	218	82	140	110	12
Hog Feeding 50-220 lbs.:					
High Investment	\$ 47	\$ 9	\$ 13	\$ 17	.8
Low Investment	49	8	11	16	1
Pasture	51	8	20	6	4
Ewe & Lambs - 125% Early Lambing	50	12	5	60	4
Feeder Lamb 70-100 lbs.	12	4	3	25	1
Poultry:					
1,000 Layers	8100	222	2500	3850	200
1,000 Broilers	780	71	1485	2230	10
1,000 Turkeys	6200	544	5900	8900	60

¹ From 1981 Ohio Livestock Budgets

² Operating Expense does not include feed expense or purchased feeder animals, chicks, pullets or poults.

³ Investment in buildings, fence and facilities. Does not include land investment.

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