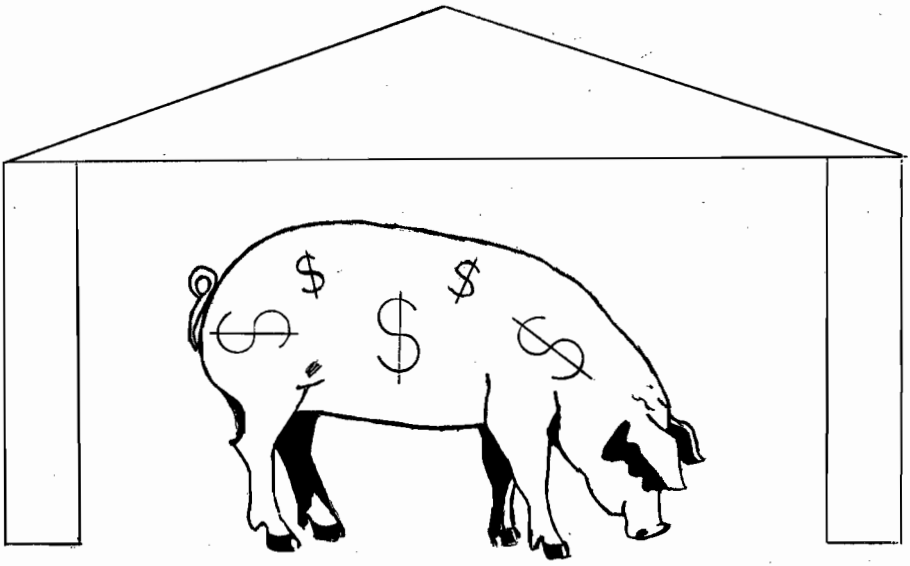
SWINE HOUSING AND EQUIPMENT COSTS



AGRICULTURAL EXTENSION SERVICE
University of California
Farm and Home Advisors Office
Agricultural Building
Woodland and West Main Streets
Visalia, California 93277

Prepared by
Robert F. Miller
Tulare County Farm Advisor

Co-operative Extension work in Agriculture and Home Economics, College of Agriculture, University of California, and United States Department of Agriculture co-operating. Distributed in furtherance of the Acts of Congress of May 8, and June 30, 1914. George B. Alcorn, Director, California Agricultural Extension Service.

SWINE HOUSING AND EQUIPMENT COSTS

This publication was prepared to show examples of different types of swine housing and the respective costs. The various types of housing depicted are being successfully used in Tulare County on practical and profit-oriented swine producing ranches. No one type of housing is recommended, since a number of factors will determine which is best suited for a given set of conditions. Some of the factors which need to be considered are:

1. Availability of capital and management.
2. Labor supply and cost.
3. Permanency of installation.
4. Alternate land use.
5. Plans for expansion.
6. Ultimate objectives of the owner.
7. Available outlets for water and manure disposal.

While actual housing units were used as examples, the costs used do not reflect actual construction costs. The costs used were arrived at after determining actual costs from owners, and in addition, cost estimates were received from a building contractor. The costs used are therefore a compromise, and should serve as a guide rather than a final figure.

The cost of wells and pressure systems and feeding and manure disposal systems have not been considered in this publication, since these systems must be designed to fit each situation. However, these items should not be overlooked in planning the costs of a hog production unit. Differences in operational costs also exist between different types of housing.

FARROWING UNITS

Two outside farrowing units were studied. In farrowing unit A the sow farrowed in a small Quonset hut building surrounded by a paneled enclosure. There are eight of these units on an acre of ground, with the acreage being planted in pasture. Farrowing is sche uled for four months in the spring and four months in the fall.

The unit B operation consists of a small wooden house located in a 24' x 36' panel enclosure. There is no pasture in this operation and farrowing takes place twelve months a year. Therefore electric heat is provided for the pig's comfort in the winter time.

UNIT A - FIELD UNIT

Capacity per field - 8 sows and litters

Field size	630' x 130' = 1.07 acres @ $750/acre	$ 802.50
Construction	- Fence	
	890' @ $.30/ft.	$ 267.00
Houses	8 @ $100 each	$ 800.00
Sow panels	40'/sow @ $.50/ft.	$ 160.00
Creep panels	32' @ $.50/ft.	$ 16.00
Plumbing	130' @ $.35/ft.	$ 45.50
Waterer	@ $25 each	$ 25.00
Feeders	(sow and creep) 9 @ $5 each	$ 45.00
Total cost		$2,160.50
Cost per sow		$ 270.06

UNIT B - PEN UNIT

Capacity per pen - 1 sow and litter		
Pen size	36' x 24' = .02 acres @ $750/acre	$ 15.00
Construction -	panels - 84' @ $.50/ft.	$ 42.00
House	@ $100 each	$100.00
Plumbing	24' x $.35/ft.	$ 8.40
Electric	$10/house	$ 10.00
Waterer		$ 8.00
Creep feeder		$ 5.00
Cost per pen and per sow		$188.40

CENTRAL FARROWING HOUSES

The characteristics of two central farrowing houses were examined and both operate more or less in the same manner. The sow farrows in a farrowing crate in the house and is maintained there for about two weeks, at which time she is placed with her litter in a nursery unit. Construction items that increase the cost of these houses include insulation, farrowing crates, a raised floor on which to put the crates, and expanded metal in front and behind the sow area. The per sow cost of a central farrowing house is higher than that of an outside unit. However, the central farrowing house has a lower cost computed on a per litter basis.

UNIT A - FARROWING HOUSE

Double Row of Crates

Capacity - 12 sows	
Area for crate and litter - 6' x 7' = 42	
Size 30' x 50' = 1500 @ $5/sq. ft.	$7,500.00
Crates - 12 @ $125 each	$1,500.00
Plumbing/house	$ 100.00
Electrical/house	$ 150.00
Fans and coolers	$ 150.00
Total cost	$9,400.00
Cost per sow	$ 783.33

UNIT B - FARROWING HOUSE

Double Row of Crates

Capacity - 18 sows	
Area for crate and litter - 5' x 7' = 35	
Size 30' x 60' = 1800 @ $5/sq. ft.	$ 9,000.00
Crates - 18 @ $125 each	$ 2,250.00
Plumbing/house	$ 150.00
Electrical/house	$ 175.00
Fans and coolers	$ 150.00
Total cost	$11,725.00
Cost per sow	$ 651.39

NURSERY UNITS

Costs on three nursery units were compiled. These units are roofed over, closed on three sides and are open to the south. A creep area and heated box is provided for the young pigs. Nursery units, at one time, were built to accommodate two sows and their litters. However, this practice did not prove to be satisfactory from a management standpoint and at present most producers like to keep one sow and a litter together. This is the reason why these pens seem larger than necessary and are more costly than they should be.

UNIT A - NURSERY

Capacity - 2 sows and litter per pen		
Pen size	21' x 12' = 252 @ $3/sq. ft.	$756.00
Alley	4' x 7' = 28 @ $3/sq. ft.	$ 84.00
Electric	$10/pen	$ 10.00
Plumbing	$10/pen	$ 10.00
Waterer		$ 8.00
Baby pig shelter		$ 20.00
Total cost per pen		$888.00
Cost per unit or sow		$444.00

UNIT B - NURSERY

Individual Pens

Capacity - 1 sow and litter per pen		
Pen size	6' x 16' = 96	
	@ $3/sq. ft.	$288.00
Alley	4' x 6' = 24	
	@ $3/sq. ft.	$ 72.00
Electrical	$10/pen	$ 10.00
Plumbing	$10/pen	$ 10.00
Waterer		$ 8.00
Baby pig shelter		$ 20.00
Cost per unit or sow		$408.00

UNIT C - NURSERY

Individual Pens

Capacity - 1 sow and litter per pen		
Pen size	9' x 18' = 162	
	@ $3/sq. ft.	$486.00
Alley	4' x 9' = 36	
	@ $3/sq. ft.	$108.00
Electric	$10/pen	$ 10.00
Plumbing	$10/pen	$ 10.00
Waterer		$ 8.00
Baby pig shelter		$ 20.00
Cost per sow and litter		$642.00

EARLY WEANING BARN

There are five pens on each side of the early weaning barn, with each pen designed to hold forty head of weaners until they reach approximately fifty pounds. The pen used as an example has an expanded metal floor. Other types of slats can also be used and all floors are over a two foot deep manure pit. The owner's objective is to leave the sow and her litter in the central farrowing house until the pigs reach three to four weeks of age and then wean and transfer them to this environmentally controlled barn, where they will stay until they are removed to a fattening unit.

EARLY WEANING BARN

Double Row of Pens

No. of head per pen - 40		
Pen size	7' to 16' = 112 @ $3/sq. ft.	$336.00
Alley *	7' x 4' = 28 @ $3/sq. ft.	$ 84.00
Expanded metal/pen		$ 85.00
Feeder		$ 50.00
Waterer		$ 8.00
Plumbing per pen		$ 10.00
Electrical		$ 10.00
Ventilating and cooling fans/pen		$ 20.00
Total cost		$603.00
Cost per head		$ 15.07

* Alley is 8' wide with 4' allocated per pen.

FATTENING UNITS

Four types of fattening units were considered in this study, unit A is a drylot operation; unit B is a solid floor type unit; unit C is partially slatted with the bottom six feet of each pen having slats over a manure pit; and unit D is a total slatted floor.

Unit A is located along a ditch bank where oak trees provide shade for the pigs in the summer and also serve as a windbreak in the winter, and also some bedding is provided to keep the pigs comfortable. Insofar as facilities are concerned, this is the cheapest unit per head capacity.

There are a number of confinement fattening units similar to B in the area and they have all worked out very well. They are roofed and are enclosed on three sides, with the south side being open. The north side can be opened to allow for air movement during the summertime. Sprinklers are used to cool the pigs in the summer and some bedding is provided during the winter months.

The lower six feet of the floor in unit C is slatted and the design of the building is similar to unit B. The pigs must be crowded if they are to keep a clean house. For this reason this building is used only for pigs weighing 100 pounds or more.

FATTENING UNITS

The floor of the unit D barn is totally slatted, the slats are nine feet long, four inches wide at the top, three inches wide at the bottom and four inches thick. They contain one three-quarter inch reinforcing bar located in the lower third of the slat and the cost is $4.50 each.

The manure pit under this slatted floor is six feet deep.

UNIT A - FATTENING UNIT

Outside Pen

No. of head per pen - 75

Pen size	150' x 150' = .52 acres	$390.00
Construction	- fence 450' @ $.30/ft.	$135.00
Cement Slab	10' x 30' = 300 @ $.60	$180.00
Plumbing	150' @ $.35/ft.	$ 52.50
Feeders	2 @ $100 each	$200.00
Waterer		$ 25.00
Total cost		$982.50
Cost per head capacity		$ 13.10

Square feet per head - 300

UNIT B - FATTENING UNIT

Confinement - Solid Floor

Pens in line		
No. of head per pen - 40		
Pen size	15' x 24' = 360	
	@ $2.50/sq. ft.	$ 900.00
Alley per pen	4' x 15' = 60	
	@ $2.50/sq. ft.	$ 150.00
Wash water pipe - 15' @ $.50/ft.		$ 7.50
Plumbing	$10/pen	$ 10.00
Automatic waterer		$ 8.00
Sprinkler	$5/pen	$ 5.00
Feeder		$ 100.00
Total cost per pen		$1,180.50
Cost per head capacity		$ 29.75

Square feet per head - 9.0

UNIT C - FATTENING UNIT

Confinement - Partial Slatted Floor

Pens in line		
No. of head per pen - 25		
Pen size	10' x 16' = 160	
	@ $2.75/sq. ft.	$440.00
Alley per pen	4' x 12' = 48	
	@ $2.50/sq. ft.	$120.00
Plumbing	$10/pen	$ 10.00
Waterer		$ 8.00
Sprinklers	$5/pen	$ 5.00
Feeder	$50/pen	$ 50.00
Total cost per pen		$633.00
Cost per head capacity		$ 25.32

Square feet per head - 6.4

UNIT D - FATTENING UNIT

Confinement - Total Slatted Floor

Double row of pens		
No. of head per pen - 20		
Pen size	9' x 16' = 144 @ $3/sq. ft.	$432.00
Alley *	2' x 9' = 18 @ $3/sq. ft.	$ 54.00
Plumbing	$10/pen	$ 10.00
Waterer		$ 8.00
Sprinklers	$5/pen	$ 5.00
Feeder	$50/pen	$ 50.00
Total cost per pen		$559.00
Cost per head capacity		$ 27.95

Square feet per head - 7.2

* Alley is 4' wide - 2' allocated per pen.

DRY SOW UNITS

Costs of five dry sow units were analyzed in this study. Three of these units were on dirt and two were of the cement confinement type. The major difference in cost between the three dirt units was governed by the size of the pen. The larger pen is more costly, both as to land value and also in the amount of fencing necessary for the enclosure. The cost developed on the confinement unit D is an example of an operation in which the sows are confined on cement in ten head groups. The lower 4 ft.

of this pen is slatted and the pens are in a building covered on three sides and open to the south. Unit E shows the costs of individual crates. The floor is cement, with the back four feet of the pen having steel slats over a manure pit. The crates are made from pipe that is welded together to form the crate. A small trough is in the floor in front of the crates and fresh water runs in this trough at all times.

UNIT A - DRY SOW UNIT

Dirt Pen

Sows per pen -	10 head	
Pen size	33' x 75' = .056 acre @ $750/acre	$ 42.00
Construction	- fence 141' @ $.30/ft.	$ 42.30
Cement feeding	slab 33' x 10' = 330 @ $.60/sq. ft.	$198.00
Plumbing	33' @ $.35/sq. ft.	$ 11.55
Automatic waterer		$ 8.00
Shade	8' x 16' = 152 @ $.40/sq. ft.	$ 60.80
Sprinklers		$ 10.00
Cost per pen		$372.65
Cost per sow		$ 37.26

UNIT B -- DRY-SOW UNIT

Dirt Pen

Sows per pen - 10 head		
Pen Size	90' x 120' = .25 acre @ $750/acre	$187.50
Construction - fence	300' @ $.30/ft.	$ 90.00
Cement feeding slab - 10' x 15'	150 @ $.60/sq. ft.	$ 90.00
Plumbing	90' @ $.35/ft.	$ 31.50
Automatic Waterer		$ 8.00
Shade	8' x 16' = 128 @ $.40/sq. ft.	$ 51.20
Sprinklers		$ 10.00
Cost per pen		$468.20
Cost per sow		$ 46.82

UNIT C - DRY SOW UNIT

Dirt Pen

Sows per pen - 10 head		
Pen size	400' x 40' = .36 acres @ $750/acre	$270.00
Construction - fence	480' @ $.30 ft.	$144.00
Cement feeding slab	6' x 24' = 144 @ $.60/sq. ft.	$ 86.40
Water pipe and plumbing	40' x $.35/ft.	$ 14.00
Automatic waterer		$ 8.00
Shed	8' x 16' = 128 @ $.75/sq. ft.	$ 96.00
Sprinklers		$ 10.00
Cost per pen		$628.40
Cost per sow		$ 62.80

UNIT D - DRY SOW UNIT

Cement Confinement Pen

Sows per pen - 10		
Pen size	12' x 12' = 144 @ $1.75/sq. ft.	$252.00
Alley	4' x 12' = 48 @ $1.75/sq. ft.	$ 84.00
Plumbing	$10 per pen	$ 10.00
Waterer		$ 8.00
Sprinklers	$5/pen	$ 5.00
Fencing - pipe	190' @ $.24/ft.	$ 45.60
- labor	@ $30/pen	$ 30.00
Steel slats	37 @ $2 each	$ 74.00
Cost per pen		$508.00
Cost per sow		$ 50.80

UNIT E - DRY SOW UNIT

Cement Confinement Stall

Sows per pen - 1		
Pen size	2' x 9' = 18 @ $2/sq. ft.	$36.00
Alleys - 3' x 2 front & 4' x 2 back	14 sq. ft. @ $2	$28.00
Pipes	47.5'/crate @ $.24/ft.	$11.44
Labor	$10/crate	$10.00
Steel slats	5/pen @ $2/slat	$10.00
Cost per pen and sow		$95.44

PRICES USED

Housing

Land	$750/acre
Central Farrowing House	$5/sq. ft.
Individual Farrowing Houses	$100 each
Nursery	$3/sq. ft.
Early Weaning Barn	$3/sq. ft.
Fattening Pens - solid floor	$2.50/sq. ft.
Fattening Pens - partial slats	$2.75/sq. ft.
Fattening Pens - total slats	$3/sq. ft.
Dry Sow Pens - cement	$2.50/sq. ft.
Sheds	$.75/sq. ft.
Shades	$.40/sq. ft.

Equipment

Farrowing Crates	$125 each
Feeders	$50 to $100 each
Float Type Waterer	$25 each
Automatic Waterer	$8 each
Individual Feeders	$5 each

Construction and Materials

Fencing	$.30/ft.
Panels	$.50/ft.
3/4" Pipe - installed outside	$.35/ft.
1½" Pipe - installed inside	$.50/ft.
Variable size - black fence pipe	$.24/ft.
Plumbing	Variable
Electrical	Variable
Sprinklers - inside	$5/pen
- outside	$10/pen
Cement Slabs	$.60/sq. ft.