UMC

Science and Technology

GUIDE

Published by the University of Missouri - Columbia Extension Division

ATTENTION SMALL FARM FAMILIES

Feeder Pig Enterprise for Small Farms

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The production of feeder pigs is particularly attractive for beginning farmers and those with relatively small herds. It is one of the few agricultural enterprises remaining where a person has an opportunity to start on a small scale with a minimum investment and grow into the business. Success in this type of operation has been demonstrated many times and accounts in a good part for the large total number of feeder pigs being raised and marketed from Missouri.

Success in the production of feeder pigs is certainly not automatic. Families beginning the operation with a minimum of facilities will find it is a fairly high labor enterprise. It also requires that management practices be done on a timely basis.

Purchase of Gilts for the Beginner

The selection of foundation gilts is important. In Missouri, producers have an excellent opportunity to purchase good breeding stock. Sources of foundation animals include:

Purebred breeders. Many leading purebred producers in Missouri sell breeding stock privately or at production sales. Most of these animals will have some performance data on them and all will meet the health testing requirements. Many of the purebred breeders have gone to producing additional breeds and will have for sale crossbred gilts from two breeds. Since feeder pig producers should be on a cross breeding program, this can make an excellent source of cross bred gilts.

Commercial Producers. Many good commercial producers will offer crossbred gilts for sale at slightly above market hog price. These can be an excellent source of replacement gilts if this producer has been using performance tested boars and has a good selection program for his own replacements. It is unlikely that he will have individual data on these animals; however, it may be possible to get pen feed efficiency figures and a good estimate on average daily gain.

In selecting from either of these two sources, you need to look at the individual and make an attempt to find sound structural and reproductive gilts that will fit into a feeder pig program.

On Farm Selection of Gilts

The turnover of sows in a herd is fairly rapid. This may be from 25 to 30% of the sows each year. A good culling program and selection program for replacement gilts work hand in hand. You need to have some definite criteria in mind for selection of gilts. Mark pigs when they are born so that you can identify the litters they come from. A simple ear notching system works well. (See University of Missouri Guide #2505 "University Ear Notching System for Pigs"). Select gilts from your best sows to keep. Pick gilts that come from sows that produce large litters. Also see that they are from sows that are free of disease and breeding problems and are good mothers. A good replacement gilt should weigh 230 pounds in 170 days or less. She should have at least 12 well placed teats, have good conformation and no physical defects.

You can start with simple facilities.

Gilt Selection Calendar

When	*What*
Birth	• Identify gilts born in large litters. Hernias, cryptorchids and other abnormalities should disqualify all gilts in a litter for use as replacements. • Record birth dates, litter size, identification. • Equalize litter size by moving boar pigs from large litters to sows with small litters. Pigs should nurse some before you move them. • Keep notes on sow behavior at time of farrowing and check on (a) disposition, (b) length of farrow, (c) any drugs such as oxytocin administered. (d) condition of udder, (e) fever.
3-5 wk	• Wean litters. Feed balanced, well-fortified diets for maximum growth and development (see Table 5 in UMC Guide 2501 for examples). • Screen gilts identified at birth by examining underlines; reject those with fewer than 12 well-spaced teats. If possible, at this time select and identify about two to three times the number needed for replacement.
180-200 lb	• Weigh and backfat-probe potential replacement gilts. Evaluate for soundness. • Select for replacements the fastest growing, leanest gilts that are sound and from large litters. Save 25-30% more than needed for breeding. • Remove selected gilts from market hogs. • Reduce energy portion of their feed. Place on properly formulated sow ration. (See Table 1.) • Give fenceline contact with boar. • Observe times when gilts come in heat. If records are kept, give advantage to those gilts that have cycled most frequently when final culling is made.
Breeding time	• Make final cull when the breeding season begins and keep enough extra gilts to offset the percentage of non-conception in your herd. • Make sure all sows and gilts are ear-tagged or identified.

Some tips on selection of gilts are shown in the gilt selection calendar.

Selection of the Boar

In most feeder pig operations improvement in the genetics of pigs marketed will come primarily through the selection of superior boars. You should buy boars with performance records. Records on daily gain, feed efficiency, and an estimate on carcass traits are very important. Also make a particular effort to buy boars that are sound in feet and legs and have an adequate underline. If possible, buy boars from the top 50 percent of the test group.

Suggested Selection Standards for Replacement Boars

Boars meeting the following standards should receive serious considerations as potential herd sires:

Trait	*Standard*
Litter size	10 or more, farrowed, and 8 or more weaned.
Underline	12 or more, fully developed, well-spaced teats.
Feet and legs	Medium to large bone, wide stance both front and rear, free in movement, good cushion to both front and rear feet, equal sized toes.
Age at 230 lb.	155 days or less.
Feed/gain, boar basis (60-230 lb)	275 lb/cwt gain or less.
Daily gain (60-230 lb)	2.00 lb/day or higher.
Backfat probe (adj. 230 lb)	1.0 inch or less.

You should buy boars from herds that are free of disease and parasites. They should have a negative test for leptospirosis and pseudorabies. A new boar should be isolated from your herd after being brought to the farm for at least 30 days to avoid bringing in contagious diseases. Following this isolation, he should be exposed to manure from your sow herd so that he can build up immunity to these particular disease organisms prior to being put with the sow herd.

Sow Rations

For the beginner, particularly with a small number of sows, a complete commercial sow feed may be best. Usually, this source will be somewhat higher in cost than buying a protein supplement and mixing with home grown grain or mixing complete rations, including minerals, vitamins, and additives. However, for small amounts the savings will not pay the cost of measuring and mixing equipment. Table 1 gives suggestions for those who want to mix their own.

Proper feeding of breeding stock is very important. Feed accounts for 50 to 60% of all costs in raising feeder pigs. It is very important that you feed a ration that meets all the nutritional requirements and is as economical as possible.

TABLE 4

Estimated Requirements and Costs to Produce Feeder Pigs[1]

Based on 14, 50 Pound Feeder Pigs per Sow per Year

Item	Amount/Year	Cost/Sow Per Year	Cost/Cwt. of Pig
VARIABLE COSTS			
1. Grain (corn equivalent)	48 bu. @ $ 2.25/bu.[2]	$108.00	$ 15.43
2. Protein	630 lb. @ 8.00/cwt.[2]	50.40	7.20
3. Mineral & salt	45 lb. @ 8.00/cwt.[2]	3.60	.51
4. Pig Starter	110 lb. @ 12.00/cwt.	13.20	1.89
5. Creep Feed	450 lb. @ 10.00/cwt.	45.00	6.43
6. Antibiotics		3.00	.42
TOTAL FEED COSTS		$223.20	$ 31.88
7. Veterinary & Medicine		$ 7.35	$ 1.05
8. Other Livestock Materials (small equip. items)		8.68	1.24
9. Mach. & Equip. (fuel & repairs including truck)		13.09	1.87
10. Utilities		5.32	.76
11. Insurance on Sows & Facilities		.84	.12
12. Taxes on Sows and Pigs		.98	.14
13. Livestock buildings, fences, equip.-repairs		9.73	1.39
14. Operating Interest (on money spent for feed, etc.)		12.43	1.78
15. Miscellaneous Overhead		1.33	.19
16. Marketing (pigs and cull sow)		28.00	4.00
TOTAL VARIABLE COSTS		$310.95	$ 44.42
FIXED COSTS			
17. R.E. Taxes, Depreciation & Interest on Facilities		$ 21.00	$ 3.00
18. Interest on Breeding Herd		7.00	1.00
19. Interest & Depreciation (Machinery & Equipment)		17.50	2.50
TOTAL FIXED COSTS[3]		$ 45.50	$ 6.50
TOTAL ALL COSTS[4] (except labor)		$356.45	$ 50.92

[1]This information is based on performance of Missouri feeder pig producers participating in University Record Program with adjustments for anticipated prices of next few years.

[2]These amounts of feed are equal to about 3,175 to 3,200 pounds of complete sow feed per sow per year.

[3]For those producers who have facilities paid for and are not considering alternative uses of resources, the variable costs should cover out-of-pocket costs (particularly in the short run). Too, the depreciation and interest on facilities on line 17 assumes that the facilities will be used by at least two sows per year -- that is four farrowings. Less usuage will increased fixed costs per sow and per pig. Labor is not included in this example. The amount of labor required to take care of a sow for one year varies with the number of sows being handled and the kind of facilities used. As a guide one could use 22 hours of labor when 14, 50 pound pigs per sow per year are produced.

[4]The total costs of $356.45 per sow per year (and $50.92 per cwt. of pig produced and about $25.00 per 50# pig produced) is probably about what the average producer will have the next year or two if corn price is around $2.25 per bushel.

To determine adequate boar power for your herd, think in terms of number of services required per week rather than numbers of sows per boar. A young boar (8½ to 12 months) should service no more than one time per day and 7 times a week. A mature boar over 12 months on the other hand can be used for 2 services a day but should not exceed 10 per week.

TABLE 3
Recommended Maximum Number of Services Per Boar by Age

Boar	Daily	Weekly
Young (8½-12 months)	1	7
Mature (over 12 months)	2	10

Important Points to Remember:

1. A sow sould be serviced twice during her heat cycle so it is important to have enough boar power.
2. Gilts should be 7-8 months old, weigh 250 pounds or more and should have had two or three heat cycles before breeding.
3. Boars should be at least eight months old at breeding time and isolated on your farm for at least 30 days before breeding.
4. Sows should be vaccinated for erysipelas and leptospirosis four to six weeks before farrowing.
5. Worm the sow about 1 to 2 weeks before she is put in the farrowing house. Check with the Extension office on what to use.
6. Spray the sow for lice and mange about 4 to 5 weeks before she farrows. Check with the Extension office on what to use.

Farrowing

Farrowing is a critical part in hog production. You must be prepared for farrowing season.

The central farrowing house can be a fancy system or it can be nothing more than an old building. Some of the advantages of farrowing in a central building are that a central watering system can be used, electricity is more easily available, feed supplies are more easily handled, care of pigs at farrowing is easier and in general less labor is required. Disadvantages may include manure disposal, lack of ventilation, disease, and possibly greater capital investments. Farrowing crates should be used when pigs are farrowed in a building. Plans for farrowing crates are available from the local Extension Center.

A common system of farrowing is the use of portable farrowing houses. This is more flexible than central farrowing and generally costs less. (Plans for a portable farrowing house are available at the local Extension Center.) The houses should be located in a well drained area to reduce mud.

Pigs will perform best if they are farrowed on a new area each farrowing. However, this does involve considerable time and labor and many producers have found they can successfully raise two litters on the same ground.

The sow should be placed in the farrowing house one to two days before farrowing. A gilt should be placed in the farrowing house two to three days before farrowing. A small exercise lot six by 18 feet should be available to the sow and her litter. Electric fencing is often used in forming lots. Plenty of water must be available to the sow and her litter.

The baby pig needs a creep feed in addition to the mother's milk. The creep feed should be available to the baby pigs by the time they are a week old. Creep feeding can consist of about any arrangement that will allow the baby pigs to eat but keep the sow out. Feed a pre-starter until the pigs weigh 15 to 17 pounds, then gradually change to a starter with 18 percent protein. Change to a 16 percent crude protein grower ration when pigs weigh 35 to 40 pounds.

Tips for Saving Pigs

- Sows must have a clean, dry area in which to farrow.
- Include bran meal in the ration about one week before farrowing if constipation is a problem.
- Wash the sow's udder with soap or some disinfectant before putting her in the farrowing house.
- Be present when sows farrow. Remove mucus from the noses of newborn pigs. Make sure the baby pigs get mother's milk as soon as possible after birth.
- Examine sows for caked udder. If there is a problem, the udder will usually feel warmer and milk may not be present. Antibiotics and hormones have been used successfully in some cases. Consult your veterinarian for advice if this is a herd problem.
- Dip navel of newborn pigs in iodine.
- Clip needle teeth soon after birth.
- Baby pigs should be placed under a heat lamp if the outside temperature is below 65 degrees.
- Pigs born in confinement need a source of iron. The iron can be supplied by injecting the pigs with an iron compound at 1 to 3 days of age or by supplying worm free dirt for the pigs to dig in.
- When sows farrow within 48 hours of each other, baby pigs can be moved between the sows to even up litters. Masking the body odor of the pigs will be helpful. Transfer the big pigs instead of the little ones.
- Castrate boar pigs at 3 to 14 days of age.
- Wean pigs at 5 to 8 weeks.
- Watch for baby pig scours and other diseases. Consult a veterinarian if you do not know what to do.
- The baby pig should receive a worming chemical at 6 to 9 weeks of age, but not at the same time the pigs are weaned.
- When possible, wean by moving the sow rather than the young pigs.

TABLE 1
Suggested Sow Rations With Corn as the Grain Source

Ingredient	Ration number 1	2	3	4	5	6	7
	Pounds						
corn, yellow	1,570	1,205	1,245	1,235	1,595	1,635	1,435
oats	—	400	—	—	—	—	—
wheat midds	—	—	400	—	—	—	—
wheat bran	—	—	—	400	—	—	—
soybean meal, 44%	360	325	285	300	260	210	300
meat & bone scraps, 50%	—	—	—	—	100	—	—
tankage, 60%	—	—	—	—	—	100	—
dehydrated, alfalfa meal, 17%	—	—	—	—	—	—	200
calcium carbonate	25	25	30	30	15	15	15
dicalicum phos.	30	30	25	20	15	25	35
salt	10	10	10	10	10	10	10
vitamin trace mineral mix	5	5	5	5	5	5	5
Total	2,000	2,000	2,000	2,000	2,000	2,000	2,000

Those who are buying a commercial supplement containing the vitamins and trace mineral as well as the protein will need to follow directions on levels of supplement to mix with their corn or other grain source.

Sows should be fed different amounts of the ration at different times. Table 2 shows some suggested feeding rates for replacement gilts and sows. These figures are guides and will need to be varied according to the condition of the sow. Also, during lactation, the amounts fed will depend on the numbers of pigs that the sow is nursing.

TABLE 2
Feeding Rates for Replacement Gilts & Sows

	Pounds of Feed/day
Gilts 200-250 lbs	4-5
Gilts flushing-21 days prior to breeding	6-8
Sows 1st 2/3 pregnancy	4-5
Sows last 1/3 pregnancy	6-7
Sows farrowing-weaning	10-14

Self-Feeding vs. Hand Feeding

Self-feeding pregnant sows has not worked out very well. It reduces the amount of labor but even with bulky feeds, the sow will usually get too fat. Self-feeding tends to increase feed cost. There are some commercial feeds now being marketed that use mineral additions to limit consumption. These products work fairly well. But compare their cost vs. hand-feeding.

Hand-feeding of sows in lots or pasture can be done easily and at a low cost by using feeding stalls (plans are available at the local Extension Center). Stalls are helpful in making sure the sows get enough of the right kind of feed. Alternate day feeding during gestation also will work well. This will reduce labor and research data indicates this doesn't affect the numbers of pigs born or their performance. When feeding sows every second day, double the recommendations for the daily feed requirement.

A good legume grass pasture can lower feed cost. Ladino clover, alfalfa, and a grass such as orchard grass make excellent pastures for sows. Rape pastures make excellent summer pastures for hogs. On excellent pasture, feed per day can be reduced as much as a pound to a pound and a half per sow. There is a large variation in types and quality of pastures. Fescue pasture, wood lots, or brush land do not have nearly as much nutrient value as a good legume pasture.

A good pasture can handle 8 to 10 sows per acre or 7 sows with litters. It is important to provide shade if you do not have trees to provide a natural shade. The shade should be in a well-drained area that is free of mud. Plenty of water should be available. It is a good practice to keep replacement gilts separate from sows unless you are using feeding stalls.

Breeding and Gestation

The breeding program should be carefully planned and controlled. Crossbreeding improves pig performance from birth to weaning and a crossbreeding program should be used by feeder pig producers. Crossbreeding is a method of mating a sow of one breed with a boar of a different breed or using a purebred boar of one breed on your crossbred sow. For example, mating a Yorkshire gilt to a Duroc boar gives you a two-way cross. In most cases you then would breed the crossbred gilts you saved for replacement to a third breed such as a Hampshire. This would give you a three-way cross. An important point is that you must plan your breeding program. Information is available at your local Extension Centers concerning breeds to use and the methods of breeding.

It is important that adequate boar power be provided for the groups of females to be bred. Generally, a young boar can pen breed 8 or 10 gilts in a four-week breeding period; a mature boar can breed up to 10 to 12. Don't turn a young, untried boar in with a group of sows that have just had pigs weaned and are coming into heat. Be sure to allow for adequate boar power. When a group of sows is bred at the first heat after weaning, a high % will cycle within a 4 to 7 day period.

TABLE 5

Annual Feeder Pig Income and Costs

	My Farm (Column 1)
Average number of sows on hand for the year	
Number of pigs weaned	
Number of gilts kept for replacements	

INCOME FROM THE HERD

1. No. of pigs sold _____ x price/head[1] $_____	$
2. No. of sows sold _____ x price/head $_____	$
3. Total income from the herd (Add Ln. 1 & 2)	$
4. Income per sow (Ln 3 divided by No. of Sows)	$

COSTS FOR THE HERD	Est. Cost /Sow/Yr.	MY FARM Cost/Sow/Yr.	MY FARM For the herd
5. Grain (corn equivalent) ..... 48 bu.	$108.00	$	$
6. Protein ..... 630 lb.	50.40		
7. Mineral & salt ..... 45 lb.	3.60		
8. Pig starter ..... 110 lb.	13.20		
9. Creed feed ..... 450 lb.	45.00		
10. Antibiotics	3.00		
11. TOTAL FEED COSTS	$223.20	$	$
12. Veterinary and medicine	7.35		
13. Other lvst. materials (sm. equip. items)	8.68		
14. Mach. & equip., fuel, repairs including truck ...	13.09		
15. Utilities	5.32		
16. Insurance on sows & facilities	.84		
17. Taxes on sows & pigs	.98		
18. Livestock bldgs., fences, equip.-repairs	9.73		
19. Operating interest (on money spent for feed, etc.)	12.43		
20. Miscellaneous overhead	1.33		
21. Marketing pigs and cull sow	28.00		
22. TOTAL OPERATING OR VARIABLE COSTS (Add lines 11 through 21)	$310.95	$	$
23. R.E. Taxes, depr. & int. on facilities	21.00		
24. Interest on breeding herd investment	7.00		
25. Interest & depreciation on mach. & equip.	17.50		
26. TOTAL OVERHEAD OR FIXED COSTS (Add lines 23 through 25)	$ 45.50	$	$
27. TOTAL OF ALL COSTS (Add Ln. 22 & 26)	$356.45	$	$

28. Net income from herd above feed (Ln. 3 minus Ln. 11, Col. 1)	$
29. Net income from herd above operating costs (Ln. 3 minus Ln. 22, Col. 1) ...	$
30. Net income from herd above all costs (Ln. 3 minus Ln. 27, Col. 1)	$
31. Amount available during year for principal payments	$

[1]While its difficult to predict with much accuracy what the price of feeder pigs will be at any future time, there is a rule of thumb (and supported by the study of feeder pig sales), that 50 pound pigs over a long period of time average about 1.8 times the price of market hogs. If market hogs average $36-$40 per cwt. for example, in 1978, 50 pound feeder pig prices will probably average about 65-70 cents per cwt. or $33-$35 per head.

■ Issued in furtherance of Cooperative Extension Work Acts of May 8 and June 30, 1914 in cooperation with the United States Department of Agriculture. Leonard C. Douglas, Acting Director, Cooperative Extension Service, University of Missouri and Lincoln University, Columbia, Missouri 65211. ■ An equal opportunity institution.